2350 FIFTH AVENUE

NEW YORK, NEW YORK

Remedial Action Work Plan – Phase 1

NYSDEC Site Number: 2-31-004

Prepared for:
2350 Fifth Avenue Corporation
309 East 94th Street, Ground Floor
New York, NY 10128

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016

FEBRUARY 2012

TABLE OF CONTENTS

TABLE OF CONTENTS ... i
CERTIFICATION ... vi
LIST OF ACRONYMS ... vii
EXECUTIVE SUMMARY ... ix
1.0 INTRODUCTION ... 1
1.1 SITE LOCATION AND DESCRIPTION ... 1
1.2 CONTEMPLATED USE ... 1
1.3 DESCRIPTION OF SURROUNDING PROPERTY ... 2
2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS ... 2
2.1 SUMMARY REMEDIAL INVESTIGATIONS PERFORMED ... 2
2.1.1 Borings and Wells ... 3
2.1.2 Samples Collected ... 3
2.1.3 Chemical Analytical Work Performed ... 3
2.1.4 Documentation ... 3
2.2 SIGNIFICANT THREAT ... 4
2.3 SITE HISTORY ... 4
2.3.1 Past Uses and Ownership ... 4
2.3.2 Previous Environmental Reports ... 4
2.3.3 Sanborn Maps ... 5
2.4 GEOLOGICAL CONDITIONS ... 5
2.5 CONTAMINATION CONDITIONS ... 6
2.5.1 Conceptual Model of Site Contamination ... 6
2.5.2 Description of Areas of Concern ... 7
2.5.3 Identification of Standards, Criteria and Guidance ... 8
2.5.4 Soil/Fill Contamination ... 8
2.5.4.1. Summary of Soil/Fill Data ... 8
2.5.4.2. Comparison of Soil/Fill with SCGs ... 8
2.5.5 On-Site and Off-Site Groundwater Contamination ... 9
2.5.5.1. Summary of Groundwater Data ... 9
2.5.5.2. Comparison of Groundwater with SCGs ... 10
2.5.6 On-Site and Off-Site Soil Vapor and Indoor Air Contamination ... 10
2.5.6.1. Summary of Soil Vapor Data Collection ... 11
2.5.6.2. Summary of Indoor Air Data Collection ... 11
2.5.6.3. Comparison of Soil Vapor and Indoor Air with SCGs ... 12
2.5.7 On-Site Sub-Slab Insulation Contamination ... 12
2.5.7.1. Summary of Sub-Slab Insulation Data ... 13
2.5.7.2. Comparison of Sub-Slab Insulation with SCGs ... 13
2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS ... 13
2.6.1 Qualitative Human Health Exposure Assessment ... 14
2.6.2 Fish & Wildlife Remedial Impact Analysis ... 15
2.7 INTERIM REMEDIAL ACTION ... 16
2.7.1 Removal of Contaminated Insulation Material ... 16
2.7.2 Intra-Slab Vapor Extraction System ... 16
2.7.3 Sealing Penetrations ... 17
2.8 REMEDIAL ACTION OBJECTIVES ... 17
3.0 DESCRIPTION OF REMEDIAL ACTION PLAN ... 17
3.1 EVALUATION OF REMEDIAL ALTERNATIVES ... 17
3.2 SELECTION OF THE PREFERRED REMEDY ... 20

TABLE OF CONTENTS (Continued)

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS ... 23
4.0 REMEDIAL ACTION PROGRAM ... 25
4.1 GOVERNING DOCUMENTS ... 25
4.1.1 Site Specific Health & Safety Plan (HASP) ... 25
4.1.2 Quality Assurance Project Plan (QAPP) ... 25
4.1.3 Construction Quality Assurance Plan (CQAP) ... 25
4.1.4 Materials Management Plan ... 25
4.1.5 Storm-Water Pollution Prevention Plan (SWPPP) ... 25
4.1.6 Community Air Monitoring Plan (CAMP) ... 26
4.1.7 Contractor Submittals ... 26
4.1.8 Citizen Participation Plan ... 26
4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION ... 27
4.2.1 Project Organization ... 27
4.2.1.1. Remedial Engineer ... 27
4.2.1.2. Project Director ... 27
4.2.1.3. Project Manager ... 27
4.2.1.4. Field Team Leader ... 27
4.2.1.5. Project Quality Assurance/Quality Control Officer ... 28
4.2.2 Work Hours ... 28
4.2.3 Site Security ... 28
4.2.4 Traffic Control ... 28
4.2.5 Contingency Plan ... 28
4.2.6 Worker Training and Monitoring ... 28
4.2.7 Permits and Agency Approvals ... 29
4.2.8 Pre-Remediation Meeting with NYSDEC ... 29
4.2.9 Emergency Contact Information ... 29
4.2.10 Remedial Action Costs ... 29
4.3 SITE PREPARATION ... 29
4.3.1 Isolation Enclosure ... 29
4.3.2 Stabilized Construction Entrances ... 30
4.3.3 Utility Marker and Easements Layout ... 30
4.3.4 Sheeting and Shoring ... 30
4.3.5 Equipment and Material Staging ... 30
4.3.6 Decontamination Area ... 30
4.3.7 Site Fencing ... 31
4.3.8 Demobilization ... 31
4.4 REPORTING ... 31
4.4.1 Daily Reports ... 31
4.4.2 Monthly Reports ... 31
4.4.3 Other Reporting ... 32
4.4.4 Complaint Management Plan ... 32
4.4.5 Deviations from the Remedial Action Work Plan ... 32
5.0 REMEDIAL ACTION: MATERIAL REMOVAL FROM SITE ... 33
5.1 CLEANUP OBJECTIVES ... 33
5.2 REMEDIAL PERFORMANCE EVALUATION (POST EXCAVATION ENDPOINT SAMPLING) ... 34

TABLE OF CONTENTS (Continued)

5.2.1 Endpoint Sampling Frequency 34
5.2.2 Methodology 34
5.2.3 Reporting of Endpoint Data in FER 34
5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES 34
5.4 MATERIALS MANAGEMENT PLAN 35
5.4.1 Field Screening Methods 35
5.4.2 Stockpile Methods 36
5.4.3 Materials Excavation and Load Out 36
5.4.4 Materials Transport Off-Site 38
5.4.5 Materials Disposal Off-Site 38
5.4.6 Materials Reuse On-Site 40
5.4.7 Fluids Management 41
5.4.8 Demarcation 41
5.4.9 Backfill from Off-Site Sources 41
5.4.10 Storm-water Pollution Prevention 42
5.4.11 Contingency Plan 43
5.4.12 Community Air Monitoring Plan 43
5.4.13 Odor, Dust and Nuisance Control Plan 44
5.4.13.1. Odor Control Plan 44
5.4.13.2. Dust Control Plan 44
5.4.13.3. Other Nuisances 44
6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE 45
7.0 ENGINEERING CONTROLS: COMPOSITE COVER SYSTEM 45
7.1 COMPOSITE COVER SYSTEM 45
8.0 INSTITUTIONAL CONTROLS 45
9.0 FINAL ENGINEERING REPORT 46
9.1 CERTIFICATIONS 46
10.0 SCHEDULE 47

TABLES

Table 1a Soil Boring Installation Details

Table 1b Shallow Sub-Slab Core Installation Details

Table 1c Groundwater Monitoring Well Installation Details

Table 1d Soil Vapor Monitoring Point Installation Details

Table 2a Chemical Analysis of Sampled Media – Soil

Table 2b Chemical Analysis of Sampled Media – Groundwater

Table 2c Chemical Analysis of Sampled Media – Soil Vapor

Table 2d Chemical Analysis of Sampled Media – Indoor Air

Table 2e Chemical Analysis of Sampled Media – Sub-Slab Insulation Material

Table 3 Monitoring Well Summary and Groundwater Elevations

Table 4 Exceedances of SCGs in Soil Samples

TABLE OF CONTENTS (Continued)

Table 5 Exceedances of SCGs in Groundwater Samples
Table 6 Results of Soil Vapor Samples
Table 7a Results of Historical Indoor Air Samples
Table 7b Results of Indoor Air Samples
Table 8 VOC Concentrations in Sub-Slab Insulation Material Samples
Table 9 Proposed Backfill Analysis/Reuse Criteria
Table 10 Emergency Contact List
Table 11 Volume, Location, Depth and Concentration of PCE in Sub-Slab Insulation

FIGURES

Figure 1 Project Site Location
Figure 2 Site Plan
Figure 3 Land Use Map
Figure 4 Environmental Sampling Locations
Figure 5a Geologic Cross-Section Plan View
Figure 5b Geologic Cross-Section of Subsurface Conditions A-A'
Figure 5c Geologic Cross-Section of Subsurface Conditions B-B'
Figure 6a Shallow Monitor Well Groundwater Elevation Contours
Figure 6b Deep Monitor Well Groundwater Elevation Contours
Figure 7 Concentrations of PCE and Breakdown Products in Soil Samples
Figure 8a Groundwater Concentration Map (Shallow Aquifer)
Figure 8b Groundwater Concentration Map (Deep Aquifer)
Figure 9 Concentrations of PCE and Breakdown Products in Soil Vapor
Figure 10 2009 Core Samples – PCE Levels in Sub-Slab Insulation
Figure 11 Cross-Section of Insulated Floors
Figure 12 Areas of Sub-Slab Insulation
Figure 13 Existing Vapor Extraction System
Figure 14 Alphanumeric Grid Map
Figure 15 Sub-Slab Insulation Material Samples and PCE Concentrations
Figure 16 Truck Route Map

TABLE OF CONTENTS (Continued)

APPENDICES

Appendix A Metes and Bounds
Appendix B Sanborn Maps
Appendix C Health and Safety Plan
Appendix D Quality Assurance Project Plan
Appendix E Community Air Monitoring Plan
Appendix F Citizen Participation Plan
Appendix G Resumes of Key Personnel

CERTIFICATION

I, Michelle Lapin, certify that I am currently a NYS registered Professional Engineer as defined in 6 NYCRR Part 375 and that this Remedial Action Work Plan was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10). I have primary direct responsibility for implementation of the remedial program for the 2350 Fifth Avenue Site (NYSDEC Site No. 2-31-004).

I certify that the Site description presented in this RAWP is identical to the Site descriptions presented in the Consent Order executed July 22, 2011 for the Site.

I certify that this RAWP has a plan for transport and disposal of material removed from the property under this Plan, and that all transport and disposal will be performed in accordance with all local, State and Federal laws and requirements. All exported material will be taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that this RAWP has a plan for import of all soils and other material from off-Site and that all activities of this type will be in accordance with all local, State and Federal laws and requirements.

I certify that that this RAWP has a plan for nuisance control during the remediation and all invasive development work, including a dust and odor suppression plan and that such plan is sufficient to control dust and odors and will prevent nuisances from occurring.

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.

STATE OF NEW YORK
MICHELLE LAPIN
073934
LICENSED PROFESSIONAL ENGINEER

NYS Professional Engineer #073934-1	2/14/12 Date	Signature

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.

LIST OF ACRONYMS

AKRF – AKRF Engineering, P.C. or AKRF, Inc.

C&D – Construction and Demolition

CAMP – Community Air Monitoring Plan

CB – Community Board

CFR – Code of Federal Regulations

CPP – Citizen Participation Plan

CQAP – Construction Quality Assurance Plan

DCE – Dichloroethene

DER – Department of Environmental Remediation

DUSR – Data Usability Summary Report

ECs – Engineering controls

ECL – Environmental Conservation Law

ELAP – Environmental Laboratory Accreditation Program

EPA – United States Environmental Protection Agency

FER – Final Engineering Report

FWRIA – Fish and Wildlife Resources Impact Analysis

HASP – Health and Safety Plan

IRM – Interim Remedial Measure

ISCO – In-Situ Chemical Oxidation

LNAPL – Light Non Aqueous Phase Liquid

mg/kg – milligrams per kilogram

mg/l – milligrams per liter

NYCRR – New York Code of Rules and Regulations

NYSDEC – New York State Department of Environmental Conservation

NYSDOH – New York State Department of Health

OSHA – Occupational Safety and Health Administration

PCBs – Polychlorinated biphenyls

PCE - Tetrachloroethene

PID – Photoionization detector

PPB – Parts per billion

PPE – Personal protective equipment

PM_{10} – Particulate matter less than 10 micrometers in size

PPM – Parts per million

PRAP – Proposed Remedial Action Plan

PRDWP – Pre-Remedial Design Work Plan

PRP – Potentially Responsible Party

QAPP – Quality Assurance Project Plan

QA/QC – Quality Assurance/Quality Control

RAOs – Remedial Action Objectives

RAWP – Remedial Action Work Plan

RIR – Remedial Investigation Report

ROD – Record of Decision

SCGs – Standards, Criteria, and Guidance

SCOs – Soil Cleanup Objectives

SEQRA – State Environmental Quality Review Act

SMP – Site Management Plan

SSDS – Sub-Slab Depressurization System

SVE – Soil Vapor Extraction

SVOCs – Semivolatile organic compounds

SWPPP – Storm Water Pollution Prevention Plan

TCE – Trichloroethene

TICs – Tentatively identified compounds

µg/l – Micrograms per liter

$\mu g/m^3$ – Micrograms per cubic meter

µg/kg – Micrograms per kilogram

USGS – United States Geological Survey

UST – Underground storage tank

VOCs – Volatile organic compounds

EXECUTIVE SUMMARY

Site Description

The 2350 Fifth Avenue Corp. entered into Orders on Consent with the New York State Department of Environmental Conservation (NYSDEC) in July 1997, March 2001, and July 2011, to investigate and remediate a 1.58-acre property located at 2350 Fifth Avenue in the Borough of Manhattan, New York (the "Site"). The Site is categorized as a Class 2 site (Site ID #231004) by the NYSDEC under the Inactive Hazardous Waste Disposal Site Remedial Program. The remedial investigation and feasibility study have been completed and NYSDEC approved a remedy in the March 2011 Record of Decision (ROD). This Remedial Action Work Plan (RAWP) provides details for implementation of Phase 1 of the remedy.

The surrounding properties include the 369th Regiment Armory building to the north of the Site, an 1,800-square foot memorial park and Harlem River Drive to the east, Delano Village residential complex to the south, and a garage and paved parking area to the west.

Site History

The existing Site building was originally constructed as an ice cream factory in 1923 with additions around 1930 and 1950. The latter addition improved the structure with multiple layers of insulation (largely cork and styrofoam) installed beneath the floor slab and, in some cases, layered between multiple concrete floor slabs to accommodate the refrigeration needs of the ice cream factory. The building was then occupied by a commercial laundry from 1970 to 1994. The majority of tetrachloroethene (PCE) released at the Site was likely to have occurred between 1970 and 1984, when the commercial laundry operations used first-generation washing, drying, and extracting machines with PCE as a cleaning solvent.

Summary of the Remedial Investigation

Initial investigations and a preliminary site assessment were performed from 1996 to 2002 and the Remedial Investigation (RI) was performed from 2002 to 2009. The field-sampling program performed under the RI included work at the project Site, on the north-adjacent property, and along adjacent sidewalks. The RI consisted of the following:

- Installation and sampling of 40 soil borings;
- Installation and sampling of eight deep and four shallow groundwater monitoring wells and sampling of 12 previously installed wells;
- Installation and sampling of 20 soil vapor sampling points, three temporary sub-slab vapor sampling points, and sampling of four previously installed soil vapor points;
- Collection of four indoor air samples from the north-adjacent property;
- Collection of five on-Site indoor air samples on a quarterly basis since 1997, gradually increasing to 10 locations, which have been sampled since October 2008; and
- Advancement and sampling of 16 sub-slab insulation cores.

Geology and Hydrogeology

U.S. Geological survey studies show bedrock at an elevation of approximately -40 feet (approximately 50 feet below grade) at the eastern end of the Site and at elevation -20 feet (approximately 30 feet below grade) at the western end of the Site in reference to the National Geodetic Vertical Datum of 1929, an approximation of mean sea level. An 8 to 14 feet thick fill layer comprising silty sand intermixed with demolition debris (brick, concrete, and wood fragments), ash, and coal fragments was encountered beneath the Site and surrounding area. A layer of organic material (consisting or organic silt and clay and fibrous peat) was located beneath the fill, which varied from approximately 1 to 12 feet thick.

Groundwater in the vicinity of the Site is divided into two confined aquifers, separated by an organic clay layer acting as an aquitard/aquiclude between the shallow and deep aquifers. The measurements of groundwater elevation indicated that groundwater flow in the shallow aquifer was generally towards the northeast beneath the Site, and towards the south-southeast on the north-adjacent block. The groundwater flow in the deep aquifer was towards the east beneath the project Site with a more northeasterly flow observed beneath the north-adjacent block. The groundwater surface in the shallow aquifer was irregular and approximately 6 to 12 feet below sidewalk grade, with the exception of 3.7 feet below grade at one location (M-10s). In summary, it appears that local groundwater flow may be influenced by the presence of building foundations and utilities, and variations in the fill material.

<u>Contamination Conditions</u>

PCE and its decomposition products (trichloroethene, cis-1,2-dichloroethene, trans-1,2- dichloroethene, and vinyl chloride) were detected at elevated levels in soil, groundwater, and sub-slab insulation samples collected from the northwestern portion of the Site, which is believed to be the former PCE source area. The following samples collected during the RI from 2002 to 2009 had concentrations exceeding their respective Standards, Criteria and Guidance (SCGs):

- 14 of 128 soil samples collected had concentrations of PCE and its decomposition products above Part 375 Soil Cleanup Objectives (SCOs) for Unrestricted Use;
- Nine of 44 groundwater samples collected in two sampling events from 23 monitoring wells had concentrations of PCE and its decomposition products above Class GA (Drinking Water) Standards. One additional well was identified with light non-aqueous phase liquid (LNAPL) during both sampling events;
- Detection of PCE in 40 soil vapor samples (during multiple sampling events) collected from 24 soil vapor points and 3 sub-slab vapor points (note: quantitative SCGs have not been developed for soil vapor alone); and
- Three of 13 sub-slab insulation samples had a PCE concentration greater than 5 milligrams per kilogram (mg/kg).

Concentrations of PCE and breakdown products in soil, shallow aquifer groundwater, deep aquifer groundwater, soil vapor, and sub-slab insulation have been included on Figures 7, 8a, 8b, 9, and 10, respectively.

Qualitative Human Health Exposure Assessment

A qualitative human health exposure assessment evaluated potential exposure pathways for completeness between on-Site contaminated media and potential receptors on-Site and off-Site. New York City prohibits the use of groundwater in Manhattan for potable purposes; therefore, the exposure pathway *Groundwater ingestion by current or future building users or off-Site populations* is not complete.

Potential theoretically complete pathways included the *off-Site fish ingestion, surface water ingestion and dermal contact*, and *inhalation of vapors by off-Site populations*. The absence of detectable VOCs in groundwater samples from wells M-4s/d, M-5s/d, M-6s/d, M-8, and M-12d, which are all downgradient of the Site's source area, and detected indoor air concentrations below the NYSDOH air guidance values for tetrachloroethene (PCE) and trichloroethene (TCE) indicate, at most, an insignificant exposure through the potential theoretically complete pathways.

Three exposure pathways: *inhalation of vapors by building users; soil, groundwater and insulation material dermal contact, ingestion and inhalation by on-Site environmental workers during remediation;*

and *soil, groundwater, and insulation material dermal contact and ingestion by building users (following remediation) and off-Site populations*, were determined to be complete. Exposures via these pathways will be mitigated during construction by implementation of a Site-specific Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) and mitigated long-term by the planned remedial activities and implementation of a Site Management Plan (SMP).

Summary of the Remedy

Contamination in soil, groundwater, soil vapor, and sub-slab insulation material will be addressed in the remedial action outlined in the NYSDEC ROD. Phase 1 of the remediation consists of the partial removal of the sub-slab insulation material. Phase 2 of the remediation will consist of in-situ treatment of soil and groundwater, a soil vapor extraction (SVE) system, sub-slab depressurization system (SSDS), light non-aqueous phase liquid (LNAPL) recovery around monitoring well M-12s, and the establishment of institutional controls.

The remedial activities presented in this RAWP for Phase 1 include the partial removal of sub-slab insulation material. The remaining elements of the remedial approach specified in the ROD will be presented in a RAWP for Phase 2. This RAWP for Phase 1 of the remediation consists of excavation and disposal of PCE-contaminated sub-slab insulation material to the extent practicable beneath a maximum area of approximately 1,000-square feet located in the northwestern portion of the Site. The maximum extent of insulation removal to be performed under this RAWP for Phase 1 of the remediation is included as Figure 15. Excavation will be performed within an isolated enclosure equipped with exhaust fans capable of maintaining a negative air pressure during excavation activities for the protection of building users. Sub-slab insulation and building material in direct contact with insulation material will be disposed of off-Site as hazardous PCE-contaminated waste. As excavation proceeds, endpoint samples will be collected, a vapor barrier will be placed as a demarcation layer, the excavation will be backfilled with approved material, and surficial concrete replaced to restore the Site cover.

1.0 INTRODUCTION

The 2350 Fifth Avenue Corp. entered into Orders on Consent with the New York State Department of Environmental Conservation (NYSDEC) in July 1997, March 2001 and July 2011, to investigate and remediate a 1.58-acre property located at 2350 Fifth Avenue in the Borough of Manhattan, New York (the "Site"). The Site is categorized as a Class 2 site (Site ID #231004) by the NYSDEC under its Inactive Hazardous Waste Disposal Site Remedial Program.

The remedy described in this document is consistent with the procedures defined in DER-10 and complies with all applicable standards, criteria and guidance, as well as the following documents:

- Feasibility Study prepared by AKRF dated March 2011;
- Proposed Remedial Action Plan (PRAP) prepared by NYSDEC dated February 2011; and
- Record of Decision prepared by NYSDEC dated March 2011.

This Remedial Action Work Plan (RAWP) – Phase 1 summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between 2002 and 2009, as documented in the NYSDEC-approved Remedial Investigation Report prepared by AKRF dated June 2010. This RAWP provides details for implementation of Phase 1 of the remedy approved by NYSDEC in the ROD; Phase 1 consists of partial removal of the sub-slab insulation material. Following approval of this RAWP, a RAWP for Phase 2 will be submitted to NYSDEC to present a design for the remaining elements of the remedial approach, which includes in-situ treatment of soil and groundwater, a soil vapor extraction (SVE) system to address treatment of soil and create negative pressure below the slab, a sub-slab depressurization system (SSDS) to address soil vapor, light non-aqueous phase liquid (LNAPL) recovery around monitoring well M-12s, and the establishment of institutional controls. A formal Remedial Design document will not be prepared.

The remedy described in this document also complies with all applicable Federal, State and local laws, regulations and requirements. The NYSDEC and New York State Department of Health (NYSDOH) have determined that this Site does pose a significant threat to human health and the environment. The FS for this Site did not identify fish and wildlife resources and as such, a Fish and Wildlife Resources Impact Analysis (FWRIA) was not required by NYSDEC and was not performed for this project.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the County of New York, Borough of Manhattan, New York and is identified as Block 1739, Lot 33 and a portion of Lot 22 on the Borough of Manhattan, New York, New York Tax Map. A United States Geological Survey (USGS) topographical quadrangle map, 7.5-minute series of Central Park (Figure 1) shows the Site location. The Site is situated on an approximately 1.58-acre area bounded by West 142nd Street to the north, West 141st Street to the south, Fifth Avenue to the east, and a garage and paved parking area to the west (see Figure 2). The 1.58-acre property is fully described in Appendix A – Metes and Bounds, which includes a survey map.

1.2 CONTEMPLATED USE

The Remedial Action to be performed under the RAWP is intended to make the Site protective of human health and the environment consistent with reasonably foreseeable uses. No significant demolition and/or development are currently planned for the Site. For purposes of this RAWP, reasonable foreseeable future land uses are limited to those that would be permitted (without variances or waivers) under the Site's current zoning and approvals, which may include industrial, commercial and certain institutional uses, including a self-storage facility, art studio space, church and/or school. A proposal to allow a use requiring a change in zoning or variances/waivers may require review under NYC's City Environmental Quality Review (CEQR) requirements, a process in which NYSDEC would be able to address the appropriateness of such a use given any contamination and associated exposure pathways remaining following implementation of remediation.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site's adjacent properties include the 369th Regiment Armory building located across West 142nd Street to the north of the Site, an 1,800-square foot memorial park and Harlem River Drive located across Fifth Avenue to the east, Delano Village residential complex located across West 141st Street to the south, and a garage and paved parking area to the west. A land use map has been included as Figure 3.

A sensitive receptor survey was completed for the Site as part of the RI, including all sensitive receptors downgradient of the contamination identified at the subject property. Sensitive receptors are people or other organisms that may have a significantly increased sensitivity or exposure to contaminants by virtue of their age and health (e.g., schools, day care centers, hospitals, nursing homes), status (e.g., sensitive or endangered species), proximity to the contamination, dwelling construction (e.g., basement), or the facilities they use (e.g., water supply well). The location of sensitive receptors was identified in order to evaluate the potential impact of the contamination on public health and the environment.

There were no United States Geological Survey (USGS) groundwater site inventory wells (GWSI), NYSDEC public supply wells, NYSDEC well registration sites, beaches or wetlands identified within a ¼-mile radius of the Site. One NYSDOH well, 20 day care facilities, one school, one hospital, one adult nursing home, three churches and three parks were identified within a ¼-mile radius of the Site. However, none of the identified receptors are downgradient of the Site based on the presumed groundwater flow direction. The Harlem River is located approximately 200 to 300 feet east of the Site. Groundwater in New York County is not used as a source of potable water and no water supply wells are located in the area.

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the scope of work presented in the NYSDEC-approved Remedial Investigation (RI) Work Plan dated July 2007 and the Focused Remedial Investigation Work Plan in March 2001. The investigation activities under the July 2007 RIWP were conducted between December 11, 2007 and December 29, 2009. The Remedial Investigation was submitted to NYSDEC on June 18, 2010 and subsequently approved by NYSDEC. The discussion below summarizes the findings of the remedial investigation work performed since 2002; it does not include the findings of the preliminary site assessment (PSA) and prior investigations performed by others.

2.1 SUMMARY REMEDIAL INVESTIGATIONS PERFORMED

The field-sampling program consisted of the advancement and sampling of 40 soil borings, 30 sub-slab insulation cores, installation and sampling of eight deep and four shallow groundwater monitoring wells, three temporary sub-slab vapor monitoring points, and 20 soil vapor sampling points, including the re-installation of a damaged soil vapor sampling point (SG-5), at the Site, on the north-adjacent property, or along adjacent sidewalks. Twelve previously installed groundwater monitoring wells and four previously installed soil vapor points were also sampled.

2.1.1 Borings and Wells

Installation details of the soil borings, shallow sub-slab cores, groundwater monitoring wells, and soil vapor monitoring points are presented in Tables 1a through 1d.

2.1.2 Samples Collected

During the remedial investigation field activities, the following samples were collected from on-Site, on the north-adjacent property, and on adjacent sidewalks:

- 128 soil samples were collected from 40 soil borings and six monitoring well borings;
- 44 groundwater samples were collected from 23 groundwater monitoring wells over two sampling events;
- One light non-aqueous phase liquid (LNAPL) sample was collected from one groundwater monitoring well;
- Thirty-eight soil vapor samples, three sub-slab vapor samples, three duplicate soil vapor samples, and four QA/QC ambient air samples were collected from 24 permanent soil vapor monitoring points and three temporary sub-slab vapor points over two sampling events;
- Four indoor air samples from the north-adjacent property;
- Indoor air samples collected on-Site on a quarterly basis from 5 locations in 1997, which gradually increased to 10 locations, which have been sampled since October 2008;
- Thirteen sub-slab insulation samples were collected from 16 shallow sub-slab cores in 2009 (insulation was not encountered in the remaining 3 cores).

2.1.3 Chemical Analytical Work Performed

A table summarizing all samples collected and the corresponding sample matrices, analytes, and sample numbers is attached as Tables 2a through 2e. Soil, groundwater, soil vapor and insulation samples were analyzed at Alpha Analytical (Alpha) of Westboro, Massachusetts, or TestAmerica Connecticut Laboratories (TestAmerica) of Shelton, Connecticut. Both laboratories hold NYSDOH ELAP-certifications and performed all analyses following NYSDEC ASP Category B deliverables. Soil, groundwater, and sub-slab insulation samples were analyzed for VOCs by EPA Method 8260, soil vapor samples were analyzed for VOCs by EPA Method TO-15 plus tentatively identified compounds (TICs), and indoor air samples were analyzed for six chlorinated VOCs (PCE and its breakdown products: TCE, trans-1,2-dichloroethene (DCE), cis-1,2-DCE and vinyl chloride) by EPA Method TO-15. Selected groundwater samples collected in December 2009 were also analyzed for additional compounds for natural attenuation analysis as follows: sulfate by EPA Method 9056, nitrate by EPA Method 9056, sulfide by EPA Method SM 4500 S2 E, reduced iron by EPA Method 6010B, reduced manganese by EPA Method 6010B, methane by EPA Method RSK-175, and alkalinity by EPA Method 2320B.

2.1.4 Documentation

The Remedial Investigation findings are discussed throughout Section 2.0 of this RAWP. A map depicting the locations of all sampling performed at the Site under the various phases of Site investigation is included as Figure 4. Maps of sample locations and summary tables are provided for each media, as discussed in Section 2.5.

2.2 SIGNIFICANT THREAT

As a result of identified contamination, the NYSDEC listed the Site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York in July 1998. A Class 2 site is a Site where hazardous waste presents a significant threat to the public health or the environment and action is required. The remedial program is being performed by 2350 Fifth Avenue Corporation as a Potentially Responsible Party (PRP).

2.3 SITE HISTORY

The Site is located in the Harlem section of Manhattan. The current Site building was constructed in 1923 for use as an ice cream factory with construction additions in 1932 and 1950 as depicted on 1939 and 1951 Sanborn Maps. The latter addition improved the structure with multiple layers of insulation (largely cork and styrofoam) installed beneath the floor slab and, in some cases, layered between multiple concrete floor slabs to accommodate the refrigeration needs of the ice cream factory. In 1970, the Site use changed to a commercial laundry with an on-Site dry cleaning operation that utilized tetrachloroethene (PCE) as a cleaning solvent. The dry cleaning operation was located in the northwestern portion of the Site, west-adjacent of the 142nd Street loading dock. First generation dry cleaning equipment was used on-Site until 1984, when the equipment was upgraded to single units that performed the washing, extraction, and drying. The majority of PCE released was likely to have occurred between 1970 and 1984, when PCE was utilized on-Site, but with separate washing, extraction, and drying units.

2.3.1 Past Uses and Ownership

The existing building was originally constructed in 1923 as an ice cream factory by the Bordens Ice Cream Company as a three-story building. Building improvements included the construction of a two-story addition in 1932, and a one-story addition in 1950. Following its use as an ice cream factory, the building was occupied by a commercial laundry from 1970 to 1994. The laundry operated under a variety of names including Budge-Wood Service, Bluebird Laundry, and Swiss-American Laundry. The facility included a dry cleaning operation utilizing PCE as a cleaning solvent. In 1995-1996, most of the ground floor of the building, with the exception of the far western portion, was renovated for use as a New York City public school. This portion of the building was occupied as a school in the fall of 1997 and was later used by a church for services, offices, and classes. The church left the building in December 2004. The remainder of the building was renovated in 2001 for use as a self storage facility. An office was constructed next to the West 141st Street loading docks and storage units were constructed in the western portion of the ground floor and on the second and third floors. In February 2006, the self storage facility expanded into the former school portion of the building; however, this space was primarily used for art studios.

2.3.2 Previous Environmental Reports

Environmental investigation and reporting at the Site was initiated by Roy F. Weston, Inc., on behalf of the New York City School Construction Authority in October 1996. During this investigation, indoor air samples collected at multiple locations on the ground floor detected PCE at concentrations ranging from 17 to 71 parts per billion (ppb). Riverpoint, Inc. was then retained to investigate the source of PCE vapors within the Site building and conducted air testing activities from December 1996 through February

1997. Air Recon was then retained to perform on-Site air analyses using a portable gas chromatograph with electron capture detector, which determined that the highest PCE concentrations were present in and near floor drains and other penetrations of the floor slab. Levels of PCE in air that ranged from 13,000 to 22,000 ppb were measured within a penetration of the floor slab near the northern end of the Site building. AKRF then performed the Preliminary Site Assessment (PSA) and Remedial Investigation Phase I (RI PI) in January 1998 and February 2002, respectively. Twenty-three soil samples from six borings and ten groundwater samples from eight monitoring wells were collected and analyzed as part of the PSA and RI PI, and were discussed in the RIR and FS dated June 2010 and March 2011, respectively.

2.3.3 Sanborn Maps

Representative Sanborn Maps available for the Site were reviewed as part of the remedial investigation, prior to preparation of the RAWP. Historical Sanborn Maps for the Site and surrounding area are included in Appendix B. The Site and most of the surrounding area was vacant in 1893 until 1909, when the 142nd Street portion of the Site was used as a stone yard with the surrounding area constructed with stables. The current Site building was constructed in 1923 for use as an ice cream factory with construction additions in 1932 and 1950 depicted on 1939 and 1951 maps.

2.4 GEOLOGICAL CONDITIONS

Based on the U.S. Geological Survey Central Park Quadrangle map, the Site lies at an elevation of approximately 10 feet or less above the National Geodetic Vertical Datum of 1929, an approximation of mean sea level. U.S. Geological survey studies show bedrock at an elevation of approximately -40 feet in reference to the National Geodetic Vertical Datum of 1929 (approximately 50 feet below grade) at the eastern end of the Site and at elevation -20 feet (30 feet below grade) at the western end of the Site. The RI and previous investigations completed at the Site indicated that there is a fill layer beneath the Site and the surrounding area that varies in thickness from approximately 8 to 14 feet thick. The fill comprised silty sand intermixed with demolition debris (brick, concrete, and wood fragments), ash, and coal. A layer of organic material (consisting of organic silt and clay and fibrous peat) was located beneath the fill, which varied from approximately 1 to 12 feet thick. In general, the organic layer was thickest near Fifth Avenue and tapered to a foot or two thick towards the western end of the Site. Native brown silty sand was identified beneath the organic layer and bedrock was not encountered throughout the history of the investigations completed at the Site, which reached maximum depths of 35 feet below grade.

Geologic sections are shown in Figures 5a, 5b, and 5c. Figure 5a is a plan view depicting two cross-sections completed for the Site. Figure 5b depicts a cross-section of subsurface conditions along the northern portion of the Site, specifically along the sidewalk adjacent to West 142nd Street. The cross-section on Figure 5c bisects the Site in a north-south direction and depicts subsurface conditions of the Site and the area immediately north of the Site.

The Harlem River is located approximately 200 to 300 feet east of the Site. Groundwater in New York County is not used as a source of potable water and no water supply wells are located in the area. Groundwater levels were measured in all wells as part of the RI and were compared to well elevations surveyed by Montrose Surveying Company, LLP. Measured groundwater levels are included in Table 3 and groundwater flow maps are shown in Figures 6a for shallow wells and Figure 6b for deep wells at the Site. Groundwater in the vicinity of the Site is divided into two confined aquifers, separated by an organic clay layer of varying thickness acting as an aquitard/aquiclude between the shallow and deep aquifers. The installation of shallow/deep cluster wells make it possible to describe the horizontal component of flow in both aquifers, as well as the vertical flow component between the shallow and deep aquifers.

The groundwater surface in the shallow aquifer was irregular and approximately 6 to 12 feet below sidewalk grade, with the exception of 3.7 feet below grade at M-10s. The measurements of groundwater elevation indicated that there were multiple horizontal flow directions. The observations from shallow monitoring wells indicate that the Site groundwater flow in the shallow aquifer was generally north towards West 142nd Street and eastward along 142nd Street towards the Harlem River. Thus the flow direction in the shallow aquifer on the Site was generally towards the northeast, and the flow direction on the north-adjacent block was to the south-southeast. Groundwater flow in the deep aquifer exhibits a slight west to east gradient in the direction of the Harlem River; however, the flow pattern exhibits almost no gradient in the center of the Site. Groundwater in the deep aquifer on the north-adjacent block exhibits more of a northeasterly flow. The vertical flow component between the two aquifers was determined by the difference in head between wells screened within the shallow and deep aquifers. The groundwater elevations indicate that throughout the Site, groundwater is flowing upward from the deep aquifer to the shallow aquifer; however, the groundwater measurements collected from the cluster wells along West 143rd Street, north of the Site, indicate a downward vertical flow component. In summary, it appears that local groundwater flow may be influenced by the presence of building foundations and utilities, and variations in the fill material.

2.5 CONTAMINATION CONDITIONS

Multiple investigations have been performed to identify and evaluate contamination conditions on-Site, around the source area, and off-Site. The source area is located in the northwestern portion of the Site. A summary of the investigations performed and contamination conditions that were identified is presented below.

2.5.1 Conceptual Model of Site Contamination

PCE and decomposition products were detected at elevated levels in soil, groundwater, and sub-slab insulation samples collected from the northwestern portion of the Site, which is believed to be the former PCE source area. Over 85 percent of soil samples collected from October 2007 to December 2009 contained less than 1 milligrams per kilogram (mg/kg) of PCE with only seven samples near the source area containing PCE levels exceeding Part 375 SCOs for Unrestricted Use.

The highest chlorinated VOC levels detected in groundwater samples were present in M-11s, located on the West 142nd Street sidewalk, just north of the source area. No PCE or decomposition products were detected from M-11d, the deep well at this location. PCE and decomposition products were detected in an additional 6 of 24 groundwater monitoring wells in 2007 and 2009.

PCE was detected in all the soil vapor samples collected from 2007 to 2009, with the highest level, 332,000 micrograms per cubic meter (μg/m^3), at SG-7, located on the West 142nd Street sidewalk near the old loading dock entrance. Levels of PCE in other soil vapor samples were much lower, and decrease with distance from the source area.

Insulation material was primarily brown cork, 3 to 12 inches thick, at depths ranging from 6 inches to 3.5 feet below grade. PCE concentrations in the insulation ranged from 900 micrograms per kilogram (μg/kg) to 560,000 μg/kg. Levels of PCE greater than 5,000 μg/kg were situated in the former cafeteria (Room 122) and north-adjacent hallway with lesser concentrations present beneath the kitchen, and in the insulation material east of the cafeteria, below Room 141.

2.5.2 Description of Areas of Concern

The following areas of concern were identified for this Site:

- One 5,000-gallon UST that was closed-removed and one 20,000-gallon UST that was closed-in-place. Both USTs were listed under PBS #2-600447 with Budge-Wood Laundry Service Inc. as the listed site name. The 20,000-gallon closed-in-place UST that reportedly held #6 fuel oil is currently buried underneath the West 142nd Street loading dock, immediately east of the former dry cleaning area. The 5,000-gallon closed-removed tank reportedly held diesel and was located beneath the north side of the building, east of the loading dock. The 5,000-gallon closed-removed tank may be contributing to the LNAPL observed in M-12s, along the northeastern Site boundary.
- Soil contamination at the Site is primarily PCE and breakdown products (trichloroethene, cis-1,2-dichloroethene, trans-1,2- dichloroethene, and vinyl chloride). Of the 128 soil samples collected as part of the RI, 14 samples contained one or more compounds of concern (PCE and breakdown products) at a concentration greater than the 6NYCRR Part 375 Soil Cleanup Objectives for Unrestricted Use. VOCs exceeding SCOs for Unrestricted Use, although confined to the northwestern portion of the Site, were encountered in discrete areas (both horizontally and vertically), separated by samples with concentrations below their respective SCO. Depths of the samples with VOCs above SCOs for Unrestricted Use were also in horizontally inconsistent, isolated areas, ranging from 4 to 18 feet below grade.
- Groundwater samples collected in the two most recent sampling events from 23 groundwater monitoring wells contained PCE and its decomposition products at levels that exceeded Class GA (Drinking Water) Ambient Water Quality Standards and Guidelines in 6 NYCRR Section 703.5 in nine of 44 samples. The highest levels were reported from the sample from well M-11s, located on the West 142nd Street sidewalk, just north of the source area. No chlorinated VOCs (i.e., PCE and its decomposition products) were detected in 18 of 23 wells sampled in 2009. One additional monitoring well was identified with light non-aqueous phase liquid (LNAPL) during both sampling events.
- Soil vapor samples collected during the RI all contained PCE, except for sub-slab vapor point SG-34. The highest level of PCE, 332,000 $\mu g/m^3$, was detected in a sample at SG-7, located on the West 142nd Street sidewalk near the old loading dock. This is also the area where the highest soil and groundwater contaminant levels were found. Levels of PCE in other soil vapor samples were much lower, and decreased with distance from the source area.
- After IRM implementation in 1997 (see Section 2.7), elevated concentrations of PCE and TCE were sporadically detected in quarterly indoor air samples collected from the northern part of the building. Concentrations greater than the NYSDOH air guideline values are not routinely identified, and are most often detected in the old boiler room and in Locker 1454, both of which are closed, unventilated, unoccupied spaces.

- Of 16 cores, four were found to have no insulation material and three of 12 remaining cores had sub-slab insulation material with a PCE concentration greater than 5 mg/kg. Sub-slab insulation material contaminated with PCE was identified in the northwestern portion of the Site. The portion of the Site with elevated concentrations was used for the dry cleaning operation from 1970 to 1994, and was near the area that housed washing, extracting, and drying machines. The majority of PCE released at the Site is believed to have occurred in this area from 1970 to 1984, when first generation washing and drying machines were used.

Following field investigations of the subsurface soil, groundwater, insulation and soil vapor, and indoor air, it was evident that the majority of samples from the various media with elevated concentrations were mainly localized in the source area in the northwestern portion of the building.

2.5.3 Identification of Standards, Criteria and Guidance

The applicable Standards, Criteria and Guidance (SCGs) for specific media at the Site were established in the FS and PRAP, and confirmed by NYSDEC in Section 5.1.1 of the March 2011 ROD. The SCGs serve as the target cleanup objectives for contaminants at the Site.

2.5.4 Soil/Fill Contamination

Seventeen of the 128 soil samples collected during the RI had one or more VOC at a concentration greater than the SCGs for soil. Fourteen of the 128 soil samples had a concentration of PCE and/or its decomposition products at a concentration greater than the SCO for Unrestricted Use. VOCs exceeding the SCGs, although confined to the northwestern portion of the Site, were encountered in discrete areas (both horizontally and vertically), separated by samples with VOC concentrations below the SCGs. Laboratory results for soil samples collected at the Site are discussed below.

2.5.4.1. Summary of Soil/Fill Data

Of the 17 soil samples collected during the RI with one or more VOCs at a concentration greater than SCO for Unrestricted Use, 14 samples contained tetrachloroethene (PCE) or associated PCE decomposition products at concentrations above the SCO. The remaining three soil samples contained petroleum-related hydrocarbons above the 6 NYCRR Part 376 SCOs for Unrestricted Use. The Protection of Groundwater and Unrestricted Use SCOs are identical for PCE and its decomposition products. PCE was detected in soil samples at concentrations that ranged from 6.3 mg/kg to 920 mg/kg with breakdown products cis-1,2-DCE, and vinyl chloride detected at 0.3 to 81 mg/kg, and 0.021 to 31 mg/kg, respectively. TCE was detected in one sample above the RAO at 44 mg/kg. Petroleum-related hydrocarbons detected in soil samples were 2-butanone at 0.12 and 0.13 mg/kg, and n-propylbenzene at 5.9 mg/kg.

2.5.4.2. Comparison of Soil/Fill with SCGs

Reported concentrations exceeding Part 375 SCOs for Unrestricted Use were present in soil borings SB-8, 10, 15, 21, 23, 30, 33, 34, 35, 37 and 39, and in soil borings advanced during the installment of groundwater monitoring wells M-2, M-3, and M-11d. The recorded depths to samples with concentrations exceeding SCOs ranged from 0.5 to 19 feet below grade with an average depth to contamination of 10.5 feet below grade. Of the 23 soil samples with compounds detected above the SCOs, 20 samples contained PCE or its breakdown products; the remaining three soil samples exceeded SCOs for petroleum-related hydrocarbons. Over 85 percent of soil samples collected from October 2007 to December 2009 had PCE levels less than 1 mg/kg.

All soil samples with concentrations exceeding SCOs, with the exception of SB-30, were situated in the northwestern portion of the Site, which was formerly used for dry cleaning operations when the building operated as a commercial laundry. The soil sample collected from SB-30 was situated in the northern portion of the Site, east of the former dry cleaning area, and only contained n-propylbenzene at concentrations exceeding the SCO. A possible source of the hydrocarbon contamination was a former diesel tank reportedly located under the north side of the building. Table 4 shows exceedances from Unrestricted Use SCOs for all soil at the Site. Figure 7 is a spider map that shows the locations and summarizes exceedances from Unrestricted Use SCOs for soil.

2.5.5 On-Site and Off-Site Groundwater Contamination

A network of 24 on-Site and off-Site groundwater monitoring wells with screened intervals positioned within the shallow or deep aquifers have been installed in several investigation phases since 1998. As evident in Table 1c, six monitoring wells were installed in 1998, two monitoring wells were installed in 2002, four monitoring wells were installed in 2006, nine monitoring wells were installed in 2007 and the remaining two wells were installed in December 2009. The current groundwater monitoring network includes wells located within the building footprint, on adjacent sidewalks, within the north-adjacent property, and along sidewalks north-adjacent to the north-adjacent property. Groundwater sample results were compared to Class GA (Drinking Water) Ambient Water Quality Standards and Guidance in 6 NYCRR Section 703.5 as the applicable SCG, presented in Table 5. PCE and its decomposition products were detected in groundwater samples at concentrations above the SCGs in seven of 24 monitoring wells since 1998.

2.5.5.1. Summary of Groundwater Data

In the most recent groundwater sampling event, December 2009, chlorinated VOCs were detected at levels exceeding the SCG in samples from five of the 24 monitoring wells (M-1, 3d, 7, 11s, and 14d), and included exceedances for the compounds PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride. The detected concentrations exceeding SCGs ranged from 7.9 to 90 µg/l for PCE, 6.3 to 1,800 µg/l for cis-1,2-DCE, and 12 to 580 µg/l for vinyl chloride. TCE levels exceeded the SCG only in M-11s at a concentration of 79 µg/l and the level of trans-1,2-DCE exceeded the SCG only in M-7 at 7.9 µg/l. No chlorinated VOCs were detected in the remaining 19 wells sampled in 2009. Approximately 1 inch of light non-aqueous phase liquid (LNAPL) was measured in monitoring well M-12s from 2007 to 2009. The LNAPL from M-12s was sampled in December 2009 for petroleum fingerprint analysis. The concentrations of chlorinated VOCs have decreased significantly from 2002 to 2009, as shown on Figures 8a and 8b, for shallow and deep groundwater wells, respectively.

The subsurface capacity for natural biodegradation of chlorinated solvents was evaluated near the source area by sampling for natural attenuation indicator parameters (byproducts of bacterial dehalogenation of chlorinated solvents). Based on these results, the subsurface environment is generally reducing at all natural attenuation sampling locations (M-1, M-2, M-3, M-3d, M-7, M-11s, M-11d, M-12d, M-14s, and M-14d). The subsurface environment is highly reducing [Oxidation Reduction Potential (ORP) < -80 millivolts (mV)] in all of these locations except for M-3 and M-12d, where moderately reducing conditions are present. Elevated levels of the natural attenuation indicator parameters Mn2+, Fe2+, and methane were detected in eight of the ten samples collected and indicated the presence of iron-reducing bacteria in the vicinity of M-3, and a more methanogenic presence towards the north, in the vicinity of M-11. The biodegradation of chlorinated solvents is most efficient through methanogenic bacteria.

Concentrations of PCE and decomposition products over a one-year period were reduced by an order of magnitude or more in groundwater at monitoring wells M-2, M-3, M-3d, and M-7. The presence of PCE daughter compounds, decreased concentrations of PCE, elevated concentrations of Fe2+, and highly reducing ORP are indications of active microbial breakdown of PCE. The LNAPL detected in M-12s during the 2007 and 2009 groundwater sampling events was sampled in December 2009, and analyzed by EPA Method 8015B for petroleum fingerprint analysis. The LNAPL isolated from M-12s was reported by the laboratory to be consistent with motor oil.

2.5.5.2. Comparison of Groundwater with SCGs

Nine of 44 groundwater samples collected in two sampling events in 2007 and 2009 from 23 monitoring wells had concentrations of PCE and its decomposition products above Class GA (Drinking Water) Standards. The highest chlorinated VOC levels were present in M-11s, located on the West 142nd Street sidewalk, just north of the source area. The primary contaminants at this location were cis-1,2-DCE and vinyl chloride. No PCE or decomposition products were detected in the sample from M-11d, the deep well at this location. PCE and decomposition products were detected at M-1, M-2, M-3, and M-3d, near the original dry cleaning area, with PCE concentrations exceeding the SCG in M-1, M-3, and M-3d. PCE decomposition compounds cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride were detected in M-7, across the street from M-11 on the north sidewalk of West 142nd Street, at levels that exceeded the SCG. No VOCs were detected in wells M-4, 4d, 5, 5d, 6, 6d, 8, 9s, 9d, 10s, 10d, 11d, 12d, 13s, 13d, and 14s during the two most recent sampling events. Chlorinated VOC concentrations in groundwater samples from monitoring wells M-2, 3, 3d, and 7, all within the presumed source area, have decreased significantly from 2007 to 2009.

A table that indicates exceedances from GA groundwater standards in monitor wells prior to the remedy is shown in Table 5. Spider maps that indicate the locations and concentrations exceeding Class GA groundwater standards prior to the remedy are shown in Figures 8a and 8b.

2.5.6 On-Site and Off-Site Soil Vapor and Indoor Air Contamination

From 2006 to 2009, 38 soil vapor samples, three sub-slab vapor samples, three duplicate soil vapor samples, and four QA/QC ambient air samples were collected from 24 permanent soil vapor monitoring points and three temporary sub-slab vapor points located on-Site, on adjacent sidewalks, and on the north-adjacent property. All samples collected from soil vapor probes in and around the Site during the RI contained VOCs, primarily PCE, TCE, and cis-1,2-DCE. PCE was detected in each of the soil vapor samples analyzed ranging from 0.66 $\mu g/m^3$ to 332,000 $\mu g/m^3$, with the highest concentration observed in SG-7. TCE was detected in ten of the soil vapor samples (SG-1, SG-4, SG-6, SG-7, SG-8, SG-9, SG-10, SG-13, SG-22, and SG-24) at concentrations ranging from 85 $\mu g/m^3$ in SG-10 to 370,000 $\mu g/m^3$ in SG-6. Higher concentrations were detected in soil vapor samples collected from the northwestern portion of the Site in the presumed source area. Soil vapor sample analytical results are included in Table 6 and PCE concentrations in soil vapor are shown on Figure 9.

Indoor air samples have been collected at the Site from five locations since 1997, which gradually increased to 10 locations that have been sampled since October 2008 (plus a duplicate sample collected from the boiler room/basement). Indoor air sample analytical results are included in Tables 7a and 7b and indoor air sample locations are shown on Figure 9.

2.5.6.1. Summary of Soil Vapor Data Collection

For the installation of soil vapor wells, a stainless steel probe, consisting of a drive point and 6-inch internal perforated sampling point with a retractable tip was advanced to an approximate depth of 6 feet below grade (18 to 27 inches below grade in SG-32 to SG-34). The probe was connected to Teflon sampling tubing that was extended from the sampling port through a drive casing to above grade. The drive casing was removed and the boring's annulus was filled with clean sand filter pack to prevent intake clogging. The remaining annulus was filled with hydrated bentonite chips to grade to provide a seal and ensure the collection of a representative sample and prevent short-circuiting via the surface. The permanent soil vapor wells were completed with a flush-mount road box. Following sample collection at the three temporary sub-slab vapor points, the sampling point and tubing were removed from the borehole and disposed of off-Site; the penetration through the floor was sealed with cement grout.

Soil vapor samples were collected at each location according to NYSDOH guidelines. Prior to the collection of air samples in the Summa canisters, three volumes of air were evacuated at each vapor probe into a Tedlar bag using a peristaltic pump. Prior to the evacuation, the sampling point was covered with a 3-foot by 3-foot shroud of plastic sheeting. A hole was cut in the center of the shroud and the Teflon sampling tubing was pulled through the shroud. A tube from a helium tank was placed under the shroud, the edges of the shroud were sealed, and the helium tank was opened. After the Tedlar bag was filled, methane, helium, and PID meters were used to monitor its contents. Helium was used as a trace gas for the detection of any leaks in the bentonite seal of the well. Since helium was not detected in any of the Tedlar bags at levels above the NYSDOH threshold value of 10%, no additional measures were needed to ensure a proper seal. Elevated PID readings were noted in soil vapor wells SG-7, SG-12, SG-14, and SG-22 at concentrations of 9.3 parts per million (ppm), 3.2 ppm, 2.9 ppm, and 16.1 ppm, respectively.

All canisters were prepared by the laboratory with negative pressure and set to collect 6 liters of air in an approximate 10-minute time period for outdoor sample locations, or 6 liters of air in an approximate 8-hour sampling period for indoor sample locations. Two types of dedicated air regulators were provided to accommodate the 8-hour and 10-minute sampling intervals. The vapor probes were sampled and analyzed for VOCs by EPA Method TO-15 plus TICs. The duplicate samples were taken simultaneously with the standard sample at vapor probes SG-14 (collected in 2008) and SG-12 (collected in 2009), using a "T-connection" device provided by the laboratory.

2.5.6.2. Summary of Indoor Air Data Collection

Indoor air samples were collected over an eight-hour period at the ten indoor air sampling locations shown on Figure 9. One duplicate sample was collected for quality assurance purposes. The air in the vicinity of each sample was periodically field screened for VOCs using a PID. The air samples were analyzed for PCE and its breakdown products.

2.5.6.3. Comparison of Soil Vapor and Indoor Air with SCGs

For soil vapor beneath the floor slab of buildings, the NYSDOH has finalized two guidance matrices within the NYSDOH document entitled *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006). Guidance is derived from Matrix 1 for TCE results and Matrix 2 for PCE results. These matrices use the comparison of sub-slab soil vapor concentrations with indoor air concentrations of PCE and TCE to provide actions to be taken; soil vapor samples collected form sidewalk locations were not applicable to these matrices.

Of the 41 soil vapor and sub-slab vapor samples analyzed from 2006 to 2009, PCE was detected in 10 samples above the maximum sub-slab vapor concentration listed in Matrix 2 for PCE of 1,000 $\mu g/m^3$; three of these samples (SG-6, SG-8, and SG-13) were located within the Site building. TCE was detected in two samples (SG-6 and SG-7) above the maximum sub-slab vapor concentration listed in Matrix 1 for TCE of 250 $\mu g/m^3$. Of the 14 soil vapor points sampled more that once from 2006 to 2009, seven locations (SG-2, SG-4, SG-7, SG-8, SG-11, SG-12, and SG-13) showed a decrease in PCE concentrations and the remaining seven locations (SG-1, SG-3, SG-5, SG-6, SG-9, SG-10, and SG-14 showed an increase in PCE concentrations. An increase in TCE from 2006 to 2009 was observed in SG-6 (located in the storage locker area) and a decrease was observed in SG-7 (located in the West 142nd Street sidewalk). A table of soil vapor data collected between August 2006 and December 2009 is shown in Table 6. A spider map that indicates the locations and concentrations of PCE and its breakdown products in soil vapor between August 2006 and December 2009 is shown in Figure 9.

After IRM implementation in 1997 (see Section 2.7), elevated concentrations of PCE and TCE were sporadically detected in quarterly indoor air samples collected from the northern part of the building. Concentrations greater than the NYSDOH air guideline values are not consistently identified, and are most often detected in the old boiler room and in Locker 1454, both of which are closed, unventilated, unoccupied spaces. Indoor air sample results for samples collected between August 1997 and April 2011 is provided as Tables 7a and 7b.

Using the data collected from 2006 to 2009, soil vapor and indoor air concentrations of both PCE and TCE below the "No Further Action" guidance concentrations in Matrices 1 and 2 (shown in Section 2.5.3.3) were present in 5 of 11 sampling locations evaluated. Additional indoor air samples were collected, but cannot be applied to NYSDOH Matrices 1 and 2 due to the lack of a nearby corresponding soil vapor sample. However, based on isoconcentration lines of soil vapor concentrations (as shown on Figure 15 of the RIR), about 55% of the Site building would be within the NYSDOH "Mitigate" action, 25% would be within the "Monitor" action, and the remaining 20% would be "No Further Action".

2.5.7 On-Site Sub-Slab Insulation Contamination

Core samples of sub-slab insulation were collected and analyzed in previous investigations with additional analyses in 2009 as part of the RI performed by AKRF.

2.5.7.1. Summary of Sub-Slab Insulation Data

PCE was detected in all 13 sub-slab insulation samples collected in 2009 (from 12 core samples and one soil boring) and in all 10 sub-slab insulation samples collected in 1997. The remaining 20 of the 30 cores advanced in 1997 and four of 16 cores advanced in 2009 did not encounter sub-slab insulation. The highest PCE levels from the 1997 samples were suspected to be underreported, due to the heat and disturbance associated with the use of a core drill as opposed to a geoprobe sampler for collection of the cores. Similarly, PCE levels detected below the strata with highest PCE concentrations were suspected to be overreported due to inadequate decontamination of the corer between depth intervals, which may have caused smearing of contaminated material deeper into the strata. The 1997 data was primarily useful at providing a qualitative delineation of the horizontal extent of contamination in the sub-slab insulation. The December 2009 sub-slab insulation samples contained PCE concentrations that ranged from 19 µg/kg to 560,000 µg/kg, and TCE concentrations that ranged from 11 µg/kg to 2,300 µg/kg. Additional PCE breakdown products were not detected in any of the 2009 sub-slab insulation samples except C-44(2'-3'), which contained 29 µg/kg of cis-1,2-DCE. To better understand the concentrations of PCE within the insulation material reported in 2009, two insulation samples [C-40(1.5'-2.5') and C-44(2'-3')] were selected for bulk density analysis. Bulk densities were reported at 0.09 grams per cubic centimeter (g/cm^3) in C-40 and 0.46 g/cm^3 in C-44.

2.5.7.2. Comparison of Sub-Slab Insulation with SCGs

PCE was detected in all 13 sub-slab insulation samples collected in December 2009, and at a concentration greater than 5,000 µg/kg in three samples. PCE concentrations in insulation greater than the SCG ranged from 16,000 µg/kg to 560,000 µg/kg and were situated in the northwestern portion of the building. The remaining ten samples contained PCE at concentrations that ranged from 19 µg/kg to 4,700 µg/kg, below the SCG of 5,000 µg/kg. TCE was detected in only three samples at concentrations of 11, 59, and 2,300 µg/kg, with the highest concentration detected in C-43(1'-2'). Only one additional breakdown product of PCE was detected in any of the samples; cis-1,2-DCE was detected in C-44(2'-3') at 29 µg/kg. A Site plan with insulation sampling locations and corresponding PCE concentrations is provided as Figure 10. Analytical results for VOCs in sub-slab insulation material are presented as Table 8.

2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

Potentially exposed populations and potential exposure pathways for both on-Site and off-Site contamination are evaluated in this section. Exposure can only occur if there is a complete pathway from a specific chemical of concern contained in one of the media to a receptor. The mere presence of a chemical is not in itself evidence that a complete exposure pathway will exist.

2.6.1 Qualitative Human Health Exposure Assessment

Based on results of remedial investigations performed at the Site, the contaminated media consist of soil and groundwater, soil vapor and insulation material. Exposure could involve accidental ingestion of VOC-contaminated media, inhalation of VOC-containing air, ingestion of soil particulates that contain or have VOCs on their surface, or dermal contact with soil, groundwater, vapors, or insulation material. Although contamination is present in indoor air, since it did not originate there, but rather migrated from the various subsurface media, for the purposes of the exposure assessment, indoor air is not considered a separate medium. Potential receptors include:

- On-Site and off-Site building users including maintenance/construction workers following remediation;
- On-Site specialized workers and building users during remediation;
- Off-Site residents and other nearby sensitive receptors; and
- Off-Site surface water users (including both human users and aquatic organisms).

Six potential exposure pathways included in NYSDECs *DER-10 Technical Guidance for Site Investigation and Remediation* (May 2010), Appendix 3B – *NYSDOH Qualitative Human Health Exposure Assessment* were assessed for completeness between on-Site contaminated media and the potential receptors listed above. Each pathway was evaluated and categorized as an incomplete, a potentially complete but insignificant, or a complete pathway. The six exposure pathways assessed were:

- Groundwater ingestion by current or future building users or off-Site populations;
- Off-Site fish ingestions, surface water ingestion, and dermal contact;
- Inhalation of vapors by off-Site populations;
- Inhalation of vapors by building users;
- Soil, groundwater and insulation material dermal contact, ingestion and inhalation by on-Site environmental workers during remediation; and
- Soil, groundwater and insulation material dermal contact and ingestion by building users (following remediation) and off-Site populations.

New York City prohibits the use of groundwater in Manhattan for potable purposes; therefore, the exposure pathway *Groundwater ingestion by current or future building users or off-Site populations* is not complete for any current or future on-Site or off-Site receptors. The *Off-Site fish ingestion, surface water ingestion and dermal contact* exposure pathway was potentially theoretically complete, but was considered to result in, at most, an insignificant exposure due to the absence of detectable VOCs in any groundwater wells downgradient of the Site's source area (i.e., towards the Harlem River) and due to the restrictions placed on acceptable river usage. The Harlem River (the river) is located 200 to 300 feet east of the Site and is classified by New York State as a Class I saline waterbody, suitable for secondary contact recreation, fishing, fish propagation and survival, but not suitable for swimming. In addition, limitations are in place with respect to the recommended amounts and frequency of fish consumption from the river as stated in the New York State Department of Health (NYSDOH) *2009-2010 Health Advisories: Chemicals in Sportfish and Game*; however, these advisories are not based on VOC contamination. Contaminated groundwater might eventually discharge to the river, but it would be quickly diluted by the hugely greater volume and flow of the river, which is actually a tidal strait connecting the Hudson River, East River and Long Island Sound. Therefore, the potential for any significant VOC contamination to be migrating from the Site to the river (and resulting human or ecological exposure) is negligible.

Off-Site soil vapor and indoor air was evaluated in the November-December 2009 vapor intrusion assessment, consisting of collection and laboratory analysis of sub-slab soil vapor and corresponding indoor air samples at three locations conducted at the north-adjacent armory property, across 142nd Street. One additional indoor air sample was collected to ascertain background indoor air concentrations within the property. It was noted that other potential sources of VOCs were present in the armory as evidenced by oil stains, storage cabinets marked "flammable," wet paint, various cleaning solutions, etc. Laboratory results indicated that PCE breakdown products were not detected in any samples, though PCE was detected in all four indoor air samples between 0.97 and 1.5 $\mu g/m^3$ (well below the 100 $\mu g/m^3$ NYSDOH air guidance value) and in two of the three sub-slab vapor samples at concentrations of 1.5 and 31 $\mu g/m^3$. The indoor air concentrations of PCE detected off-Site were also below the 2.5 $\mu g/m^3$ upper fence value for background concentrations of VOCs in air of fuel oil-heated homes. The NYSDOH guidance associated with these levels is "no further action," categorizing *Inhalation of vapors by off-Site populations* as potentially theoretically complete, but was considered to result in, at most, an insignificant exposure.

The remaining three exposure pathways: *inhalation of vapors by building users; soil, groundwater and insulation material dermal contact, ingestion and inhalation by on-Site environmental workers during remediation;* and *soil, groundwater and insulation material dermal contact and ingestion by building users (following remediation) and off-Site populations*, were determined to be complete and are accounted for in the developed remedial alternatives. VOCs detected in the subsurface media, and directly measured in the building's indoor air, indicate that inhalation, dermal, and ingestion pathways affecting building users and environmental workers during remediation are complete. The remediation involves excavation of sub-slab insulation in a specifically defined area that could result in exposure; however, this will be mitigated by implementation of a Site-specific Health and Safety Plan (HASP) including both work zone and perimeter air monitoring addressing both potential worker and other building user exposure and a Community Air Monitoring Plan (CAMP) addressing the wider community. Direct contact with these materials does not currently occur and would not be expected to occur on-Site following remediation, through the implementation of institutional controls (specified in a Site Management Plan or SMP) to address contaminated media to remain following implementation of the remedy. These institutional controls will establish mandatory procedures governing any subgrade work (e.g., utility repairs) to ensure the safety of workers and others. The population with the greatest likelihood for exposure is be utility workers. Such workers have specialized training, and follow internal corporate procedures for handling contaminated materials encountered.

2.6.2 Fish & Wildlife Remedial Impact Analysis

The potential for any significant VOC contamination to be migrating from the Site to the Harlem River (and resulting human or ecological exposure) is negligible, as stated in the Qualitative Human Health Exposure Assessment. As such, a Fish and Wildlife

Resources Impact Analysis (FWRIA) was not required by NYSDEC and was not performed for this project.

2.7 INTERIM REMEDIAL ACTION

Initial interim remedial measures (IRM), performed in 1997, were aimed at preventing impacts to the air quality within the building. The IRM consisted of three measures: removal of contaminated insulation material; installation of a shallow soil vapor extraction system; and sealing penetrations through the slab. The implementation of the IRM was described in Interim Remedial Measures Report, Intermediate School 120, 2350 Fifth Avenue, New York, New York by AKRF Engineering P.C. dated September 1997.

2.7.1 Removal of Contaminated Insulation Material

Excavation of contaminated insulation material below the slab at the western portion of the building (currently used for self-storage lockers) resulted in the removal of 12 20-cubic yard dumpster loads of concrete debris and 21 30-yard dumpster loads of contaminated insulation. The contaminated insulation material was assumed to exceed the land disposal restriction of 6 ppm (mg/kg) PCE and, as such, the material was transported by Hazardous Transport Group Inc. (EPA ID #NJD000692061) to Michigan Disposal Inc. of Belleville, Michigan (EPA ID #MID000724831). Typical cross sections of remaining insulated floors in the planned removal area are provided on Figure 11, and areas where sub-slab insulation material was removed, or still exists, is provided on Figure 12.

2.7.2 Intra-Slab Vapor Extraction System

Initial renovation of the building for use as a school included pouring a new concrete floor slab over approximately 6 inches of sand and gravel, placed over the existing floor slab. Installation of a shallow vapor extraction system in the 6-inch thick layer between the old floor slab and the post-renovation floor slab was intended to remove PCE remaining in the insulation beneath the old floor slab, and by maintaining a negative pressure in the space beneath the floor, prevent infiltration of vapors into the building. Perforated piping was installed beneath portions of the floor by cutting trenches through both the new and old floor slabs, backfilling around the piping with clean sand and gravel material, and then restoring the upper floor slab. The piping provided a direct connection through which vapors from the insulation under the old slab could diffuse upwards into the space between the old and new slabs.

A packaged vapor extraction unit consisting of a regenerative blower, inlet filter, moisture separator, and controls was installed on the former loading dock on the 142nd Street side of the building with the system exhaust connected to two granular activated carbon (GAC) units in series (Carbtrol G-2), each containing 170 pounds of GAC for treatment of the effluent prior to discharge into the atmosphere. A pilot test was then performed using this system and resulted in a drop in the intra-slab pressure of about 0.1 inch water column (W.C.) at a distance of 30 feet from extraction wells. However, the drop in intra-slab vacuum with distance was inconsistent, apparently reflecting the non-homogeneous nature of the space between the slabs. Also, the air flow exceeded 100 cubic feet per minute (cfm), suggesting that the slab was not well sealed, and air could enter the intra-slab space relatively easily.

Based on the results of the pilot test, the intra-slab vapor extraction system was designed and constructed as shown on Figure 13. Six horizontal vapor extraction wells were installed: four extending eastward from the southeast wall of the storage locker area (boundary of insulation removal) and two extending south from the south wall of the 142nd Street loading dock. The wells extending in from the storage locker area were installed as approximately 30-foot lengths of perforated piping, whereas those extending in from the 142nd Street loading dock were approximately 15-foot lengths. The perforated piping was installed using a specially-constructed horizontal drilling rig.

The blower system for the long-term remediation was installed at the same location as the pilot system. This system was manufactured by Product Recovery Management of Durham, North Carolina, which was similar to the pilot system but lacked a moisture separator, since no water was observed during the pilot test. In August 1998, MW-3, the well at the former dry cleaning equipment location, was attached to the vapor extraction system. This well was constructed with a screened section to just below the floor so it could serve as a vapor extraction well. A measurement taken in 1998 indicated that high levels of PCE (over 3,000,000 $\mu g/m^3$) were extracted from the well. This well was incorporated into the system as part of the IRM.

2.7.3 Sealing Penetrations

The initial indoor air investigation performed by Riverpoint found that the highest PCE concentrations were present in and near floor drains and other penetrations of the floor slab. As part of the IRM, all penetrations through the slab including utilities and spaces around floor drains or cleanouts were sealed. The IRM activities included:

- Using concrete to seal holes left by core samples collected as part of the April 1997 Site investigation;
- Using a silicone or latex sealant in spaces around floor drains and cleanouts; and
- Using concrete, silicone sealant, or latex sealant for other penetrations noted in the kitchen including spaces around water service piping and holes where former piping was installed, or was to be installed, in the kitchen west of the freezer.

2.8 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, Remedial Action Objectives (RAOs) for this Site were proposed in the FS and PRAP, and subsequently confirmed by NYSDEC in Exhibit B of the March 2011 ROD. The goal of the RAOs is to restore the Site to pre-disposal conditions to the extent practicable; however, the remedial action will include institutional and engineering controls to address residual contamination and practicably and feasibly ensure proper long-term protection of public health and the environment.

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

Remedial action alternatives were considered in the FS and PRAP, with the recommended alternative approved by NYSDEC in the ROD. The factors considered in remedial alternative analysis included the following:

- Protection of human health and the environment;
- Compliance with standards, criteria, and guidelines (SCGs);

- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community acceptance; and
- Land use.

Based on the exposure assessment and remedial action objectives presented in Sections 2.6.1 and 2.8, respectively, a range of remedial component alternatives (or technologies) for each of the four media (soil, groundwater, soil vapor and sub-slab insulation) were evaluated. These components (or technologies) were then assembled into overall alternatives that address Site-wide contamination. Action alternatives for addressing on-Site soil contamination included no further action, soil vapor extraction, in-situ chemical oxidation, and excavation and off-Site disposal. Groundwater remediation options included no further action, in-situ treatment (chemical oxidation and/or reductive dechlorination), and LNAPL recovery. Soil vapor remediation options included no further action, HVAC operation under positive pressure, and installation of a sub-slab depressurization system (SSDS). Remedial options for sub-slab insulation material included no further action, full removal and off-Site disposal, partial removal and off-Site disposal, and the installation of an SSDS. These remedial components or technologies were assembled into five overall remedial alternatives and are summarized as follows:

- Alternative 1: No Further Action

  Alternative 1 involved conducting no further remedial activities at the Site and included the "No Further Action" remedial component alternatives for soil, groundwater, sub-slab insulation, and soil vapor remediation.

  Alternative 1 called for no further action, therefore, could be easily implemented at no cost. However, Alternative 1 did not provide overall protection of public health and the environment, as the potential for vapor intrusion of PCE and related compounds into the building was not be addressed. Soil and insulation material would be left in place at concentrations that exceed SCOs, groundwater would remain above Class GA Standards, and soil vapor and indoor air levels could potentially exceed NYSDOH guidelines in non-compliance with the SCGs present for Site contaminants. Short-term and long-term effectiveness and permanence would not be provided by Alternative 1, nor would toxicity, mobility, or volume of Site contaminants be reduced as the contaminated material would remain in the subsurface.

- Alternative 2: Exposure Reduction

  Alternative 2 consisted of the operation of the building's HVAC system under positive pressure to reduce exposures associated with soil vapor contamination. To certify the operation of the HVAC under this Alternative, the existing air handling system would be inspected and adjusted as necessary to maintain a positive pressure inside the building, remaining open penetrations would be sealed, and monitoring procedures for open windows and doors would be established. Alternative 2 consisted of the "No Further Action" remedial component alternative for soil, groundwater, and sub-slab insulation media.

Alternative 2 provided overall protection of public health from vapor intrusion due to the adjusted HVAC operation, however, it would not comply with the SCGs, as soil and insulation materials exceeding SCOs would remain in place with the toxicity, mobility or volume of contamination unchanged. Positive pressure HVAC operation would provide short-term and long-term effectiveness and permanence by severing the pathways from the subsurface contamination to the inside of the building via vapor intrusion. Though HVAC adjustments to maintain positive pressure inside the building could be implemented, there could be limitations in an old inter-connected building, as it would entail maintaining an extensive monitoring network and may be ineffective if a window or door were inadvertently left open.

- Alternative 3: Soil and Insulation Material Removal

  Alternative 3 consisted of the excavation and off-Site disposal over an 8,000-square foot area for soil remediation and over a 7,400-square foot area for sub-slab insulation remediation, in addition to the operation of the HVAC under positive pressure that would reduce exposure to soil vapor contamination. The "No Further Action" remedial component alternative was selected for groundwater remediation. Given the presence of foundation elements and utilities at the Site, the excavation area was limited. Accordingly, the removal alternative would not achieve complete removal to allow for unrestricted use without some form of engineering and institutional controls. Alternative 3 would include an SMP for long-term management of the Site.

  Alternative 3 provided overall protection of public health and the environment and compliance with SCGs through the removal of the majority, but likely not all, soil and insulation material exceeding the RAOs. Site controls (e.g., HASP) would prevent unacceptable exposure during remediation activities. Soil and insulation material removal would not directly address groundwater or soil vapor, but would be expected to lead to attenuation in groundwater over time. SCGs might not be attained in groundwater or soil vapor for many years. HVAC operation under positive pressure would prevent unacceptable exposure to building users.

- Alternative 4: Treatment and Partial Removal

  Alternative 4 consisted of installation of an expanded SVE system for soil remediation, in-situ treatment for soil and groundwater (injection of a chemical oxidation product for soil, and a reductive dechlorination enhancement product for groundwater), LNAPL recovery for groundwater remediation, excavation and off-Site disposal over a maximum 1,000-square foot area for sub-slab insulation remediation, and installation of an SSDS throughout the existing three-section building. The need for extensive excavation to remove contaminated soil would be avoided in this alternative by treating soil and groundwater contamination in-situ through a series of injections. The maximum 1,000-square foot area for insulation material removal is in the northwestern portion of the Site, where concentrations of PCE within sub-slab insulation was greater than 5 mg/kg. Soil vapor exposure reduction would be accomplished through the SVE and SSDS. An SMP would be employed to ensure implementation of the institutional and engineering controls required for this alternative.

  Alternative 4 provided overall protection of public health and the environment, partially complies with SCGs, and would reduce the toxicity, mobility, and volume of contamination through the partial removal of sub-slab insulation material in the source area and the installation of LNAPL recovery wells along the northeastern Site boundary. The operation of an SVE system and SSDS would prevent residual vapors from entering the building.

- Alternative 5: Removal Plus Treatment for Unrestricted Use

  Alternative 5 consisted of excavation and off-Site disposal over an 8,000-square foot area for soil remediation and over a 7,400-square foot area for remediation of sub-slab insulation. Given the limitations that excavation close to foundation elements and utilities might not be possible, complete removal of contaminated soil would not be achieved in Alternative 5. In-situ treatment of soil and groundwater would be performed to address residual contamination in an effort to allow unrestricted use of the Site. Additional groundwater remediation would be accomplished by installation of LNAPL recovery wells in the vicinity of monitoring well M-12s. An SVE system would also be installed to reduce exposure to contaminated soil vapor under this alternative.

  Alternative 5 would attain all required RAOs for the Site, however, the significantly higher implementation and maintenance costs make this remedial option infeasible to implement.

The selected remediation approach was remedial Alternative 4. This RAWP for Phase 1 implements only the insulation removal portion of this alternative. The remaining remedial elements will be specified in a forthcoming RAWP for Phase 2 of the remedial action.

3.2 SELECTION OF THE PREFERRED REMEDY

The FS and PRAP assessed five potential response actions listed in Section 3.1 of this RAWP. The remedial alternatives considered the RI findings, current and future exposure scenarios, requirements of the Orders on Consent, and the RAOs and SCGs. The FS included tables and figures documenting the location and depth of contamination and planned excavation areas. Planned injection, SSDS, and SVE treatment areas were specified in figures included in AKRF's May 2011 Pre-Remedial Design Work Plan (PRDWP); however, as specified in the PRDWP, the exact location of SVE wells and SSDS suction pits will be determined in the field using the iterative design approach outlined in the PRDWP. The NYSDEC-approved remedial action, as stated in NYSDEC's March 2011 Record of Decision, consists of the following:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. The remedial design will include soil vapor delineation around SG-28 to confirm the source of contaminated soil vapor in this location. [The proposed scope for this work was presented for NYSDEC review and approval in the May 2011 PRDWP.] Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and Site management of the remedy as per DER-31. The major green remediation components are as follows:
    - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
    - Reducing direct and indirect greenhouse gas and other emissions;
    - Increasing energy efficiency and minimizing use of non-renewable energy;
    - Conserving and efficiently managing resources and materials;
    - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
    - Maximizing habitat value and creating habitat when possible;
    - Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Removal and off-Site disposal of VOC contaminated insulation material present beneath the floor slab in the northwestern portion of the Site near Room 119, to the extent practical [See maximum removal area on Figure 11].
3. Install a Soil Vapor Extraction (SVE) system to remediate the contaminated vadose zone soil beneath the building in the northwestern portion of the Site. [See planned SVE remediation area on Figure 7.] The SVE system will also be effective in preventing the off-Site migration of PCE and breakdown products in soil vapor. The VOC-contaminated air extracted from the SVE wells would be treated using activated carbon (or other air treatment as applicable).
4. Additional in-situ soil treatment will be achieved through the injection of a chemical oxidation product into the vadose zone in the northwestern portion of the Site where the soil contaminant concentrations are highest. [See planned soil chemical oxidation area on Figure 7.]
5. In-situ groundwater treatment will be achieved through injecting a product to enhance reductive dechlorination. If necessary, additional treatment to promote aerobic degradation of breakdown products will be considered. [See planned groundwater treatment area on Figure 8a.]
6. The petroleum LNAPL in monitoring well MW-12s will be removed using passive or active recovery methods to the extent practicable.
7. A sub-slab depressurization system [(SSDS)] will be installed throughout the existing Site building to mitigate the potential for soil vapor intrusion.
8. The existing floor slab, buildings and pavement at the Site form the Site cover; there is currently no exposed surface soil. A Site cover will be maintained as a component of any future Site development. The cover will consist either of structures such as buildings, pavement, sidewalks comprising the Site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the Site will meet the requirements for the identified Site use as set forth in 6 NYCRR Part 375-6.7(d).
9. The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.
10. To maximize the net environmental benefit, green remediation and sustainability efforts are considered in the design and implementation of the remedy to the extent practicable, including;
    - energy efficiency and green building design
    - using renewable energy sources
    - encouraging low carbon technologies
    - conserving natural resources

- increasing recycling and reuse of clean materials

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

    (a) requires the remedial party or Site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

    (b) land use is subject to local zoning laws, the remedy allows the use and development of the controlled property for restricted-residential, commercial or industrial use [As discussed in Section 1.2, reasonable foreseeable future land uses are those that would be permitted without variances or waivers under the Site's current zoning and approvals, which may include industrial, commercial and certain institutional uses, including a self-storage facility, art studio space, church and/or school];

    (c) restricts the use of groundwater as a source or potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;

    (d) prohibits agriculture or vegetable gardens on the controlled property;

    (e) requires compliance with the Department-approved Site Management Plan.

12. Since the remedy results in contamination remaining at the Site that does not allow for unrestricted use, a Site Management Plan is required, which will include the following:

    (a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the Site and details the steps and media-specific requirements necessary to assure the following institutional and/or engineering controls remain in place and effective:

    Institutional Controls:

    - The Environmental Easement discussed in Paragraph 11 above.

    Engineering Controls:

    - The soil vapor extraction system discussed in Paragraph 3 above
    - The sub-slab depressurization system discussed in Paragraph 7 above.
    - The Site cover discussed in Paragraph 8 above.

    This plan includes, but may not be limited to:

    (i) Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

    (ii) descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;

    (iii) a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the Site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

    (iv) provisions for the management and inspection of the identified engineering controls;

    (v) maintaining Site access controls and Department notification; and

(vi) the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

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

(i) monitoring of groundwater and indoor air to assess the performance and effectiveness of the remedy;

(ii) monitoring of soil vapor to evaluate the effectiveness of the SVE system;

(iii) a schedule of monitoring and frequency of submittals to the Department; and

(iv) monitoring for vapor intrusion for any buildings occupied or developed on the Site, as may be required pursuant to item (a)(iii) above.

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

(i) compliance monitoring of treatment systems to assure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

(ii) maintaining Site access controls and Department notification; and

(iii) providing the Department access to the Site and O&M records.

The operation of the components of the remedy will continue until the RAOs are achieved, or until NYSDEC determines that continued operation is impracticable or infeasible.

As described previously, the objective of this RAWP for Phase 1 of the remediation is to present a design for the removal and off-Site disposal of VOC contaminated insulation material and the restoration of the existing Site cover (concrete floor slab) to its original condition following insulation removal. Details of these remedial elements are set forth in Section 5.0. Details of the remaining elements, including injections of chemical oxidation and reductive dechlorination enhancement products, the construction of SSDS and SVE systems, petroleum LNAPL recovery around MW-12s, and the SMP for future Site management will be presented in the RAWP for Phase 2 of the remediation.

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS

The objective of this RAWP – Phase 1 is to present a design for the contaminated insulation removal and Site cover restoration elements of the preferred remedial alternative. Phase 2 of the RAWP will be submitted to NYSDEC to present a design for the remaining elements of the preferred remedial alternative.

The remedial elements for this RAWP for Phase 1 of the remedy consist of the following:

1. Construction of an enclosure around the excavation area consisting of a rigid framework of fire-treated wood or acceptable fire retardant structural material, isolation barriers constructed using 2 layers of 6-mil fire retardant plastic sheeting over all openings and penetrations of the work area in such a manner as to prohibit air passage.
2. Preparation of a staging area for excavated material so that subsurface material is segregated and staged on top of, and covered with, 6-mil plastic sheeting.

3. Installation of negative air pressure units that create and maintain a static negative air pressure of 0.02-inch (minimum) water column in the work area relative to outside the work area.
4. Excavation of sub-slab insulation material and any soil/fill in direct contact with such insulation including, but not limited to, concrete, gravel, tar paper, styrofoam, etc., which is to be disposed of off-Site as hazardous PCE-contaminated waste.;
5. Classification and segregation of excavated material as it is staged into one of the following waste streams:
    a. Insulation Material – will be handled and disposed of as hazardous PCE-contaminated waste;
    b. Concrete, asphalt, tar paper, or other building materials in direct contact with insulation material – will be handled and disposed of as hazardous PCE-contaminated waste;
    c. Fill material overlying concrete – if fill material exhibits no evidence of contamination, it may be characterized for potential reuse as backfill material on-Site, or disposed of off-Site as regulated, non-hazardous waste. (Note that fill material directly beneath the surface floor slab may also contain insulation material, which will be handled and disposed of as hazardous PCE-contaminated waste, irrespective of visual, olfactory, or PID indications of contamination);
    d. Surficial concrete – if surficial concrete exhibits no evidence of contamination, it may be characterized for potential reuse as backfill material on-Site or disposed of off-Site as uncontaminated construction and demolition debris.
6. Restoration and maintenance of an engineered composite cover consisting of a 15-mil vapor barrier placed at the base of the excavation and up the sidewalls, overlain by washed gravel, segregated clean soil or imported clean material up to the bottom of the existing floor slab, overlain by 6 inches of 4,000 psi concrete with two layers of 6 by 6 wire mesh, matching the existing surface;
7. Collection and analysis of end-point samples to evaluate the performance of the remedy.
8. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal.
9. Importation of materials to be used for backfill and cover to be in compliance with: (a) chemical limits and other specifications included in Table 9, (b) all Federal, State and local rules and regulations for handling and transport of material.
10. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RAWP for Phase 1 of the remediation, which will consist of insulation removal only. Details for the remaining remedial activities listed in Section 3.2 will be performed in accordance with other work plans. All deviations from the RAWP will be promptly reported to NYSDEC for approval and fully explained in the Final Engineering Report (FER).

4.0 REMEDIAL ACTION PROGRAM

4.1 GOVERNING DOCUMENTS

All remedial activities performed under the RAWP-Phase 1 will adhere to the following governing documents to maintain the protection of remediation workers and the public, to provide for Quality Assurance (QA), maintain Quality Control (QC), properly handle, stage, dispose of, and limit the potential for erosion and migration of Site soils, and to keep the surrounding community informed of remedial activities conducted under the RAWP-Phase 1.

4.1.1 Site Specific Health & Safety Plan (HASP)

A HASP for the work proposed under this RAWP for Phase 1 of the remediation is provided as Appendix C. All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Owner and its consultants and contractors preparing the remedial documents submitted to the State and those performing the construction work, will be responsible for the preparation of an appropriate HASP and for the appropriate performance of work according to that plan and applicable laws.

The HASP and requirements defined in this RAWP pertain to all remedial work performed at the Site.

The Site Manager that will be responsible for on-Site implementation of the HASP is anticipated to be Matthew Oleske. A resume for Mr. Oleske is included in the HASP in Appendix C and in Appendix G.

Confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses.

4.1.2 Quality Assurance Project Plan (QAPP)

The Quality Assurance Project Plan (QAPP) has been attached as Appendix D and includes the sampling frequency, analysis methods and collection methods to be followed during post insulation removal end point sampling.

4.1.3 Construction Quality Assurance Plan (CQAP)

As this RAWP-Phase 1 is for the purposes of sub-slab insulation removal only, a Construction Quality Assurance Plan (CQAP) has not been prepared. A CQAP will be prepared and presented in the RAWP for Phase 2 of the remediation, which will outline the remedial procedures associated with SVE, SSDS, and in-situ treatment.

4.1.4 Materials Management Plan

A Materials Management Plan is provided as Section 5.4 of this RAWP and includes detailed plans for managing all soils/materials that are disturbed at the Site, including excavation, handling, storage, transport and disposal. It includes controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations.

4.1.5 Storm-Water Pollution Prevention Plan (SWPPP)

As the area of disturbance is within a building and less than one acre of disturbance, coverage under the SPDES General Permit for Stormwater Discharges from Construction

Activity is not required. Therefore, a Notice of Intent and SWPPP are not required. However, in the event of material staging outdoors, erosion and sediment controls will be implemented as necessary in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control.

4.1.6 Community Air Monitoring Plan (CAMP)

A CAMP for the work proposed under this RAWP for Phase 1 of the remediation is provided as Appendix E.

4.1.7 Contractor Submittals

The Remedial Engineer will review all plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and will confirm that they are in compliance with this RAWP. All remedial documents will be submitted to NYSDEC and NYSDOH prior to the start of work.

4.1.8 Citizen Participation Plan

Citizen participation activities have been implemented for the project, as discussed in Section 3.2.4. The approved February 2011 Citizen Participation Plan for this project is attached in Appendix F.

A certification of mailing will be sent by the Owner to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository was inspected on (specific date) and that it contained all applicable project documents.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

Document repositories have been established at the following locations and contain all applicable project documents:

NYSDEC Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101-5407
Attn: Bryan Wong
Phone: (718) 482-4905
Hours: Mon. to Fri 7:30-3:30 (call for appointment)

New York Public Library - Countee Cullen Branch
104 West 136th Street
New York, NY 10030
Phone: (212) 491-2070
Hours: M-Th: 10:00 AM – 8:00 PM
F-Sat: 10:00 AM – 5:00 PM
Sun: Closed

4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.2.1 Project Organization

The people responsible for Remedial Action work are detailed in the following subsections. A contact list with names and phone numbers of project personnel is provided as Table 10. Resumes of key personnel involved in the Remedial Action are included in Appendix G.

4.2.1.1. Remedial Engineer

The Remedial Engineer for this project will be Michelle Lapin P.E. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the 2350 Fifth Avenue Site (NYSDEC Inactive Hazardous Waste Disposal Site #2-31-004). The Remedial Engineer will certify in the FER that the remedial activities were observed by qualified environmental professionals under her supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will coordinate the work of other contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of backfill material, and management of waste transport and disposal. The Remedial Engineer will be responsible for all appropriate communication with NYSDEC and NYSDOH.

The Remedial Engineer will review all pre-remedial plans submitted by contractors for compliance with this RAWP and will certify compliance in the FER, as detailed in Section 9.1.

4.2.1.2. Project Director

The project director will be responsible for the general oversight of all aspects of the project, including scheduling, budgeting, data management and decision-making regarding the field program. The project director will communicate regularly with all members of the AKRF project team, the NYSDEC, and the Owner to ensure a smooth flow of information between involved parties. Marc Godick will serve as the project director for the RAWP activities.

4.2.1.3. Project Manager

The project manager will be responsible for directing and coordinating all elements of the RAWP. She will prepare reports and participate in meetings with the Owner and/or the NYSDEC. Kate Brunner will serve as the project manager of the RAWP.

4.2.1.4. Field Team Leader

The field team leader will be responsible for supervising the daily sampling and health and safety activities in the field and will ensure adherence to the RAWP and HASP, including the community air monitoring. He/she will report to the project manager on a regular basis regarding daily progress and any deviations from the work plan.

The field team leader will be qualified to perform soil screening activities (e.g., be able to detect petroleum or chemical odors and chemical staining and be proficient in the use of monitoring equipment such as a photoionization detector and particulate monitor) and to make the distinction between potentially contaminated and non-contaminated soil based on observations made during soil screening activities.

The field team leader responsibilities will be assigned to appropriate AKRF personnel and will be established when implementation of the work is near. Field team leaders may include Elizabeth Baird, Gregory Baird, Stephen Grens, Jr., and Matthew Oleske.

4.2.1.5. Project Quality Assurance/Quality Control Officer

The Quality Assurance/Quality Control (QA/QC) Officer will be responsible for adherence to the QAPP. The QA/QC Officer will review the procedures with all personnel prior to commencing any fieldwork and will conduct periodic Site visits to assess implementation of the procedures. The QA/QC officer will also be responsible for reviewing a Data Usability Summary Report (DUSR), if required. Marcus Simons will serve as the QA/QC officer for the work under this RAWP.

4.2.2 Work Hours

Work hours are anticipated to be Monday through Friday from 7:00 a.m. to 5:00 p.m. 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. NYSDEC will be notified by the Owner of any variances issued by the Department of Buildings.

4.2.3 Site Security

Building personnel are present during building hours at the sales desk, which overlooks the building entrance on West 141st Street. During the remedial work performed under this RAWP for Phase 1, the work area, environmental enclosure, and staging area(s) will be cordoned off from public access using cones, signage, or other appropriate barriers.

4.2.4 Traffic Control

The work area for remedial activities performed under this RAWP for Phase 1 will be located within an existing building equipped with loading docks on West 141st and West 142nd Streets. A small volume of trucks for material removal is anticipated for the insulation removal, as the planned removal area is an approximate 1,000-square foot section with a maximum excavation depth of approximately 3 feet below grade. Flaggers will be present as needed at active driveways to manage the access and movements of trucks. Although not anticipated, if sidewalk or partial road closure is necessary, these activities will take place in accordance with a NYCDOT-approved Maintenance and Protection of Traffic (MPT) plan and will be managed by a flag-person, as needed.

4.2.5 Contingency Plan

A contingency plan for this work proposed under this RAWP for Phase 1 of the remediation is provided as Section 5.4.11.

4.2.6 Worker Training and Monitoring

Worker training, medical monitoring, and protection will be performed as outlined in the HASP (Appendix C) and QAPP (Appendix D).

4.2.7 Permits and Agency Approvals

There are no anticipated State Environmental Quality Review Act (SEQRA) requirements for this project. All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of remedial construction.

A complete list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial work will be provided in the FER. This list will include a citation of the law, statute or code to be complied with, the originating agency, and a contact name and phone number in that agency if readily available.

No remedial work performed under this RAWP is in regulated wetlands and adjacent areas; therefore, no approvals from NYSDEC Division of Natural Resources are necessary.

4.2.8 Pre-Remediation Meeting with NYSDEC

A meeting with representatives of NYSDEC, AKRF and the contractor performing the work will be arranged prior to the start of major construction activities.

4.2.9 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in Table 10. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

4.2.10 Remedial Action Costs

The total estimated cost of the portion of the remedial action presented in this RAWP for Phase 1 is $428,000. An itemized and detailed summary of estimated costs for all remedial activities will be attached as an Appendix to the RAWP for Phase 2 of the remediation. This will be revised based on actual costs and submitted as an Appendix to the Final Engineering Report.

4.3 SITE PREPARATION

4.3.1 Isolation Enclosure

The sub-slab insulation removal will consist of working within an isolated enclosure equipped with exhaust fans to control dust and vapors generated from demolition and removal activities. The enclosure will be constructed to prohibit air passage and to maintain a static negative air pressure of 0.02-inch (minimum) water column during work activities. The isolation enclosure will be constructed at the perimeter of the active work area covering walls, ceilings, and floor-wall joints with 2 layers of 6-mil fire retardant plastic sheeting secured with tape or other adhesive. Wall covering plastic sheeting will be extended onto the floor a minimum of 12 inches to ensure that air passage through the enclosure is prohibited. The enclosure will be maintained while the floor slab is open and while any known or potentially contaminated material is exposed or otherwise staged at the Site.

The isolation enclosure would cover the 1,000-square foot area for insulation removal and extend up to ceiling height, approximately 12 feet above the floor. This 12,000-cubic foot volume of air would be vented with air exchange rates between 3 and 6 per hour, which correspond to approximate air flow rates ranging from 600 to 1,200 cubic feet per minute (CFM). The exhaust gas would be treated using an approximately 500 to

1,000 pound granular activated carbon (GAC) adsorber, which would be ducted to an outdoor discharge point a minimum of 12 feet above grade on West 142nd Street. The technical specifications for the blower and GAC would be provided to NYSDEC following approval of the RAWP – Phase 1 and subsequent contractor bidding of the work.

4.3.2 Stabilized Construction Entrances

It is anticipated that no trucks or machinery will enter the excavation; however, as needed, a stabilized construction entrance and truck wash may be constructed and operated.

4.3.3 Utility Marker and Easements Layout

The Owner and its contractors will be responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Owner and its contractors will be responsible for safe execution of all invasive and other work performed under this RAWP.

The presence of utilities and easements in the vicinity of the insulation removal area will be investigated and may include additional geophysical surveys or hand digging in certain areas.

4.3.4 Sheeting and Shoring

No sheeting or shoring is anticipated to be used as part of the insulation removal. However, appropriate management of structural stability of on-Site or off-Site structures during on-Site activities including excavation is the responsibility of the Owner and its contractors. The Owner and its contractors will be responsible for safe execution of all invasive and other work performed under this Plan.

4.3.5 Equipment and Material Staging

Designated staging areas will be determined by AKRF personnel and the contractor and will be cordoned off from building occupants using signage, cones, or other barriers. Material staging areas will be constructed by placing 6-mil plastic on the ground or using sealed containers. Both potentially contaminated and uncontaminated material from the excavation will be staged on top of, and covered with, 6-mil plastic sheeting that is anchored down. Material staging areas will be inspected at a minimum once each week. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. A Materials Management Plan with additional details regarding material handling and staging is provided in Section 5.4.

4.3.6 Decontamination Area

A decontamination area will be established adjacent to the environmental enclosure to be constructed around the planned excavation area. The floor of the decontamination area will be covered with 6-mil plastic sheeting as necessary and bermed to prevent spreading of decontamination fluids or potential discharge to the ground surface.

Heavy equipment decontamination will be performed as outlined in Section 8.2.5 of the HASP. All equipment in direct contact with known or potentially contaminated material will be either dedicated or decontaminated prior to handling less contaminated material or removal from the Site. Decontamination of chemically contaminated heavy equipment will be accomplished using high-pressure steam or dry decontamination with brushes and shovels. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE as prescribed in the HASP.

4.3.7 Site Fencing

The planned excavation and staging areas for work performed under Phase 1 of the RAWP is anticipated to be entirely contained within the Site building. The isolation enclosure discussed in Section 4.3.1 will effectively cordon off the work area; therefore, additional Site fencing will not be constructed.

4.3.8 Demobilization

Restoration of the excavation will include replacement of surficial concrete to match existing surface. Upon completion of the work, the waste materials (general refuse and excavated materials), isolation enclosure, and decontamination pad will be removed from the Site and properly disposed of.

4.4 REPORTING

Copies of all daily and monthly reports will be included in the Final Engineering Report.

4.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by the end of each day of remedial work and will include:

- An update of progress made during the reporting day;
- Locations of work and quantities of material imported and exported from the Site;
- References to alpha-numeric grid map for Site activities;
- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP findings, including excursions; and
- An explanation of notable Site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP or other sensitive or time critical information. However, such conditions will also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to the NYSDEC Project Manager via personal communication (i.e., either e-mail or telephone call).

Daily reports will include a description of daily activities keyed to an alpha-numeric grid map for the Site to identify specific work areas (see Figure 14). These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

The NYSDEC assigned project number (Site #2-31-004) will appear on all reports.

4.4.2 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers within one week following the end of the month of the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

4.4.3 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during and after remediation. Photos will be submitted to NYSDEC on CD or other acceptable electronic media and will be sent to NYSDEC's Project Manager (2 copies) and to NYSDOH's Project Manager (1 copy). CDs will have a label and a general file inventory structure that separates photos into directories and sub-directories according to logical Remedial Action components. A photo log keyed to photo file ID numbers will be prepared to provide explanation for all representative photos. Photos will be submitted on a monthly basis or another agreed upon time interval.

Job-Site record keeping for all remedial work will be appropriately documented. These records will be maintained on-Site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 Complaint Management Plan

Complaints from the public regarding Site remedial activities will be evaluated by AKRF and communicated to NYSDEC Project Manager immediately. The response action to the complaint will be coordinated in conjunction with NYSDEC and NYSDOH input, as appropriate.

4.4.5 Deviations from the Remedial Action Work Plan

Any material deviations from the NYSDEC-approved RAWP will be communicated to NYSDEC Project Manager including:

- Reasons for deviating from the approved RAWP; and
- Effect of the deviations on overall remedy.

NYSDEC approval will be sought prior to proceeding with work deviating materially from the RAWP. In the event of an emergency change to the work plan, NYSDEC Project Manager will be consulted immediately.

5.0 REMEDIAL ACTION: MATERIAL REMOVAL FROM SITE

The selected remedial alternative approved in NYSDEC's ROD involved excavating and disposing of PCE-contaminated sub-slab insulation material below a maximum 1,200-square foot area located in the northwestern portion of the Site. The maximum removal area encompasses the area with the highest PCE concentrations detected in the insulation material. Sub-slab insulation removal from two discrete areas is not practicable and feasible. Removal from these two areas is being omitted from the original remedial plan due to structural concerns and utility conflicts, as follows:

- An approximately 14-foot by 12-foot (about 165 square feet) portion of the original maximum removal area is in a utility room, which includes apparent non-structural walls and contains a water heater and associated piping currently in use. The room contains connections to electricity, natural gas and water supply lines.
- An approximately 6.5-foot by 7.5-foot (about 50 square feet) portion of the original maximum removal area is in a bathroom, which includes non-structural walls and contains fixtures currently in use. The room contains connections to electricity, water supply and sanitary sewer.

The resulting insulation removal area is approximately 1,000 square feet, as shown on Figure 15. The removal of contaminated insulation material from this approximately 1,000 square foot area will result in contaminant mass reduction for this media in excess of 90%, as summarized in Table 11.

Excavated material will be screened for indications of contamination and classified into four waste streams: insulation material, building material in direct contact with insulation material, fill material overlying concrete, and surficial concrete. All insulation material and building materials in direct contact with it will be disposed of off-Site as hazardous PCE-contaminated waste. Surficial concrete and fill material overlying concrete that does not exhibit visual, olfactory, or PID indications of contamination will be disposed of off-Site as regulated, non-hazardous waste, or evaluated for potential on-Site reuse. The excavation work will be conducted within a negative pressure environmental enclosure to mitigate the potential migration of vapors from the excavation to occupied sections of the Site building. A HASP (Appendix C) and CAMP (Appendix E) will be implemented to ensure protection of Site workers and the surrounding community during soil excavation activities. All remediation work will be conducted in accordance with this RAWP for Phase 1 of the remediation.

5.1 CLEANUP OBJECTIVES

This RAWP for Phase 1 includes only the sub-slab insulation removal portion of the remedial approach. VOCs were detected above SCO for Unrestricted Use in six of the 13 samples of sub-slab insulation material collected in 2009. Levels of PCE greater than 5 mg/kg were found in 3 insulation material samples in an approximately 1,000-square foot area beneath Room 119 and in the adjacent corridor. Insulation sample locations and corresponding PCE concentrations are provided in Table 8 and on Figure 15.

Materials management on-Site and off-Site will be conducted in accordance with the Materials Management Plan as described in Section 5.4 below.

If tanks are encountered during insulation removal activities, UST closure(s) will, at a minimum, conform to criteria defined in DER-10.

5.2 REMEDIAL PERFORMANCE EVALUATION (POST EXCAVATION ENDPOINT SAMPLING)

5.2.1 Endpoint Sampling Frequency

Following excavation of sub-slab insulation material and prior to the installation of a vapor barrier, end point samples will be collected. It is anticipated that the insulation material will be removed to the full depth within the 1,000-square foot removal area, to the extent practicable and feasible. Concrete is expected to be present beneath the insulation material. As such, endpoint samples will only be collected along the perimeter of the removal area and not the bottom. Endpoint sampling will be performed in accordance with DER-10 sample frequency requirements. Side-wall samples will be collected a minimum of every 30 linear feet. With the maximum removal area of 1,000-square feet (approximately 250 foot perimeter), sidewall endpoint samples will be collected at a frequency of one sample per 30 linear feet, for a total of approximately nine endpoint samples of insulation material.

5.2.2 Methodology

Endpoint samples of insulation material will be analyzed for TCL VOCs using EPA Method 8260. Because the sub-slab insulation material is lightweight and the VOC analytical method accounts for sample weight, the laboratory requested the samples be collected using a traditional VOC analytical glassware to ensure adequate sample volume. Samples will be sent to the laboratory each day for prompt extraction and analysis. Chemical laboratories used for all end-point sample results will be NYSDOH ELAP certified with Category B deliverables provided. Endpoint sample results will be used to document the concentrations of the material left in place for future residual management.

5.2.3 Reporting of Endpoint Data in FER

The FER will provide a tabular and map summary of all endpoint sample results and exceedances of SCOs. In addition, endpoint sample data will be submitted to NYSDEC in EQuIS electronic data deliverable (EDD) format.

5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES

Four waste streams are anticipated as part of the insulation removal process as follows:

1. Insulation material (cork and styrofoam) will be handled and disposed of as hazardous PCE-contaminated waste. Based on previous sampling in the planned removal area, the maximum depth of insulation is expected to be about 3 feet below grade, and situated atop another subgrade concrete slab (which will be left in place). The estimated quantity of sub-slab insulation material to be removed from the Site as part of remediation is approximately 55 cubic yards.
2. Concrete, tar paper and other building material in direct contact with insulation material will be handled and disposed of as hazardous PCE-contaminated waste. The estimated quantity of concrete/fill in direct contact with the insulation material to be removed from the Site is approximately 10 cubic yards.
3. If fill material overlying concrete exhibits no evidence of contamination and is suitable backfill material, then it may be characterized for potential reuse as backfill material on-Site, in accordance with Section 5.4.6, or disposed of off-Site as regulated, non-hazardous waste.

The maximum estimated quantity of fill material overlying subgrade concrete that may be removed from the Site is approximately 30 cubic yards.

4. If surficial concrete exhibits no evidence of contamination, then it will be handled as uncontaminated construction and demolition debris. Surficial concrete that exhibits evidence of contamination will be disposed of off-Site as regulated, non-hazardous waste (pending receipt of laboratory results confirming status as non-hazardous waste). Acceptable material may be characterized for potential reuse as backfill material on-Site in accordance with Section 5.4.6. The maximum estimated quantity of surficial concrete material that may be removed from the Site is approximately 20 cubic yards.

A cross section of the insulated floors showing these layers is provided as Figure 11.

The estimated quantity of soil to be imported into the Site for backfill and cover soil is about 45 cubic yards (surficial concrete will be replaced in kind). The estimated quantity of soil/fill expected to be reused on Site is about 50 cubic yards.

5.4 MATERIALS MANAGEMENT PLAN

The purpose of the materials management plan is to establish a protocol outlining the handling of Site soils and other subsurface materials, including the sub-slab insulation materials, during excavation, screening, staging/storage, loading, and off-Site disposal.

Removal of the sub-slab insulation material will entail demolition of the floor slabs and non-structural components where appropriate, practicable and feasible. The maximum area of sub-slab insulation material to be removed is situated approximately one to two feet below the floor slab and over a maximum 1,000-square foot area in the northwestern portion of the Site, as shown on Figure 15. Excavation and demolition associated with removal of contaminated insulation will be performed within a negative pressure enclosure to minimize the potential for releases of dust and odors into other parts of the Site building or surrounding community. Intrusive construction work will be conducted in accordance with the procedures defined in the HASP and CAMP attached as Appendices C and E, respectively.

Because of walls, foundations, ceilings and utilities that must remain in-place, not all sub-slab insulation material will be accessible for removal within the defined area. Plumbing and electrical trades will be consulted for evaluating and disconnecting existing utilities in the removal area. The targeted removal area could also be reduced, in consultation with NYSDEC, if significant limitations are identified due to structural concerns, utility conflicts, other considerations, or if the sampling identifies significantly lower concentrations than those identified in previous investigations.

Any future intrusive work that will disturb the residual insulation material left in place beneath the concrete floor will be managed under a Site Management Plan to be prepared under the RAWP for Phase 2.

5.4.1 Field Screening Methods

The existing floor slab will be carefully removed via saw cutting, jack-hammering, or excavating, as not to disturb the underlying insulation material to the extent practicable for the minimization of cross-contamination between excavated media. It is assumed that surficial concrete could be characterized for reuse on-Site as backfill, disposed of as non-hazardous demolition debris or recycled as construction and demolition (C&D) material if it does not exhibit signs of contamination. All excavated insulation material (i.e., cork and styrofoam) and removed material in direct contact with sub-slab insulation (concrete, tar paper, or other building material), will be handled and disposed of as an F002 listed hazardous waste due to association with dry cleaning operations. If fill material overlying concrete, but not in contact with insulation, exhibits no evidence of contamination, it may be characterized for potential reuse as backfill material on-Site, or disposed of off-Site as regulated, non-hazardous waste. In addition to screening excavated material for the presence of contamination, work zone air monitoring for VOCs will be performed according to the HASP.

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a qualified environmental professional during all remedial excavations into known or potentially contaminated material. Screening of excavated material will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy.

Excavated material that exhibits visual, olfactory, or elevated PID readings will be separated from concrete debris, or other excavated material not exhibiting visual, olfactory, or PID indications of contamination, as outlined in Section 5.4.2.

The base and outer limits of the insulation material removal area will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the Final Engineering Report.

Screening will be performed under the supervision of qualified environmental professionals. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work for unknown contaminant sources during the remediation work.

5.4.2 Stockpile Methods

Excavated materials will be screened for the presence of contamination during removal; as specified in Section 5.4.1, and continuously separated between hazardous, non-hazardous, and uncontaminated construction and demolition debris wastes. Excavated material will be staged in designated areas following the field-screening protocol, or excavated directly into properly lined containers (drums, roll-off carts lined with polyethylene sheeting and equipped with hard tarp covers, or other secure containers). All containers will be covered at the end of each work day to minimize the potential for volatilization of Site contaminants.

Material staging areas will be inspected at a minimum once each week and after every major 5-year storm event, which is greater than 4.5-inches of water in a 24-hour period. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

Contaminated material staging areas will be kept covered at all times with appropriately anchored tarps or covers. Staging areas will be routinely inspected and damaged tarp covers will be promptly replaced.

A water source will be available on-Site for dust control.

5.4.3 Materials Excavation and Load Out

The determination to remove materials from the Site will be made in the field based on the remaining capacity of material storage containers and schedule for additional removal. Prior to loading hazardous waste, the transport containers will be lined with polyethylene sheeting, if the container is not already lined with polyethylene sheeting, to prevent accidental loss of material in transit. All truck loading procedures will be performed under the supervision of the Remedial Engineer or a qualified environmental professional, and will be performed atop stabilized (paved) construction entrances and exits. The stabilized construction entrances will be maintained free of excavated material or other construction debris prior to and following each use.

The personnel under the supervision of the Remedial Engineer or a qualified environmental professional will oversee all invasive work and the excavation and load-out of all excavated material. During excavation and staging, the on-Site field personnel will continuously monitor the excavated material for evidence of contamination and conduct periodic screening for VOCs using a PID. Soil excavated from the property exhibiting chemical or solvent-like odors; visual staining, or elevated PID readings above 5 ppm will not be reused on-Site but will be staged for off-Site disposal. Excavated sections of the concrete floor slab not in direct contact with sub-slab insulation material, and which do not exhibit evidence of contamination, may be disposed of off-Site as uncontaminated C&D or re-used on-Site. Excavated sub-slab insulation, material in direct contact with sub-slab insulation, or other excavated material exhibiting evidence of contamination will be disposed of off-Site and treated as an F002 listed hazardous waste. All excavations will be considered open excavations and will be managed according to applicable local, State, and Federal regulations. The Owner and its contractors will be responsible for safe execution of all invasive and other work performed under this Plan. The presence of utilities and easements on the Site will be investigated by the Remedial Engineer. It will be determined whether a risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the Site. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

Prior to leaving the excavation area, all contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage). It is anticipated that no trucks or machinery will enter the excavation; however, as needed, a truck wash may be constructed and operated. A representative of the Remedial Engineer, Qualified Environmental Professional, or their representative under direction of the Remedial Engineer will be responsible for ensuring that all outbound trucks will be inspected and washed, if needed, before leaving the Site until the remedial construction is complete.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site tracking. A representative of the Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

The Owner and its consultants and contractors preparing the remedial documents submitted to the State, and parties performing this work, will be responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

Additional grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this RAWP.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

The base and outer limits of the insulation removal area will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the Final Engineering Report.

5.4.4 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Truck transport routes are as follows:.

Trucks will travel to and from the Site via West 141st and 142nd Streets. Arriving trucks will proceed to the Site from the Major Deegan Expressway (I-87), entering Manhattan via the 145th Street Bridge. Arriving trucks will proceed west on West 145th Street, south on Adam Clayton Powell Jr. Boulevard, and east on West 142nd Street to the Site. Depending on the final destination, trucks departing the Site will travel from the Site to southbound Fifth Avenue, west on 139th Street to northbound Adam Clayton Powell Jr. Boulevard, and east on 145th Street to the northbound or southbound Major Deegan Expressway (I-87) via the 145th Street Bridge. All trucks loaded with Site materials will exit the vicinity of the Site using these truck routes; however, the truck route is subject to change depending on destination facility, available truck routes at the time of the work and trucking company input related to the allowable truck routes. Proposed in-bound and out-bound truck routes to the Site are shown in Figure 16. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting 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.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. To the extent possible, queuing of trucks will be performed on-Site in order to minimize off-Site disturbance.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Prior to leaving the excavation area, all contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage), and washed, as necessary, prior to leaving the Site. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

5.4.5 Materials Disposal Off-Site

Disposal locations will be established at a later date and will be reported to the NYSDEC Project Manager prior to removal of material from the Site.

The total quantity of material expected to be disposed off-Site is up to approximately 65 cubic yards. Up to approximately 50 cubic yards of non-hazardous C&D may be recycled, re-used on-Site, or disposed of off-Site.

Other than the surficial concrete and gravel/fill material below the surficial floor slab that does not show visual, olfactory, or PID evidence of contamination and is not in direct contact with sub-slab insulation material, all soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval.

Soil that does not meet Unrestricted Use SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or Owner to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. 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 all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2.

Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities). Surficial concrete and gravel/fill material below the surficial floor slab that does not show visual, olfactory, or PID evidence of contamination and is not in direct contact with sub-slab insulation material may be sent to a permitted Construction and Demolition (C&D) processing facility without permit modifications.

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be C&D materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C&D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C&D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated an d that it must not be redirected to on-Site or off-Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial

Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site during this Remedial Action, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Engineering Report.

Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the FER. All data available for soil/material to be disposed at a given facility will be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

5.4.6 Materials Reuse On-Site

Excavated concrete or demolition material will be evaluated for potential reuse on-Site based on the following criteria:

- Concrete originating from the surficial floor slab (topmost layer of concrete, constructed circa 1998) that does not show visual, olfactory, or PID evidence of contamination and is not in direct contact with sub-slab insulation material; or
- Gravel or fill material below the new floor slab that does not show visual, olfactory, or PID evidence of contamination and is not in direct contact with sub-slab insulation material.

Concrete and demolition debris that do not exhibit signs of contamination will be sampled for asbestos prior to re-use on-Site. Other backfill materials will be tested as specified in NYSDEC's Division of Environmental Remediation document entitled *DER-10 Technical Guidance for Site Investigation and Remediation* (May 2010). Material will be sampled for TCL VOCs at a rate of 1 discrete sample from material to be imported or reused at the Site due to the planned importation or reuse of approximately 95 cubic yards of material. Soil will be sampled at a rate of two composite samples from material to be imported or reused as backfill and analyzed for PCBs, TCL SVOCs, TCL pesticides, herbicides, and TAL metals. Any material meeting the Part 375 SCOs for Restricted Residential Use will be acceptable for reuse as on-Site backfill.

Sub-slab insulation, or any material in direct contact with sub-slab insulation, may not be separated for reuse on-Site and will be disposed of as a hazardous waste. Excavated materials will be staged depending on the reuse criteria listed above and covered with polyethylene sheeting to prevent cross-contamination. Contaminated material staging areas and potential reuse staging areas will be separated.

Chemical criteria for on-Site reuse of material is the same as that for imported backfill, as listed in Table 9. The Remedial Engineer will ensure that procedures defined for materials reuse in this RAWP are followed and that unacceptable material will not remain on-Site.

Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos.

Concrete crushing or processing on-Site is prohibited. Note: DEC will consider the use of specially designed devices that are self-contained and capable of providing misting for dust control. DEC approval will be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final Site Management Plan.

5.4.7 Fluids Management

Depth to groundwater in the vicinity of the proposed excavation area is between 8 and 10 feet below the building slab. The planned excavation to remove contaminated sub-slab insulation material is expected to reach maximum excavation depth of about 3 feet below grade. As such, dewatering is not anticipated for the removal of sub-slab insulation material.

All liquids to be removed from the Site, including decontamination or potential dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

5.4.8 Demarcation

After the completion of insulation removal and prior to backfilling, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of residual material. A physical demarcation layer, consisting of a 15 mil vapor barrier (such as StegoWrap) will be placed on this bottom surface of the removal area and up excavation sidewalls to provide a visual reference. This demarcation layer will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of residual material which will be defined in the Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the 'Residuals Management Zone' in the Site Management Plan. A map showing the survey results will be included in the Final Engineering Report and the Site Management Plan.

5.4.9 Backfill from Off-Site Sources

Native material from a virgin quarry source will not be sampled prior to use as backfill on the Site.

Any off-Site material used as backfill will be either from a NYSDOT-approved source, or will qualify as "exempt fill" under 6 NYCRR Part 360. Backfill materials from a non-DOT-approved source will be tested as specified in NYSDEC's Division of Environmental Remediation document entitled *DER-10 Technical Guidance for Site Investigation and Remediation* (May 2010) and in accordance with the QAPP provided as Appendix D. Materials proposed for import will be analyzed for TCL VOCs by EPA Method 8260 at a rate of 1 discrete sample for the approximately 95 cubic yards of material planned for import or reuse. Soil will be sampled at a rate of two composite samples for the approximately 95 cubic yards of backfill to be imported or reused and analyzed for TCL SVOCs by EPA Method 8270, TCL pesticides by EPA Method 8081, herbicides by EPA Method 8151, PCBs by EPA Method 8082, and TAL metals by EPA Method 6000/7000 series. Sampling analytical results will be compared to NYSDEC Part 375 SCOs for Restricted Residential Use; material exceeding these SCOs will not be imported to the Site for use as backfill.

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this RAWP prior to receipt at the Site.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site. Any imported off-Site backfill material will be clean and free of debris, cinders, combustibles, wood, roots, and any staining or odors.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

All imported soils will meet NYSDEC approved backfill objectives for this Site listed in Table 9. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this Remedial Action Work Plan should be construed as an approval for this purpose.

Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported material will be staged separately from excavated on-Site material.

5.4.10 Storm-water Pollution Prevention

The insulation removal area is indoors; as such, a SWPPP is not required. If material storage is planned outdoors, appropriate erosion control measures will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs will be made immediately.

5.4.11 Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation, sampling will be performed on product, sediment and surrounding soils. Chemical analytical work will be for full scan parameters (TAL metals; TCL VOCs and SVOCs, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. These findings will be also included in daily and periodic electronic media reports.

5.4.12 Community Air Monitoring Plan

Community air monitoring will be performed at the perimeter of the work area(s) during intrusive work (excavation). Community air monitoring will be performed periodically (at a minimum once per hour) on a roving basis around any active work area(s). Work areas may include the following: inside the building around the outside of the isolation enclosure, the negative pressure exhaust point, and/or any stockpile/staging areas outside of the enclosure. VOC and particulate monitoring equipment will consist of a photoionization detector (PID) capable of detecting the VOCs found in the insulation material and the underlying soil and groundwater and real-time aerosol or particulate monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM_{10}). VOC monitoring equipment will be calibrated, and the particulate monitoring equipment zeroed, on a daily basis and documented in a dedicated field log book. Both VOC and particulate monitoring equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the prescribed action levels.

If VOC monitoring results in the ambient air concentration of total organic vapors in excess of 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 below 5 ppm over background, work activities can resume with measures taken to reduce vapors and continue monitoring. If total organic vapor levels persist at levels in excess of 5 ppm over background, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. If the organic vapor level is repeatedly over 25 ppm above background, activities will be shut down and the engineering controls and the Site work plan re-evaluated.

If particulate monitoring results a 15-minute average concentration measurement that is between 100 $\mu g/m^3$ and 150 $\mu g/m^3$ above the background level, additional dust suppression techniques will be implemented to reduce the generation of fugitive dust and corrective action taken to protect Site personnel and reduce the potential for contaminant migration. Should dust suppression measures being utilized not lower particulates to an acceptable level (e.g., below 150 $\mu g/m^3$ above the background level, and no visible dust from the work area), work will be suspended until appropriate corrective measures are implemented to remedy the situation.

Details regarding work zone and community air monitoring are outlined in the CAMP attached as Appendix E.

Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report discussed in Section 4.4.1.

5.4.13 Odor, Dust and Nuisance Control Plan

The majority of dust and nuisance odors which may be produced during excavation will be controlled by using negative pressure containment (see Section 4.3.1) and additional measures are specified in the following subsections. Monitoring using a PID for VOCs, particulate monitor, and olfactory inspection for odors will be performed outside the negative pressure containment regularly throughout the remediation.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan."

5.4.13.1. Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site. Specific odor control methods to be used on a routine basis will include periodic walk-around monitoring to observe perceptible odor that may be a nuisance to nearby sensitive receptors. 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. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Owner's Remedial Engineer, who is responsible for certifying the Final Engineering Report.

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

5.4.13.2. Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-Site water source for dust produced by insulation removal. The water source will be equipped with a hose capable of spraying water directly onto excavations and staging areas.
- Due to the Site being within a building and within a negative pressure enclosure, minimal amounts of dust will be produced due to exposed soil and truck traffic.

5.4.13.3. Other Nuisances

A plan for rodent control is currently in place and will remain in place during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to NYCDEP noise control standards.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

Since residual contaminated insulation material will exist beneath the Site after Phase 1 of the remedy is complete, Engineering and Institutional Controls (ECs and ICs) are required to protect human health and the environment. These ECs and ICs are described hereafter. Long-term management of EC/ICs and of residual contamination will be executed under a Site specific Site Management Plan (SMP) that will be developed as part of the RAWP for Phase 2 and included in the FER.

ECs will be implemented to protect public health and the environment by appropriately managing residual contamination. The Controlled Property (the Site) will have one primary EC system under the RAWP for Phase 1: (1) a composite cover system consisting of asphalt covered roads, concrete covered sidewalks, or concrete building slabs. Additional engineering controls are anticipated under the RAWP for Phase 2 of the remediation.

The FER will report residual contamination on the Site in tabular and map form.

7.0 ENGINEERING CONTROLS: COMPOSITE COVER SYSTEM

7.1 COMPOSITE COVER SYSTEM

A composite cover system composed of concrete is currently in place across the entire Site. Exposure to residual contaminated insulation material will be prevented by an engineered, composite cover system composed of replacing the concrete where removed. The remedial activities included in this Phase 1 RAWP consist of the excavation and removal of sub-slab insulation over an approximate 1,000-square foot area. Following excavation, the cover system in the remediated area will consist of a 15-mil vapor barrier installed at the base of the excavation and up the sidewalls, backfill with clean material, and restoration of the surficial concrete using minimum 6-inch thick concrete reinforced with 6 by 6-inch wire mesh.

A Soil Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite 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 FER.

8.0 INSTITUTIONAL CONTROLS

After the remedy is complete, the Site will have residual contamination remaining in place. Engineering Controls (ECs) for the residual contamination have been incorporated into the remedy to render the overall Site remedy protective of public health and the environment. Institutional controls will be implemented for long-term management of the Site and to prevent future exposure to any residual contamination. An environmental easement will be recorded for the Site to implement the controls. The Site Management Plan (SMP) will specify maintenance of the Site cover, future soil and insulation handling requirements, operation and maintenance procedures, and land use restrictions. Periodic inspection and reporting will be required under the SMP to verify that the restrictions and requirements included in the easement remain in-place and effective. The Environmental Easement and a Site Management Plan will be specified in the RAWP for Phase 2 and implemented as part of subsequent remedial activities.

9.0 FINAL ENGINEERING REPORT

An FER will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP and the forthcoming RAWP for Phase 2 of the remediation. The FER provides the documentation that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will be prepared in conformance with DER-10.

The FER will include the following:

- A comprehensive account of the locations and characteristics of all material removed from the Site including the surveyed map(s) of all sources.
- As-built drawings for all constructed elements, certifications, manifests, bills of lading as well as the complete Site Management Plan (formerly the Operation and Maintenance Plan).
- A description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents.
- A 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 demonstrating that all mitigation and remedial systems are functioning properly.
- Written and photographic documentation of all remedial work performed under this remedy.
- An itemized tabular description of actual costs incurred during all aspects of the Remedial Action.
- A thorough summary of all residual contamination left on the Site after the remedy is complete. Residual contamination includes all sub-slab insulation material with PCE concentrations greater than 5 mg/kg. A table that shows such exceedances for insulation material remaining at the Site after the Remedial Action and a map that shows these locations will be included in the FER.
- An accounting of the destination of all material removed from the Site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material will also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the Site.

Before approval of a FER, all project reports will be submitted in digital form on electronic media (PDF).

9.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the Final Engineering Report. The certification will be signed by the Remedial Engineer who is a Professional Engineer registered in New York State This certification will be appropriately signed and stamped. The certification will include the following statements:

> I, ________________________, 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 2350 Fifth Avenue, New York Site (NYSDEC Site No. 2-31-004).
>
> I certify that the Site description presented in this FER is identical to the Site descriptions presented in the Environmental Easement, the Site Management Plan, and the Consent Order dated July 22, 2011 for the Site.

I certify that the Remedial Action Work Plans dated [month day year] and Stipulations [if any] in a letter dated [month day year] and approved by the NYSDEC were implemented and that all requirements in those documents have been substantively complied with.

I certify that the remedial activities were observed by qualified environmental professionals under my supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and all operation and maintenance requirements applicable to the Site are contained in an Environmental Easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded. A Site Management Plan has been submitted by the Owner for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the NYSDEC.

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

I certify that all import of soils from off-Site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plans.

I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology and soil screening methodology defined in the Remedial Action Work Plans.

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.

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.

10.0 SCHEDULE

Estimated dates for performance of remedial action work and deliverables are provided below:

Description	Time from DEC Approval of RAWP for Phase 1
Implementation of RAWP for Phase 1 of Remediation	
Contractor Procurement	1 month
Site Preparation	2 months
Material Removal and Backfilling	3 months

Description	Time from DEC Approval of PRDWP
Implementation of Pre-Remedial Design Work	2-4 months
RAWP for Phase 2 of Remediation	5-7 months

The actual schedule may differ depending on such factors as contractor availability, Site constraints, complexity of data collected, and on-Site and off-Site access coordination. NYSDEC Project Manager will be notified of changes to the schedule. The schedule for the implementation of the Phase 2 remedial work, Site Management Plan, and Final Engineering Report will be outlined in the RAWP for Phase 2.

TABLES

Tables 1-10
2350 Fifth Avenue
New York, NY
Notes

GENERAL

NS : No standard listed

ND : No Detect

NA : Not analyzed

U : The analyte was not detected at the indicated concentration

SB : Site Background

J : Estimated Value, below quantification limit

B : Compound found in the blank

D : Value from sample run at a secondary dilution

M : Manually intergrated compound

M1 : Matrix interference due to coelution with a non-target compound; results may be biased high.

E : Estimated value because of interference

H : Sample was analyzed after specified hold time

b.g.s. : Below ground surface

Exceedences of Standards, Criteria, and Guidance (SCGs) are highlighted in bold font.

SOIL (Table 4)

NYSDEC Part 375 SCO for Unrestricted Use Soil Cleanup Objectives (SCOs) for unrestricted use listed in New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6.5

mg/kg : milligrams per kilogram = parts per million (ppm)

B : Result is less than the reporting CRDL/reporting limit, but greater than or equal to the instrument detection limit/method detection limit

H : Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit

GROUNDWATER (Table 5)

NYSDEC Class GA Standard : New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

µg/L : micrograms per liter = parts per billion (ppb)

SOIL VAPOR (Table 6)

NOTE : There is no standard to evaluate soil vapor on its own; however soil vapor is evaluated in conjunction with Indoor air data in NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

µg/m³ : micrograms per cubic meter of air

GC/MS Gas Chromatography/Mass Spectrometry

Table 1a
2350 Fifth Avenue
New York, NY
Soil Boring Installation Details

Soil Boring ID	Completion Depth (feet b.g.s.)	Completion Date	Location Description
SB-1	30	12/14/2007	Cafeteria-N
SB-2	24	12/15/2007	Cafeteria-W
SB-3	BORING ABANDONED DUE TO MULTIPLE REFUSALS		
SB-4	20	12/18/2007	Outside Rm. 119
SB-5	20	12/18/2007	Outside Rm. 125
SB-6	24	3/21/2008	Corridor 132
SB-7	20	1/11/2008	Locker Area - SW
SB-8	20	1/11/2008	Locker Area – SW
SB-9	20	1/11/2008	Locker Area – SE
SB-10	20	1/11/2008	Locker Area – SE
SB-11	SOIL BORING REFUSAL AT 4' b.g.s. AFTER 3 ATTEMPTS		
SB-12	24	1/11/2008	Locker Area – Center
SB-13	24	1/11/2008	Locker Area -E
SB-14	20	1/10/2008	Locker Area – Center
SB-15	20	1/10/2008	Locker Area – NE
SB-16	8	1/11/2008	142nd St. Loading Dock
SB-17	3 REFUSALS, BORING ABANDONNED		
SB-18	24	1/10/2008	Locker Area – NW
SB-19	20	1/10/2008	Locker Area - N
SB-20	20	1/10/2008	Locker Area – N
SB-21	20	1/10/2008	Locker Area – NE
SB-22	20	12/10/2007	142nd St. Sidewalk
SB-23	20	12/10/2007	142nd St. Sidewalk
SB-24	20	12/10/2007	141st St. Loading Dock
SB-25	20	12/10/2007	141st St. Loading Dock
SB-26	21	12/13/2007	Corridor 150/Rm. 148
SB-27	21	12/13/2007	Outside Rm. 152
SB-28	26	12/14/2007	Inside Rm. 141
SB-29	21	12/13/2007	Outside Rm. 156
SB-30	24	12/13/2007	Btw Rms. 131 and 133
SB-31	21	12/13/2007	Outside Rm. 107
SB-32	16	3/20/2008	East of Rm. 112
SB-33	16.3	12/9/2009	Outside Rm. 119
SB-34	4.5	12/10/2009	142nd St. Sidewalk
SB-34 Attempt 2	15	12/11/2009	142nd St. Sidewalk
SB-35	20	12/11/2009	142nd St. Sidewalk
SB-36	15	12/11/2009	142nd St. Sidewalk
SB-37	15.25	12/29/2009	Locker Area – NE
SB-38	9	12/29/2009	Locker Area – E
SB-39	15.3	12/29/2009	Locker Area – SE
SB-40	15.25	12/29/2009	Kitchen

Table 1b
2350 Fifth Avenue
New York, NY
Shallow Sub-Slab Core Installation Details

Coring ID	Completion Depth (feet b.g.s.)	Completion Date	Location Description
C-30	3.5	12/1/2009	Kitchen – NW
C-31	6	11/30/2009	Kitchen - Center
C-32	3	11/30/2009	Kitchen – S
C-33	6	12/1/2009	Outside Rm. 119
C-34	6	12/1/2009	Btw Rms. 120 and 129
C-35	3	12/2/2009	Cafeteria – SE
C-36	3.5	12/2/2009	Cafeteria – NE
C-37	2	12/3/2009	Cafeteria – SW
C-38	3.5	12/3/2009	Inside Room 143
C-39	2.5	12/4/2009	Cafeteria – NW
C-40	3	12/4/2009	Btw Cafeteria/Rm. 143
C-41	2.5	12/4/2009	Btw Cafeteria/Rm. 141
C-42A	3.5	12/8/2009	Inside Rm. 119
C-42B	3.5	12/9/2009	Inside Rm. 118
C-43	2	12/9/2009	Outside Rm. 118
C-44	3	12/7/2009	Inside Rm. 141

Table 1c

2350 Fifth Avenue

New York, NY

Groundwater Monitoring Well Installation Details

Monitoring Well	Screened Interval (feet b.g.s.)	Completion Date	Location Description
M-1	10-18	1/22/1998	Northwest Adjacent Parking Lot
M-2	10-20	1/22/1998	Storage Locker Area (On-Site, Northwest)
M-3s	12-22	1/22/1998	Inside Locker 1454 (On-Site, Northwest)
M-3d	16-21	3/24/2008	Inside 142^{nd} St. Loading Dock (On-Site, Northwest)
M-4s	10-18	1/22/1998	141st St. Sidewalk
M-4d	19-24	10/15/2007	141^{st} St. Sidewalk
M-5s	10-18	1/22/1998	5th Ave. Sidewalk- S
M-5d	19-24	10/17/2007	5^{th} Ave. Sidewalk- S
M-6s	10-20	1/23/1998	5th Ave. Sidewalk- N
M-6d	29-34	10/17/2007	5^{th} Ave. Sidewalk- N
M-7	5-20	4/8/2002	142nd Street Sidewalk (North Side)
M-8	5-20	4/8/2002	142nd Street Sidewalk (North Side)
M-9s	6.5-11.5	10/20/2006	143rd Street Sidewalk (South Side)
M-9d	15-20	10/20/2006	143rd Street Sidewalk (South Side)
M-10s	7.5-12.5	10/19/2006	143rd Street Sidewalk (South Side)
M-10d	21-26	10/19/2006	143rd Street Sidewalk (South Side)
M-11s	7-12	10/24/2007	142^{nd} Street Sidewalk
M-11d	14-19	10/24/2007	142^{nd} Street Sidewalk
M-12s	11-16	10/23/2007	142^{nd} Street Sidewalk
M-12d	27-32	10/22/2007	142^{nd} Street Sidewalk
M-13s	9-14	10/19/2007	Chisum Place Sidewalk
M-13d	15-20	10/19/2007	Chisum Place Sidewalk
M-14s	4-9	10/23/2009	North Adjacent Property
M-14d	21-31	10/23/2009	North Adjacent Property

Table 1d
2350 Fifth Avenue
New York, NY
Soil Vapor Monitoring Point Installation Details

Soil Vapor Point	Screened Interval (feet b.g.s.)	Date Instaled	Location
SG-1	5.6-6'	8/3/2006	Off-site, on West 143rd St sidewalk
SG-2	5.6-6'	8/3/2006	Off-site, on West 143rd St sidewalk
SG-3	5.6-6'	8/3/2006	Off-site, across West 142nd Street
SG-4	5.6-6'	8/3/2006	Off-site, across West 142nd Street
SG-5	5.6-6'	8/3/2006	Off-site, across West 142nd Street
SG-6	5.5-6'	2008	On-site, in storage locker room
SG-7	5.5-6'	2008	On-site, on 142nd Street sidewalk
SG-8	5.5-6'	2008	On-site, in storage building
SG-9	5.5-6'	2008	On-site, in storage building
SG-10	5.5-6'	2008	On-site, in storage building
SG-11	5.5-6'	2008	On-site, in storage building
SG-12	5.5-6'	2008	On-site, in storage building
SG-13	5.5-6'	2008	On-site, in south loading dock
SG-14	5.5-6'	2008	On-site, in south loading dock
SG-14a	5'-10'	Apr-May 2009	On-site, in north loading dock
SG-15	3.5'-8.5'	Apr-May 2009	On-site, in north loading dock
SG-16S	1.4'-2.4' (17"-29")	Apr-May 2009	On-site, in storage locker room
SG-16D	9.5'-10'	Apr-May 2009	On-site, in storage locker room
SG-17S	1'-2' (12"-24")	Apr-May 2009	On-site, in storage locker room
SG-17D	9.5'-10'	Apr-May 2009	On-site, in storage locker room
SG-18S	0.3'-0.8' (3.5"-10")	Apr-May 2009	On-site, in Room 118
SG-18I	1.3'-1.7' (16"-20.5")	Apr-May 2009	On-site, in Room 118
SG-18D	4.5'-9.5'	Apr-May 2009	On-site, in Room 118
SG-19S	0.4'-1' (5"-12")	Apr-May 2009	On-site, in Room 118
SG-19I	1.3'-1.6' (15"-19")	Apr-May 2009	On-site, in Room 118
SG-19D	9.5'-10'	Apr-May 2009	On-site, in Room 118
SG-20S	0.4'-0.7' (5"-8")	Apr-May 2009	On-site, in hallway outside Room 118
SG-20D	3.5'-8.5'	Apr-May 2009	On-site, in hallway outside Room 118
SG-21S	1.5'-4.5'	Apr-May 2009	On-site, in hallway outside Room 114
SG-21	3.5-4'	Dec-09	Off-site, across West 142nd Street
SG-22	3.5-4'	Dec-09	Off-site, across Fifth Avenue
SG-23	3.5-4'	Dec-09	Off-site, across Fifth Avenue
SG-24	3.5-4'	Dec-09	Off-site, across Fifth Avenue
SG-25	3.5-4'	Dec-09	Off-site, across West 141st Street
SG-26	3.5-4'	Dec-09	Off-site, across West 141st Street
SG-27	3.5-4'	Dec-09	Off-site, across West 141st Street
SG-28	3.5-4'	Dec-09	Off-site, across West 141st Street
SG-29	3.5-4'	Dec-09	Off-site, across Chisum Place
SG-30	3.5-4'	Dec-09	Off-site, across Chisum Place
SG-31	3.5-4'	Dec-09	Off-site, across Chisum Place
SG-32	3.5-4'	Dec-09	Off-site, inside armory across West 142nd Street
SG-33	3.5-4'	Dec-09	Off-site, inside armory across West 142nd Street
SG-34	3.5-4'	Dec-09	Off-site, inside armory across West 142nd Street
SVE-1	4'-8'	Apr-May 2009	On-site, in north loading dock
SVE-2	4'-12'	Apr-May 2009	On-site, in hallway outside Room 118

Table 2a
2350 Fifth Avenue
New York, NY
Chemical Analysis of Sampled Media - Soil

Sample ID	Collection Date	Sample Matrix	Analysis
M-7(10-12')	3/26/2002	Soil	VOCs (8260)
M-7D(10-12')	3/26/2002	Soil	VOCs (8260)
M-8(10-12')	3/26/2002	Soil	VOCs (8260)
BLIND M-8(10-12')	3/26/2002	Soil	VOCs (8260)
M-11D(10-12')	10/23/2007	Soil	VOCs (8260)
M-11D(12-14')	10/23/2007	Soil	VOCs (8260)
M-12D(10-12')	10/22/2007	Soil	VOCs (8260)
M-12D(14-16')	10/22/2007	Soil	VOCs (8260)
M-14D(0-2.5')	11/23/2009	Soil	VOCs (8260)
M-14D(2.5-5')	11/23/2009	Soil	VOCs (8260)
M-14D(5-7.5')	11/23/2009	Soil	VOCs (8260)
M-14D(7.5-10')	11/23/2009	Soil	VOCs (8260)
M-14D(10-12.5')	11/23/2009	Soil	VOCs (8260)
M-14D(12.5-15')	11/23/2009	Soil	VOCs (8260)
M-14D(15-17.5')	11/23/2009	Soil	VOCs (8260)
M-14D(17.5-20')	11/23/2009	Soil	VOCs (8260)
SB-1 (18'-19')	12/14/2007	Soil	VOCs (8260)
SB-2 (16'-20')	12/17/2007	Soil	VOCs (8260)
SB-2 (21'-22')	12/17/2007	Soil	VOCs (8260)
SB-4 (14'-15')	12/18/2007	Soil	VOCs (8260)
SB-4 (16'-17')	12/18/2007	Soil	VOCs (8260)
SB-5 (15'-16')	12/18/2007	Soil	VOCs (8260)
SB-5 (16'-17')	12/18/2007	Soil	VOCs (8260)
SB-6 (22'-23')	3/21/2008	Soil	VOCs (8260)
SB-7 (15'-16')	1/11/2008	Soil	VOCs (8260)
SB-7 (18'-19')	1/11/2008	Soil	VOCs (8260)
SB-8 (10'-11')	1/11/2008	Soil	VOCs (8260)
SB-8 (15'-16')	1/11/2008	Soil	VOCs (8260)
SB-9 (3'-4')	1/11/2008	Soil	VOCs (8260)
SB-9 (14'-15')	1/11/2008	Soil	VOCs (8260)
SB-10 (8')	1/11/2008	Soil	VOCs (8260)
SB-10 (15')	1/11/2008	Soil	VOCs (8260)
SB-12 (18'-19')	1/11/2008	Soil	VOCs (8260)
SB-12 (20')	1/11/2008	Soil	VOCs (8260)
SB-13 (7'-8')	1/11/2008	Soil	VOCs (8260)
SB-13 (24')	1/11/2008	Soil	VOCs (8260)
SB-14 (12'-13')	1/10/2008	Soil	VOCs (8260)
SB-14 (16.5'-17.5')	1/10/2008	Soil	VOCs (8260)
SB-15 (17')	1/10/2008	Soil	VOCs (8260)
SB-15 (18')	1/10/2008	Soil	VOCs (8260)
SB-16 (7'-8')	1/11/2008	Soil	VOCs (8260)
SB-18 (18'-19')	1/10/2008	Soil	VOCs (8260)
SB-18 (20'-21')	1/10/2008	Soil	VOCs (8260)
SB-19 (16'-17')	1/10/2008	Soil	VOCs (8260)
SB-19 (18')	1/10/2008	Soil	VOCs (8260)
SB-20 (10'-11')	1/10/2008	Soil	VOCs (8260)
SB-20 (12'-13')	1/10/2008	Soil	VOCs (8260)
SB-20 (17'-18')	1/10/2008	Soil	VOCs (8260)

Table 2a
2350 Fifth Avenue
New York, NY
Chemical Analysis of Sampled Media - Soil

Sample ID	Collection Date	Sample Matrix	Analysis
SB-21 (13'-14')	1/11/2008	Soil	VOCs (8260)
SB-21 (16'-17')	1/11/2008	Soil	VOCs (8260)
SB-22 (12'-14')	12/10/2007	Soil	VOCs (8260)
SB-22 (19'-20')	12/10/2007	Soil	VOCs (8260)
SB-23 (14'-15')	12/10/2007	Soil	VOCs (8260)
SB-24 (13'-14')	12/10/2007	Soil	VOCs (8260)
SB-24 (14'-15')	12/10/2007	Soil	VOCs (8260)
SB-25 (5'-6')	12/10/2007	Soil	VOCs (8260)
SB-25 (11'-12')	12/10/2007	Soil	VOCs (8260)
SB-26 (17'-18')	12/13/2007	Soil	VOCs (8260)
SB-27 (19'-20')	12/13/2007	Soil	VOCs (8260)
SB-27 (20'-21')	12/13/2007	Soil	VOCs (8260)
SB-28 (13'-14')	12/13/2007	Soil	VOCs (8260)
SB-28 (20'-21')	12/13/2007	Soil	VOCs (8260)
SB-29 (17'-18')	12/13/2007	Soil	VOCs (8260)
SB-29 (20'-21')	12/13/2007	Soil	VOCs (8260)
SB-30 (17'-18')	12/13/2007	Soil	VOCs (8260)
SB-30 (23'-24')	12/13/2007	Soil	VOCs (8260)
SB-31 (20'-21')	12/13/2007	Soil	VOCs (8260)
SB-32 (3'-4')	3/20/2008	Soil	VOCs (8260)
SB-32 (8'-10')	3/20/2008	Soil	VOCs (8260)
SB-33(0-2')	12/9/2009	Soil	VOCs (8260)
SB-33(2'-4')	12/9/2009	Soil	VOCs (8260)
SB-33(4'-6')	12/9/2009	Soil	VOCs (8260)
SB-33(6'-8')	12/9/2009	Soil	VOCs (8260)
SB-33(8'-10')	12/9/2009	Soil	VOCs (8260)
SB-33(10'-12')	12/9/2009	Soil	VOCs (8260)
SB-33(12'-14')	12/9/2009	Soil	VOCs (8260)
SB-33(14'-16')	12/9/2009	Soil	VOCs (8260)
SB-34(0-2.5')	12/11/2009	Soil	VOCs (8260)
SB-34(2.5'-5')	12/11/2009	Soil	VOCs (8260)
SB-34(5'-7.5')	12/11/2009	Soil	VOCs (8260)
SB-34(7.5'-10')	12/11/2009	Soil	VOCs (8260)
SB-34(10-12.5')	12/11/2009	Soil	VOCs (8260)
SB-34(12.5'-15')	12/11/2009	Soil	VOCs (8260)
SB-34(7.5'-10') DUP	12/11/2009	Soil	VOCs (8260)
SB-35(0-2.5')	12/11/2009	Soil	VOCs (8260)
SB-35(2.5'-5')	12/11/2009	Soil	VOCs (8260)
SB-35(5'-7.5')	12/11/2009	Soil	VOCs (8260)
SB-35(7.5'-10')	12/11/2009	Soil	VOCs (8260)
SB-35(10'-12.5')	12/11/2009	Soil	VOCs (8260)
SB-35(12.5'-15')	12/11/2009	Soil	VOCs (8260)
SB-35(15-17.5')	12/11/2009	Soil	VOCs (8260)
SB-35(17.5'-20')	12/11/2009	Soil	VOCs (8260)
SB-36(0-2.5')	12/11/2009	Soil	VOCs (8260)
SB-36(2.5'-5')	12/11/2009	Soil	VOCs (8260)
SB-36(5'-7.5')	12/11/2009	Soil	VOCs (8260)
SB-36(7.5'-10')	12/11/2009	Soil	VOCs (8260)
SB-36(10'-12.5')	12/11/2009	Soil	VOCs (8260)

Table 2a
2350 Fifth Avenue
New York, NY
Chemical Analysis of Sampled Media - Soil

Sample ID	Collection Date	Sample Matrix	Analysis
SB-36(12.5'-15')	12/11/2009	Soil	VOCs (8260)
SB-37 (1.5-3)	12/29/2009	Soil	VOCs (8260)
SB-37 (4.5-6)	12/29/2009	Soil	VOCs (8260)
SB-37 (6-7.5)	12/29/2009	Soil	VOCs (8260)
SB-37 (7.5-9)	12/29/2009	Soil	VOCs (8260)
SB-37 (9-10.5)	12/29/2009	Soil	VOCs (8260)
SB-37 (10.5-12)	12/29/2009	Soil	VOCs (8260)
SB-37 (12-13.5)	12/29/2009	Soil	VOCs (8260)
SB-37 (13.5-15)	12/29/2009	Soil	VOCs (8260)
SB-38 (1.5-3)	12/29/2009	Soil	VOCs (8260)
SB-38 (3-4.5)	12/29/2009	Soil	VOCs (8260)
SB-38 (4.5-6)	12/29/2009	Soil	VOCs (8260)
SB-38 (6-7.5)	12/29/2009	Soil	VOCs (8260)
SB-38 (7.5-9)	12/29/2009	Soil	VOCs (8260)
SB-39 (0-1.5)	12/29/2009	Soil	VOCs (8260)
SB-39 (1.5-3)	12/29/2009	Soil	VOCs (8260)
SB-39 (3-4.5)	12/29/2009	Soil	VOCs (8260)
SB-39 (4.5-6)	12/29/2009	Soil	VOCs (8260)
SB-39 (6-7.5)	12/29/2009	Soil	VOCs (8260)
SB-39 (7.5-9)	12/29/2009	Soil	VOCs (8260)
SB-39 (9-10.5)	12/29/2009	Soil	VOCs (8260)
SB-39 (10.5-12)	12/29/2009	Soil	VOCs (8260)
SB-39 (12-13.5)	12/29/2009	Soil	VOCs (8260)
SB-39 (13.5-15)	12/29/2009	Soil	VOCs (8260)
SB-40 (0-1.5)	12/29/2009	Soil	VOCs (8260)
SB-40 (3-4.5)	12/29/2009	Soil	VOCs (8260)
SB-40 (4.5-6)	12/29/2009	Soil	VOCs (8260)
SB-40 (6-7.5)	12/29/2009	Soil	VOCs (8260)
SB-40 (7.5-9)	12/29/2009	Soil	VOCs (8260)
SB-40 (9-10.5)	12/29/2009	Soil	VOCs (8260)
SB-40 (10.5-12)	12/29/2009	Soil	VOCs (8260)
SB-40 (12-13.5)	12/29/2009	Soil	VOCs (8260)
SB-40 (13.5-15)	12/29/2009	Soil	VOCs (8260)

Table 2b
2350 Fifth Avenue
New York, NY

Chemical Analysis of Sampled Media - Groundwater

Sample ID	Sampling Dates	Sample Matrix	Analytes												
			Alkalinity	Chloride	Dissolved Iron	Methane	Nitrate	Reduced Fe	Reduced Mn	Sulfate	Sulfide	Total Dissolved Solids	Total Organic Carbon	Total Volatile Solids	VOCs (8260)
M-1	11/7/07, 12/14/09	Groundwater	X			X	X	X	X	X	X				X
M-2	4/8/02, 11/6/07, 12/10/09	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	X
M-3	4/8/02, 11/6/07, 12/14/09	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	X
BLIND (M-3)	4/8/02, 12/14/09	Groundwater		X	X	X	X				X	X	X	X	X
M-3D	4/11/08, 12/14/09	Groundwater	X			X	X	X	X	X	X				X
M-4	11/5/07, 12/11/09	Groundwater													X
M-4D	11/5/07, 12/11/09	Groundwater													X
M-5	11/1/07, 12/10/09	Groundwater													X
M-5D	11/1/07, 12/11/09	Groundwater													X
M-6	11/1/07, 12/10/09	Groundwater													X
M-6D	11/1/07, 12/10/09	Groundwater													X
M-7	4/8/2002, 11/5/07, 12/14/09	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	X
M-8	4/8/2002, 11/6/07, 12/8/09	Groundwater		X	X		X				X	X	X	X	X
M-8D	4/8/02	Groundwater		X	X		X				X	X	X	X	X
M-9S	11/2/07, 12/7/09	Groundwater													X
M-9D	11/2/07, 12/7/09	Groundwater													X
M-10S	11/2/07, 12/3/09	Groundwater													X
M-10D	11/2/07, 12/3/09	Groundwater													X
M-11S	11/6/07, 12/9/09	Groundwater	X			X	X	X	X	X	X				X
M-11D	11/6/07, 12/9/09	Groundwater	X			X	X	X	X	X	X				X
M-12D	11/7/07, 12/9/09	Groundwater	X			X	X	X	X	X	X				X
M-13S	10/31/07, 12/11/09	Groundwater													X
M-13D	10/31/07, 12/11/09	Groundwater													X
M-14S	12/8/09	Groundwater	X			X	X	X	X	X	X				X
M-14D	12/7/09	Groundwater	X			X	X	X	X	X	X				X

Table 2c
2350 Fifth Avenue
New York, NY
Chemical Analysis of Sampled Media - Soil Vapor

Sample ID	Collection Date	Sample Matrix	Analysis
SG-1	8/8/2006	soil vapor	VOCs (TO-15)
SG-2	8/8/2006	soil vapor	VOCs (TO-15)
SG-3	8/8/2006	soil vapor	VOCs (TO-15)
SG-4	8/8/2006	soil vapor	VOCs (TO-15)
SG-5	8/8/2006	soil vapor	VOCs (TO-15)
SG-6	1/18/2008	soil vapor	VOCs (TO-15)
SG-7	1/18/2008	soil vapor	VOCs (TO-15)
SG-8	1/17/2008	soil vapor	VOCs (TO-15)
SG-9	1/17/2008	soil vapor	VOCs (TO-15)
SG-10	1/17/2008	soil vapor	VOCs (TO-15)
SG-11	1/17/2008	soil vapor	VOCs (TO-15)
SG-12	1/17/2008	soil vapor	VOCs (TO-15)
SG-13	1/17/2008	soil vapor	VOCs (TO-15)
SG-14	1/18/2008	soil vapor	VOCs (TO-15)
SG-22	11/30/2009	soil vapor	VOCs (TO-15)
SG-23	11/30/2009	soil vapor	VOCs (TO-15)
SG-24	12/1/2009	soil vapor	VOCs (TO-15)
SG-25	11/30/2009	soil vapor	VOCs (TO-15)
SG-26	11/30/2009	soil vapor	VOCs (TO-15)
SG-27	11/30/2009	soil vapor	VOCs (TO-15)
SG-28	11/30/2009	soil vapor	VOCs (TO-15)
SG-29	11/30/2009	soil vapor	VOCs (TO-15)
SG-30	12/1/2009	soil vapor	VOCs (TO-15)
SG-31	12/1/2009	soil vapor	VOCs (TO-15)
SG-32	11/24/2009	soil vapor	VOCs (TO-15)
SG-33	11/24/2009	soil vapor	VOCs (TO-15)
SG-34	11/24/2009	soil vapor	VOCs (TO-15)

Table 3
2350 Fifth Avenue
New York, NY

Monitoring Well Summary and Groundwater Elevations

Wells	Top of Casing (TOC) (feet elevation)	Depth to Water (feet below TOC)				
		11/14/2006	10/31/2007	4/3/2008	11/6/2009	12/1/2009 to 12/15/2009
M-1	8.39	9.51	9.9	10.06	9.98	9.71
M-2	10.58	12.45	12.74	12.69	12.83	12.47
M-3	10.79	10.33	11.14	11.13	11.13	11.14
M-3d	--	--	--	8.45	8.67	8.49
M-4	7.28	8.57	9.21	9.14	9.2	9.3
M-4d	7.77	--	8.26	8.21	8.5	8.39
M-5	6.37	7.63	8.95	9.65	8.9	7.79
M-5d	6.43	--	15.55	8.26	7.75	8.2
M-6	6.37	7.39	8.12	8.11	8.09	7.47
M-6d	6.38	--	10.05	8.05	7.3	7.12
M-7	7.77	9.7	10.04	10.06	10.08	9.91
M-8	6.96	9.57	9.81	9.85	9.63	9.66
M-9s	7.42	7.2	7.98	8.01	8.14	7.72
M-9d	7.81	7.63	8.43	8.45	8.59	8.47
M-10s	6.26	5.53	4.55	5.62	5.05	3.7
M-10d	7.11	6.82	4.21	8	7.9	8.9
M-11s	7.83	--	10.04	10.01	9.9	9.58
M-11d	7.62	--	8.22	8.15	8.17	8.18
M-12s	7.08	--	9.52	9.81	--	8.66
M-12d	7.01	--	8.96	7.24	8.7	7.71
M-13s	9.93	--	9.88	9.67	10.06	9.78
M-13d	9.97	--	9.88	9.67	10.08	9.78
M-14s	5.49	--	--	--	--	7.49
M-14d	5.46	--	--	--	--	6.32

Notes:

All elevations refer to the Borough of Manhattan Topographical Bureau Datum, which is 2.75 feet above mean sea level at Sandy Hook N.J. as established by the U.S. Coast and Geodetic Survey in 1929.

-- = Data not available (not measured/not accessible).

TOC: Top of casing.

Table 3
2350 Fifth Avenue
New York, NY
Monitoring Well Summary and Groundwater Elevations

Wells	Top of Casing (TOC) (feet elevation)	Water Table Elevation (feet elevation)				
		11/14/2006	10/31/2007	4/3/2008	11/6/2009	12/1/2009 to 12/15/2009
M-1	8.39	-1.12	-1.51	-1.67	-1.59	-1.32
M-2	10.58	-1.87	-2.16	-2.11	-2.25	-1.89
M-3	10.79	0.46	-0.35	-0.34	-0.34	-0.35
M-3d	--	--	--	--	--	--
M-4	7.28	-1.29	-1.93	-1.86	-1.92	-2.02
M-4d	7.77	--	-0.49	-0.44	-0.73	-0.62
M-5	6.37	-1.26	-2.58	-3.28	-2.53	-1.42
M-5d	6.43	--	-9.12	-1.83	-1.32	-1.77
M-6	6.37	-1.02	-1.75	-1.74	-1.72	-1.1
M-6d	6.38	--	-3.67	-1.67	-0.92	-0.74
M-7	7.77	-1.93	-2.27	-2.29	-2.31	-2.14
M-8	6.96	-2.61	-2.85	-2.89	-2.67	-2.7
M-9s	7.42	0.22	-0.56	-0.59	-0.72	-0.3
M-9d	7.81	0.18	-0.62	-0.64	-0.78	-0.66
M-10s	6.26	0.73	1.71	0.64	1.21	2.56
M-10d	7.11	0.29	2.9	-0.89	-0.79	-1.79
M-11s	7.83	--	-2.21	-2.18	-2.07	-1.75
M-11d	7.62	--	-0.6	-0.53	-0.55	-0.56
M-12s	7.08	--	-2.44	-2.73	--	-1.58
M-12d	7.01	--	-1.95	-0.23	-1.69	-0.7
M-13s	9.93	--	0.05	0.26	-0.13	0.15
M-13d	9.97	--	0.09	0.3	-0.11	0.19
M-14s	5.49	--	--	--	--	-2
M-14d	5.46	--	--	--	--	-0.86

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-1 (18'-19') L0718726-18 12/14/2007	SB-2 (16'-20') L0718966-01 12/17/2007	SB-2 (21'-22') L0718966-02 12/17/2007	SB-4 (14'-15') L0718966-03 12/18/2007	SB-4 (16'-17') L0718966-04 12/18/2007	SB-5 (15'-16') L0718966-06 12/18/2007	SB-5 (16'-17') L0718966-05 12/18/2007
1,1,1,2-Tetrachloroethane	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,1,1-Trichloroethane	0.68	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,1,2,2-Tetrachloroethane	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,1,2-Trichloroethane	NS	0.0045 U	0.0048 U	0.0049 U	0.0058 U	0.0045 U	0.0065 U	0.0046 U
1,1-Dichloroethane	0.27	0.0045 U	0.0048 U	0.0049 U	0.0058 U	0.0045 U	0.0065 U	0.0046 U
1,1-Dichloroethene	0.33	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,1-Dichloropropene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2,3-Trichlorobenzene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2,4,5-Tetramethylbenzene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,2,4-Trichlorobenzene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2,4-Trimethylbenzene	3.6	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2-Dibromoethane	NS	0.012 U	0.013 U	0.013 U	0.015 U	0.012 U	0.017 U	0.012 U
1,2-Dichlorobenzene	1.1	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,2-Dichloroethane	0.02	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
1,2-Dichloropropane	NS	0.01 U	0.011 U	0.012 U	0.013 U	0.01 U	0.015 U	0.011 U
1,3,5-Trimethylbenzene	8.4	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,3-Dichlorobenzene	2.4	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,3-Dichloropropane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,4-Dichlorobenzene	1.8	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
1,4-Diethylbenzene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
2,2-Dichloropropane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
2-Butanone	0.12	0.03 U	0.032 U	0.033 U	0.072	0.03 U	0.043 U	0.031 U
2-Hexanone	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
4-Ethyltoluene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
4-Methyl-2-pentanone	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
Acetone	0.05	0.03 U	**0.076**	0.033 U	**0.41**	0.03 U	**0.31**	0.031 U
Benzene	0.06	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Bromobenzene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
Bromochloromethane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
Bromodichloromethane	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Bromoform	NS	0.012 U	0.013 U	0.013 U	0.015 U	0.012 U	0.017 U	0.012 U
Bromomethane	NS	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
Carbon disulfide	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
Carbon tetrachloride	0.76	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Chlorobenzene	1.1	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Chloroethane	NS	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
Chloroform	0.37	0.0045 U	0.0048 U	0.0049 U	0.0058 U	0.0045 U	0.0065 U	0.0046 U
Chloromethane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
cis-1,2-Dichloroethene	0.25	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
cis-1,3-Dichloropropene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Dibromochloromethane	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Dibromomethane	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
Dichlorodifluoromethane	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
Ethylbenzene	1	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Hexachlorobutadiene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
Isopropylbenzene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Methyl tert butyl ether	0.93	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
Methylene chloride	0.05	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
n-Butylbenzene	12	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
n-Propylbenzene	3.9	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Naphthalene	12	0.015 U	0.016 U	0.017	0.019 U	0.015 U	0.022 U	0.015 U
o-Chlorotoluene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
o-Xylene	1.6	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
p-Chlorotoluene	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
p-Isopropyltoluene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
p/m-Xylene	1.6	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
sec-Butylbenzene	11	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Styrene	NS	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
tert-Butylbenzene	5.9	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
Tetrachloroethene	1.3	0.003 U	0.0037	0.0052	0.0038 U	0.0081	0.0043 U	0.0031 U
Toluene	0.7	0.0045 U	0.0048 U	0.0049 U	0.0058 U	0.0045 U	0.0065 U	0.0046 U
trans-1,2-Dichloroethene	0.19	0.0045 U	0.0048 U	0.0049 U	0.0058 U	0.0045 U	0.0065 U	0.0046 U
trans-1,3-Dichloropropene	NS	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Trichloroethene	0.47	0.003 U	0.0032 U	0.0033 U	0.0038 U	0.003 U	0.0043 U	0.0031 U
Trichlorofluoromethane	NS	0.015 U	0.016 U	0.016 U	0.019 U	0.015 U	0.022 U	0.015 U
Vinyl acetate	NS	0.03 U	0.032 U	0.033 U	0.038 U	0.03 U	0.043 U	0.031 U
Vinyl chloride	0.02	0.006 U	0.0064 U	0.0066 U	0.0077 U	0.006 U	0.0086 U	0.0062 U
Xylenes, Total	1.6	0.012 U	0.0128 U	0.0132 U	0.0154 U	0.012 U	0.0172 U	0.0124 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-6 (22'-23') L0804083-03 3/21/2008	SB-7 (15'-16') L0800656-18 1/11/2008	SB-7 (18'-19') L0800656-17 1/11/2008	SB-8 (10'-11') L0800656-28 1/11/2008	SB-8 (15'-16') L0800656-27 1/11/2008	SB-9 (3'-4') L0800656-20 1/11/2008	SB-9 (14'-15') L0800656-19 1/11/2008
1,1,1,2-Tetrachloroethane	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,1,1-Trichloroethane	0.68	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,1,2,2-Tetrachloroethane	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,1,2-Trichloroethane	NS	0.0043 U	0.0052 U	0.0044 U	0.0042 U	0.011 U	0.0044 U	0.0046 U
1,1-Dichloroethane	0.27	0.0043 U	0.0052 U	0.0044 U	0.0042 U	0.011 U	0.0044 U	0.0046 U
1,1-Dichloroethene	0.33	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,1-Dichloropropene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2,3-Trichlorobenzene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2,4,5-Tetramethylbenzene	NS	0.0028 U	0.0035 U	0.02	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,2,4-Trichlorobenzene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2,4-Trimethylbenzene	3.6	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2-Dibromoethane	NS	0.011 U	0.014 U	0.012 U	0.011 U	0.03 U	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,2-Dichloroethane	0.02	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
1,2-Dichloropropane	NS	0.0099 U	0.012 U	0.01 U	0.0097 U	0.026 U	0.01 U	0.011 U
1,3,5-Trimethylbenzene	8.4	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,3-Dichlorobenzene	2.4	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,3-Dichloropropane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,4-Dichlorobenzene	1.8	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
1,4-Diethylbenzene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
2,2-Dichloropropane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
2-Butanone	0.12	0.028 U	0.082	0.029 U	0.028 U	**0.13**	0.029 U	0.03 U
2-Hexanone	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
4-Ethyltoluene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
4-Methyl-2-pentanone	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
Acetone	0.05	**0.054**	**0.44**	0.045	0.028 U	**0.94**	0.029 U	**0.053**
Benzene	0.06	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Bromobenzene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
Bromochloromethane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
Bromodichloromethane	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Bromoform	NS	0.011 U	0.014 U	0.012 U	0.011 U	0.03 U	0.012 U	0.012 U
Bromomethane	NS	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
Carbon disulfide	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
Carbon tetrachloride	0.76	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Chlorobenzene	1.1	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Chloroethane	NS	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
Chloroform	0.37	0.0043 U	0.0052 U	0.0044 U	0.0042 U	0.011 U	0.0044 U	0.0046 U
Chloromethane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
cis-1,2-Dichloroethene	0.25	0.0028 U	0.0035 U	0.0029 U	0.0092	0.0075 U	0.0081	0.014
cis-1,3-Dichloropropene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Dibromochloromethane	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Dibromomethane	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
Dichlorodifluoromethane	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
Ethylbenzene	1	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Hexachlorobutadiene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
Isopropylbenzene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Methyl tert butyl ether	0.93	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
Methylene chloride	0.05	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
n-Butylbenzene	12	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
n-Propylbenzene	3.9	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Naphthalene	12	0.022	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
o-Chlorotoluene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
o-Xylene	1.6	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
p-Chlorotoluene	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
p-Isopropyltoluene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
p/m-Xylene	1.6	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
sec-Butylbenzene	11	0.0028 U	0.0035 U	0.0065	0.0028 U	0.0075 U	0.0029 U	0.003 U
Styrene	NS	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
tert-Butylbenzene	5.9	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
Tetrachloroethene	1.3	0.0028 U	0.0035 U	0.0037	0.027	0.0075 U	0.27	0.24
Toluene	0.7	0.0043 U	0.0052 U	0.0044 U	0.0042 U	0.011 U	0.0044 U	0.0046 U
trans-1,2-Dichloroethene	0.19	0.0043 U	0.0052 U	0.0044 U	0.0042 U	0.011 U	0.0044 U	0.0046 U
trans-1,3-Dichloropropene	NS	0.0028 U	0.0035 U	0.0029 U	0.0028 U	0.0075 U	0.0029 U	0.003 U
Trichloroethene	0.47	0.0028 U	0.0035 U	0.0029 U	0.022	0.0075 U	0.042	0.066
Trichlorofluoromethane	NS	0.014 U	0.017 U	0.015 U	0.014 U	0.037 U	0.015 U	0.015 U
Vinyl acetate	NS	0.028 U	0.035 U	0.029 U	0.028 U	0.075 U	0.029 U	0.03 U
Vinyl chloride	0.02	0.0057 U	0.0069 U	0.0059 U	0.0056 U	0.015 U	0.0059 U	0.0061 U
Xylenes, Total	1.6	0.0114 U	0.0138 U	0.0118 U	0.0112 U	0.03 U	0.0118 U	0.0122 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-10 (8') L0800656-25 1/11/2008	SB-10 (15') L0800656-26 1/11/2008	SB-12 (18'-19') L0800656-22 1/11/2008	SB-12 (20') L0800656-21 1/11/2008	SB-13 (7'-8') L0800656-15 1/11/2008	SB-13 (24') L0800656-13 1/11/2008	SB-14 (12'-13') L0800656-12 1/10/2008
1,1,1,2-Tetrachloroethane	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,1,1-Trichloroethane	0.68	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,1,2,2-Tetrachloroethane	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,1,2-Trichloroethane	NS	0.0043 U	0.016 U	0.0045 U	0.0045 U	0.0043 U	0.0039 U	0.0042 U
1,1-Dichloroethane	0.27	0.0043 U	0.016 U	0.0045 U	0.0045 U	0.0043 U	0.0039 U	0.0042 U
1,1-Dichloroethene	0.33	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,1-Dichloropropene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2,3-Trichlorobenzene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2,4,5-Tetramethylbenzene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,2,4-Trichlorobenzene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2,4-Trimethylbenzene	3.6	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2-Dibromo-3-chloropropane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2-Dibromoethane	NS	0.011 U	0.042 U	0.012 U	0.012 U	0.011 U	0.01 U	0.011 U
1,2-Dichlorobenzene	1.1	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,2-Dichloroethane	0.02	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
1,2-Dichloropropane	NS	0.0099 U	0.037 U	0.01 U	0.01 U	0.0099 U	0.0092 U	0.0098 U
1,3,5-Trimethylbenzene	8.4	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,3-Dichlorobenzene	2.4	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,3-Dichloropropane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,4-Dichlorobenzene	1.8	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
1,4-Diethylbenzene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
2,2-Dichloropropane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
2-Butanone	0.12	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
2-Hexanone	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
4-Ethyltoluene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
4-Methyl-2-pentanone	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
Acetone	0.05	0.028 U	0.11 U	**0.068**	0.03 U	0.028 U	0.026 U	0.028 U
Benzene	0.06	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Bromobenzene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
Bromochloromethane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
Bromodichloromethane	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Bromoform	NS	0.011 U	0.042 U	0.012 U	0.012 U	0.011 U	0.01 U	0.011 U
Bromomethane	NS	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
Carbon disulfide	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
Carbon tetrachloride	0.76	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Chlorobenzene	1.1	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Chloroethane	NS	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
Chloroform	0.37	0.0043 U	0.016 U	0.0045 U	0.0045 U	0.0043 U	0.0039 U	0.0042 U
Chloromethane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
cis-1,2-Dichloroethene	0.25	**0.3**	0.011 U	0.003 U	0.003 U	0.027	0.071	0.0028 U
cis-1,3-Dichloropropene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Dibromochloromethane	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Dibromomethane	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
Dichlorodifluoromethane	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
Ethylbenzene	1	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Hexachlorobutadiene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
Isopropylbenzene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Methyl tert butyl ether	0.93	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
Methylene chloride	0.05	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
n-Butylbenzene	12	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
n-Propylbenzene	3.9	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Naphthalene	12	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
o-Chlorotoluene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
o-Xylene	1.6	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
p-Chlorotoluene	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
p-Isopropyltoluene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
p/m-Xylene	1.6	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
sec-Butylbenzene	11	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Styrene	NS	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.0053 U	0.0056 U
tert-Butylbenzene	5.9	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
Tetrachloroethene	1.3	**27**	0.76	0.066	0.003 U	0.38	0.38	0.0095
Toluene	0.7	0.0043 U	0.016 U	0.0045 U	0.0045 U	0.0043 U	0.0039 U	0.0042 U
trans-1,2-Dichloroethene	0.19	0.0043 U	0.016 U	0.0045 U	0.0045 U	0.0043 U	0.0039 U	0.0042 U
trans-1,3-Dichloropropene	NS	0.0028 U	0.011 U	0.003 U	0.003 U	0.0028 U	0.0026 U	0.0028 U
Trichloroethene	0.47	0.32	0.017	0.003 U	0.003 U	0.063	0.063	0.0028 U
Trichlorofluoromethane	NS	0.014 U	0.053 U	0.015 U	0.015 U	0.014 U	0.013 U	0.014 U
Vinyl acetate	NS	0.028 U	0.11 U	0.03 U	0.03 U	0.028 U	0.026 U	0.028 U
Vinyl chloride	0.02	0.0057 U	0.021 U	0.006 U	0.006 U	0.0057 U	0.012	0.0056 U
Xylenes, Total	1.6	0.0114 U	0.0114 U	0.012 U	0.012 U	0.0114 U	0.0106 U	0.0112 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-14 (16.5'-17.5') L0800656-11 1/10/2008	SB-15 (17') L0800656-16 1/10/2008	SB-15 (18') L0800656-14 1/10/2008	SB-16 (7'-8') L0800656-10 1/11/2008	SB-18 (18'-19') L0800656-07 1/10/2008	SB-18 (20'-21') L0800656-08 1/10/2008	SB-19 (16'-17') L0800656-06 1/10/2008
1,1,1,2-Tetrachloroethane	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,1,1-Trichloroethane	0.68	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,1,2,2-Tetrachloroethane	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,1,2-Trichloroethane	NS	0.0047 U	0.0079 U	0.0045 U	0.0046 U	0.0044 U	0.0047 U	0.0046 U
1,1-Dichloroethane	0.27	0.0047 U	0.0079 U	0.0045 U	0.0046 U	0.0044 U	0.0047 U	0.0046 U
1,1-Dichloroethene	0.33	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,1-Dichloropropene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2,3-Trichlorobenzene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2,4,5-Tetramethylbenzene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,2,4-Trichlorobenzene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2,4-Trimethylbenzene	3.6	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2-Dibromoethane	NS	0.012 U	0.021 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,2-Dichloroethane	0.02	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
1,2-Dichloropropane	NS	0.011 U	0.018 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U
1,3,5-Trimethylbenzene	8.4	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,3-Dichlorobenzene	2.4	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,3-Dichloropropane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,4-Dichlorobenzene	1.8	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
1,4-Diethylbenzene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
2,2-Dichloropropane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
2-Butanone	0.12	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
2-Hexanone	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
4-Ethyltoluene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
4-Methyl-2-pentanone	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
Acetone	0.05	0.031 U	0.053 U	0.05	0.03 U	0.029 U	0.031 U	0.03 U
Benzene	0.06	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Bromobenzene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
Bromochloromethane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
Bromodichloromethane	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Bromoform	NS	0.012 U	0.021 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromomethane	NS	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
Carbon disulfide	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
Carbon tetrachloride	0.76	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Chlorobenzene	1.1	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Chloroethane	NS	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
Chloroform	0.37	0.0047 U	0.0079 U	0.0045 U	0.0046 U	0.0044 U	0.0047 U	0.0046 U
Chloromethane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
cis-1,2-Dichloroethene	0.25	0.0031 U	0.03	**0.35**	0.003	0.0029 U	0.0031 U	0.003 U
cis-1,3-Dichloropropene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Dibromochloromethane	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Dibromomethane	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
Dichlorodifluoromethane	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
Ethylbenzene	1	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Hexachlorobutadiene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
Isopropylbenzene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Methyl tert butyl ether	0.93	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
Methylene chloride	0.05	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
n-Butylbenzene	12	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
n-Propylbenzene	3.9	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Naphthalene	12	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
o-Chlorotoluene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
o-Xylene	1.6	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
p-Chlorotoluene	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
p-Isopropyltoluene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
p/m-Xylene	1.6	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
sec-Butylbenzene	11	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Styrene	NS	0.0062 U	0.01 U	0.006 U	0.0061 U	0.0059 U	0.0062 U	0.0061 U
tert-Butylbenzene	5.9	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
Tetrachloroethene	1.3	0.0049	0.36	0.55	0.044	0.0042	0.0042	0.0086
Toluene	0.7	0.0047 U	0.0079 U	0.0045 U	0.0046 U	0.0044 U	0.0047 U	0.0046 U
trans-1,2-Dichloroethene	0.19	0.0047 U	0.0079 U	0.0045 U	0.0046 U	0.0044 U	0.0047 U	0.0046 U
trans-1,3-Dichloropropene	NS	0.0031 U	0.0053 U	0.003 U	0.003 U	0.0029 U	0.0031 U	0.003 U
Trichloroethene	0.47	0.0031 U	0.0084	0.015	0.003 U	0.0029 U	0.0031 U	0.003 U
Trichlorofluoromethane	NS	0.016 U	0.026 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U
Vinyl acetate	NS	0.031 U	0.053 U	0.03 U	0.03 U	0.029 U	0.031 U	0.03 U
Vinyl chloride	0.02	0.0062 U	0.01 U	**0.15**	0.0061 U	0.0059 U	0.0062 U	0.0061 U
Xylenes, Total	1.6	0.0124 U	0.02 U	0.012 U	0.0122 U	0.0118 U	0.0124 U	0.0122 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-19 (18') L0800656-05 1/10/2008	SB-20 (10'-11') L0800656-09 1/10/2008	SB-20 (12'-13') L0800656-04 1/10/2008	SB-20 (17'-18') L0800656-03 1/10/2008	SB-21 (13'-14') L0800656-24 1/11/2008	SB-21 (16'-17') L0800656-23 1/11/2008	SB-22 (12'-14') L0718726-02 12/10/2007
1,1,1,2-Tetrachloroethane	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,1,1-Trichloroethane	0.68	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,1,2,2-Tetrachloroethane	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,1,2-Trichloroethane	NS	0.0046 U	0.0043 U	0.004 U	0.0043 U	0.0078 U	0.0045 U	0.0047 U
1,1-Dichloroethane	0.27	0.0046 U	0.0043 U	0.004 U	0.0043 U	0.0078 U	0.0045 U	0.0047 U
1,1-Dichloroethene	0.33	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,1-Dichloropropene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2,3-Trichlorobenzene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2,4,5-Tetramethylbenzene	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,2,4-Trichlorobenzene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2,4-Trimethylbenzene	3.6	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2-Dibromo-3-chloropropane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2-Dibromoethane	NS	0.012 U	0.011 U	0.011 U	0.011 U	0.021 U	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,2-Dichloroethane	0.02	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
1,2-Dichloropropane	NS	0.011 U	0.0099 U	0.0094 U	0.0099 U	0.018 U	0.01 U	0.011 U
1,3,5-Trimethylbenzene	8.4	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,3-Dichlorobenzene	2.4	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,3-Dichloropropane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,4-Dichlorobenzene	1.8	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
1,4-Diethylbenzene	NS	0.0031 U	0.0054	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
2,2-Dichloropropane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
2-Butanone	0.12	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
2-Hexanone	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
4-Ethyltoluene	NS	0.0031 U	0.0039	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
4-Methyl-2-pentanone	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
Acetone	0.05	0.031 U	0.028 U	0.027 U	0.028 U	**0.21**	0.03 U	**0.055**
Benzene	0.06	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Bromobenzene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
Bromochloromethane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
Bromodichloromethane	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Bromoform	NS	0.012 U	0.011 U	0.011 U	0.011 U	0.021 U	0.012 U	0.012 U
Bromomethane	NS	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
Carbon disulfide	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
Carbon tetrachloride	0.76	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Chlorobenzene	1.1	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Chloroethane	NS	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
Chloroform	0.37	0.0046 U	0.0043 U	0.004 U	0.0043 U	0.0078 U	0.0045 U	0.0047 U
Chloromethane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
cis-1,2-Dichloroethene	0.25	0.0031 U	0.0028 U	0.0034	0.014	**0.32**	0.037	0.0031 U
cis-1,3-Dichloropropene	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Dibromochloromethane	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Dibromomethane	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
Dichlorodifluoromethane	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
Ethylbenzene	1	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Hexachlorobutadiene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
Isopropylbenzene	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Methyl tert butyl ether	0.93	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
Methylene chloride	0.05	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
n-Butylbenzene	12	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
n-Propylbenzene	3.9	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Naphthalene	12	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
o-Chlorotoluene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
o-Xylene	1.6	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
p-Chlorotoluene	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
p-Isopropyltoluene	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
p/m-Xylene	1.6	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
sec-Butylbenzene	11	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Styrene	NS	0.0062 U	0.0057 U	0.0054 U	0.0057 U	0.01 U	0.006 U	0.0062 U
tert-Butylbenzene	5.9	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
Tetrachloroethene	1.3	0.0039	0.041	0.05	0.074	0.0064	0.15	0.013
Toluene	0.7	0.0046 U	0.0043 U	0.004 U	0.0043 U	0.0078 U	0.0045 U	0.0047 U
trans-1,2-Dichloroethene	0.19	0.0046 U	0.0043 U	0.004 U	0.0043 U	0.0078 U	0.0045 U	0.0047 U
trans-1,3-Dichloropropene	NS	0.0031 U	0.0028 U	0.0027 U	0.0028 U	0.0052 U	0.003 U	0.0031 U
Trichloroethene	0.47	0.0031 U	0.0028 U	0.0027 U	0.0078	0.0052 U	0.003 U	0.0031 U
Trichlorofluoromethane	NS	0.015 U	0.014 U	0.013 U	0.014 U	0.026 U	0.015 U	0.016 U
Vinyl acetate	NS	0.031 U	0.028 U	0.027 U	0.028 U	0.052 U	0.03 U	0.031 U
Vinyl chloride	0.02	0.0062 U	0.0057 U	0.0054 U	0.0057 U	**0.45**	0.006 U	0.0062 U
Xylenes, Total	1.6	0.0124 U	0.0114 U	0.0108 U	0.0114 U	0.02 U	0.012 U	0.0124 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-22 (19'-20') L0718726-01 12/10/2007	SB-23 (14'-15') L0718726-03 12/10/2007	SB-24 (13'-14') L0718726-04 12/10/2007	SB-24 (14'-15') L0718726-05 12/10/2007	SB-25 (5'-6') L0718726-07 12/10/2007	SB-25 (11'-12') L0718726-06 12/10/2007	SB-26 (17'-18') L0718726-08 12/13/2007
1,1,1,2-Tetrachloroethane	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,1,1-Trichloroethane	0.68	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,1,2,2-Tetrachloroethane	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,1,2-Trichloroethane	NS	0.0044 U	1 U	0.0043 U	0.0045 U	0.0047 U	0.0046 U	0.0045 U
1,1-Dichloroethane	0.27	0.0044 U	1 U	0.0043 U	0.0045 U	0.0047 U	0.0046 U	0.0045 U
1,1-Dichloroethene	0.33	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,1-Dichloropropene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2,3-Trichlorobenzene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2,4,5-Tetramethylbenzene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,2,4-Trichlorobenzene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2,4-Trimethylbenzene	3.6	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2-Dibromoethane	NS	0.012 U	2.8 U	0.011 U	0.012 U	0.013 U	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,2-Dichloroethane	0.02	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
1,2-Dichloropropane	NS	0.01 U	2.5 U	0.0099 U	0.01 U	0.011 U	0.011 U	0.01 U
1,3,5-Trimethylbenzene	8.4	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,3-Dichlorobenzene	2.4	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,3-Dichloropropane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,4-Dichlorobenzene	1.8	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
1,4-Diethylbenzene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
2,2-Dichloropropane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
2-Butanone	0.12	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
2-Hexanone	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
4-Ethyltoluene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
4-Methyl-2-pentanone	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Acetone	0.05	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Benzene	0.06	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Bromobenzene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
Bromochloromethane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
Bromodichloromethane	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Bromoform	NS	0.012 U	2.8 U	0.011 U	0.012 U	0.013 U	0.012 U	0.012 U
Bromomethane	NS	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
Carbon disulfide	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Carbon tetrachloride	0.76	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Chlorobenzene	1.1	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Chloroethane	NS	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
Chloroform	0.37	0.0044 U	1 U	0.0043 U	0.0045 U	0.0047 U	0.0046 U	0.0045 U
Chloromethane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
cis-1,2-Dichloroethene	0.25	0.0029 U	**14**	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
cis-1,3-Dichloropropene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Dibromochloromethane	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Dibromomethane	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Dichlorodifluoromethane	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Ethylbenzene	1	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Hexachlorobutadiene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
Isopropylbenzene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Methyl tert butyl ether	0.93	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
Methylene chloride	0.05	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
n-Butylbenzene	12	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
n-Propylbenzene	3.9	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Naphthalene	12	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
o-Chlorotoluene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
o-Xylene	1.6	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
p-Chlorotoluene	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
p-Isopropyltoluene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
p/m-Xylene	1.6	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
sec-Butylbenzene	11	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Styrene	NS	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
tert-Butylbenzene	5.9	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
Tetrachloroethene	1.3	0.0029 U	**79**	0.0066	0.003 U	0.0032 U	0.0031 U	0.003 U
Toluene	0.7	0.0044 U	1 U	0.0043 U	0.0045 U	0.0047 U	0.0046 U	0.0045 U
trans-1,2-Dichloroethene	0.19	0.0044 U	1 U	0.0043 U	0.0045 U	0.0047 U	0.0046 U	0.0045 U
trans-1,3-Dichloropropene	NS	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Trichloroethene	0.47	0.0029 U	0.7 U	0.0028 U	0.003 U	0.0032 U	0.0031 U	0.003 U
Trichlorofluoromethane	NS	0.015 U	3.5 U	0.014 U	0.015 U	0.016 U	0.015 U	0.015 U
Vinyl acetate	NS	0.029 U	7 U	0.028 U	0.03 U	0.032 U	0.031 U	0.03 U
Vinyl chloride	0.02	0.0059 U	1.4 U	0.0057 U	0.006 U	0.0063 U	0.0062 U	0.006 U
Xylenes, Total	1.6	0.0118 U	2.8 U	0.0114 U	0.012 U	0.0126 U	0.0124 U	0.012 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-27 (19'-20') L0718726-10 12/13/2007	SB-27 (20'-21') L0718726-09 12/13/2007	SB-28 (13'-14') L0718726-17 12/14/2007	SB-28 (20'-21') L0718726-16 12/14/2007	SB-29 (17'-18') L0718726-11 12/13/2007	SB-29 (20'-21') L0718726-12 12/13/2007	SB-30 (17'-18') L0718726-14 12/13/2007
1,1,1,2-Tetrachloroethane	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
1,1,1-Trichloroethane	0.68	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
1,1,2,2-Tetrachloroethane	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
1,1,2-Trichloroethane	NS	0.0044 U	0.0045 U	0.0044 U	0.0048 U	0.0042 U	0.0044 U	1.7 U
1,1-Dichloroethane	0.27	0.0044 U	0.0045 U	0.0044 U	0.0048 U	0.0042 U	0.0044 U	1.7 U
1,1-Dichloroethene	0.33	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
1,1-Dichloropropene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2,3-Trichlorobenzene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2,4,5-Tetramethylbenzene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	13
1,2,4-Trichlorobenzene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2,4-Trimethylbenzene	3.6	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2-Dibromo-3-chloropropane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2-Dibromoethane	NS	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	4.5 U
1,2-Dichlorobenzene	1.1	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,2-Dichloroethane	0.02	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
1,2-Dichloropropane	NS	0.01 U	0.01 U	0.01 U	0.011 U	0.0097 U	0.01 U	3.9 U
1,3,5-Trimethylbenzene	8.4	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,3-Dichlorobenzene	2.4	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,3-Dichloropropane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,4-Dichlorobenzene	1.8	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
1,4-Diethylbenzene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	7.2
2,2-Dichloropropane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
2-Butanone	0.12	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
2-Hexanone	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
4-Ethyltoluene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
4-Methyl-2-pentanone	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
Acetone	0.05	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	**0.065**	11 U
Benzene	0.06	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Bromobenzene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
Bromochloromethane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
Bromodichloromethane	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Bromoform	NS	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	4.5 U
Bromomethane	NS	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
Carbon disulfide	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
Carbon tetrachloride	0.76	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Chlorobenzene	1.1	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Chloroethane	NS	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
Chloroform	0.37	0.0044 U	0.0045 U	0.0044 U	0.0048 U	0.0042 U	0.0044 U	1.7 U
Chloromethane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
cis-1,2-Dichloroethene	0.25	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
cis-1,3-Dichloropropene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Dibromochloromethane	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Dibromomethane	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
Dichlorodifluoromethane	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
Ethylbenzene	1	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Hexachlorobutadiene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
Isopropylbenzene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	4.2
Methyl tert butyl ether	0.93	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
Methylene chloride	0.05	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
n-Butylbenzene	12	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	9
n-Propylbenzene	3.9	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	**5.9**
Naphthalene	12	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
o-Chlorotoluene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
o-Xylene	1.6	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
p-Chlorotoluene	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
p-Isopropyltoluene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
p/m-Xylene	1.6	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
sec-Butylbenzene	11	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	6.2
Styrene	NS	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
tert-Butylbenzene	5.9	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
Tetrachloroethene	1.3	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Toluene	0.7	0.0044 U	0.0045 U	0.0044 U	0.0048 U	0.0042 U	0.0044 U	1.7 U
trans-1,2-Dichloroethene	0.19	0.0044 U	0.0045 U	0.0044 U	0.0048 U	0.0042 U	0.0044 U	1.7 U
trans-1,3-Dichloropropene	NS	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Trichloroethene	0.47	0.0029 U	0.003 U	0.0029 U	0.0032 U	0.0028 U	0.0029 U	1.1 U
Trichlorofluoromethane	NS	0.015 U	0.015 U	0.014 U	0.016 U	0.014 U	0.015 U	5.6 U
Vinyl acetate	NS	0.029 U	0.03 U	0.029 U	0.032 U	0.028 U	0.029 U	11 U
Vinyl chloride	0.02	0.0059 U	0.006 U	0.0058 U	0.0064 U	0.0056 U	0.0059 U	2.2 U
Xylenes, Total	1.6	0.0118 U	0.012 U	0.0116 U	0.0128 U	0.0112 U	0.0118 U	4.4 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-30 (23'-24') L0718726-13 12/13/2007	SB-31 (20'-21') L0718726-15 12/13/2007	SB-32 (3'-4') L0804083-01 3/20/2008	SB-32 (8'-10') L0804083-02 3/20/2008	SB-33(0-2') 220-10975-1 12/9/2009 1
1,1,1,2-Tetrachloroethane	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	NA
1,1,1-Trichloroethane	0.68	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00054 U H
1,1,2,2-Tetrachloroethane	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00053 U H
1,1,2-Trichloroethane	NS	0.0045 U	0.0041 U	0.022 U	0.0046 U	0.00038 U H
1,1-Dichloroethane	0.27	0.0045 U	0.0041 U	0.022 U	0.0046 U	0.00031 U H
1,1-Dichloroethene	0.33	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00059 U H
1,1-Dichloropropene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2,3-Trichlorobenzene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2,4,5-Tetramethylbenzene	NS	0.003 U	0.0027 U	0.62	0.0031 U	NA
1,2,4-Trichlorobenzene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2,4-Trimethylbenzene	3.6	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2-Dibromo-3-chloropropane	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2-Dibromoethane	NS	0.012 U	0.011 U	0.058 U	0.012 U	NA
1,2-Dichlorobenzene	1.1	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,2-Dichloroethane	0.02	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00059 U H
1,2-Dichloropropane	NS	0.01 U	0.0095 U	0.051 U	0.011 U	0.00068 U H
1,3,5-Trimethylbenzene	8.4	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,3-Dichlorobenzene	2.4	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,3-Dichloropropane	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,4-Dichlorobenzene	1.8	0.015 U	0.014 U	0.073 U	0.015 U	NA
1,4-Diethylbenzene	NS	0.003 U	0.0027 U	0.18	0.0031 U	NA
2,2-Dichloropropane	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
2-Butanone	0.12	0.03 U	0.027 U	0.14 U	0.031 U	0.0016 U H
2-Hexanone	NS	0.03 U	0.027 U	0.14 U	0.031 U	0.0012 U H
4-Ethyltoluene	NS	0.003 U	0.0027 U	0.056	0.0031 U	NA
4-Methyl-2-pentanone	NS	0.03 U	0.027 U	0.14 U	0.031 U	0.00056 U H
Acetone	0.05	**0.069**	0.027 U	0.14 U	0.036	**0.016 J H B**
Benzene	0.06	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00058 U H
Bromobenzene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
Bromochloromethane	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
Bromodichloromethane	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00031 U H
Bromoform	NS	0.012 U	0.011 U	0.058 U	0.012 U	0.00062 U H
Bromomethane	NS	0.006 U	0.0054 U	0.029 U	0.0062 U	0.0021 U H
Carbon disulfide	NS	0.03 U	0.027 U	0.14 U	0.031 U	0.00042 U H
Carbon tetrachloride	0.76	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00097 U H
Chlorobenzene	1.1	0.003 U	0.0027 U	0.019	0.0031 U	0.0006 U H
Chloroethane	NS	0.006 U	0.0054 U	0.029 U	0.0062 U	0.001 U H
Chloroform	0.37	0.0045 U	0.0041 U	0.022 U	0.0046 U	0.00035 U H
Chloromethane	NS	0.015 U	0.014 U	0.073 U	0.015 U	0.00079 U H
cis-1,2-Dichloroethene	0.25	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00038 U H
cis-1,3-Dichloropropene	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00057 U H
Dibromochloromethane	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00036 U H
Dibromomethane	NS	0.03 U	0.027 U	0.14 U	0.031 U	NA
Dichlorodifluoromethane	NS	0.03 U	0.027 U	0.14 U	0.031 U	NA
Ethylbenzene	1	0.003 U	0.0027 U	0.17	0.0031 U	0.00071 U H
Hexachlorobutadiene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
Isopropylbenzene	NS	0.003 U	0.0027 U	0.25	0.0031 U	NA
Methyl tert butyl ether	0.93	0.006 U	0.0054 U	0.029 U	0.0062 U	NA
Methylene chloride	0.05	0.03 U	0.027 U	0.14 U	0.031 U	0.0017 J H
n-Butylbenzene	12	0.003 U	0.0027 U	0.4	0.0031 U	NA
n-Propylbenzene	3.9	0.003 U	0.0027 U	0.69	0.0031 U	NA
Naphthalene	12	0.015 U	0.014 U	1.6	0.015 U	NA
o-Chlorotoluene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
o-Xylene	1.6	0.006 U	0.0054 U	0.029 U	0.0062 U	NA
p-Chlorotoluene	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
p-Isopropyltoluene	NS	0.003 U	0.0027 U	0.058	0.0031 U	NA
p/m-Xylene	1.6	0.006 U	0.0054 U	0.029 U	0.0062 U	NA
sec-Butylbenzene	11	0.003 U	0.0027 U	0.3	0.0031 U	NA
Styrene	NS	0.006 U	0.0054 U	0.029 U	0.0062 U	0.00015 U H
tert-Butylbenzene	5.9	0.015 U	0.014 U	0.073 U	0.015 U	NA
Tetrachloroethene	1.3	0.003 U	0.0027 U	0.014 U	0.0031 U	0.0021 J H
Toluene	0.7	0.0045 U	0.0041 U	0.022 U	0.0046 U	0.00091 J H B
trans-1,2-Dichloroethene	0.19	0.0045 U	0.0041 U	0.022 U	0.0046 U	0.0004 U H
trans-1,3-Dichloropropene	NS	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00027 U H
Trichloroethene	0.47	0.003 U	0.0027 U	0.014 U	0.0031 U	0.00082 U H
Trichlorofluoromethane	NS	0.015 U	0.014 U	0.073 U	0.015 U	NA
Vinyl acetate	NS	0.03 U	0.027 U	0.14 U	0.031 U	NA
Vinyl chloride	0.02	0.006 U	0.0054 U	0.029 U	0.0062 U	0.00023 U H
Xylenes, Total	1.6	0.012 U	0.0108 U	0.058 U	0.0124 U	0.0013 J H

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID / Lab Sample ID / Date Sampled / Dilution / Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-33(2'-4') 220-10975-2 12/9/2009 1	SB-33(4'-6') 220-10975-3 12/9/2009 1	SB-33(6'-8') 220-10975-4 12/9/2009 1	SB-33(6'-8') 220-10975-4 12/9/2009 40 Medium	SB-33(8'-10') 220-10975-5 12/9/2009 1	SB-33(10'-12') 220-10975-6 12/9/2009 1
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00065 U H	0.00055 U H	0.00061 U	2.9 U H	0.00059 U H	0.00064 U
1,1,2,2-Tetrachloroethane	NS	0.00064 U H	0.00054 U H	0.0006 U	3 U H	0.00058 U H	0.00063 U
1,1,2-Trichloroethane	NS	0.00045 U H	0.00038 U H	0.00043 U	3.1 U H	0.00041 U H	0.00044 U
1,1-Dichloroethane	0.27	0.00037 U H	0.00031 U H	0.00035 U	3.3 U H	0.00033 U H	0.00036 U
1,1-Dichloroethene	0.33	0.00071 U H	0.0006 U H	0.00067 U	3.5 U H	0.00064 U H	0.0007 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00071 U H	0.0006 U H	0.00067 U	2.7 U H	0.00064 U H	0.0007 U
1,2-Dichloropropane	NS	0.00082 U H	0.0007 U H	0.00077 U	2.4 U H	0.00074 U H	0.00081 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0019 U H	0.0017 U H	0.0018 U	5.1 U H	0.0018 U H	0.0019 U
2-Hexanone	NS	0.0015 U H	0.0012 U H	0.0014 U	6 U H	0.0013 U H	0.0014 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00067 U H	0.00057 U H	0.00063 U	3.8 U H	0.00061 U H	0.00066 U
Acetone	0.05	0.0027 U H	0.0052 J H B	0.0075 J	11 U H	0.0074 J H B	0.012 J
Benzene	0.06	0.0007 U H	0.00059 U H	0.00067 J	3 U H	0.00063 U H	0.00069 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00037 U H	0.00031 U H	0.00035 U	3.2 U H	0.00033 U H	0.00036 U
Bromoform	NS	0.00075 U H	0.00063 U H	0.0007 U	3.7 U H	0.00068 U H	0.00073 U
Bromomethane	NS	0.0025 U H	0.0022 U H	0.0024 U	4.2 U H	0.0023 U H	0.0025 U
Carbon disulfide	NS	0.0005 U H	0.00043 U H	0.00047 U	3 U H	0.00045 U H	0.00049 U
Carbon tetrachloride	0.76	0.0012 U H	0.00099 U H	0.0011 U	3.5 U H	0.0011 U H	0.0011 U
Chlorobenzene	1.1	0.00072 U H	0.00061 U H	0.00068 U	2.9 U H	0.00065 U H	0.00071 U
Chloroethane	NS	0.0012 U H	0.001 U H	0.0011 U	3.7 U H	0.0011 U H	0.0012 U
Chloroform	0.37	0.00042 U H	0.00035 U H	0.0018 J	2.9 U H	0.00038 U H	0.00041 U
Chloromethane	NS	0.00095 U H	0.00081 U H	0.0009 U	2.9 U H	0.00087 U H	0.00094 U
cis-1,2-Dichloroethene	0.25	0.00045 U H	0.00038 U H	0.046	2.8 U H	0.0019 J H	0.0086
cis-1,3-Dichloropropene	NS	0.00069 U H	0.00058 U H	0.00065 U	2.8 U H	0.00062 U H	0.00067 U
Dibromochloromethane	NS	0.00043 U H	0.00036 U H	0.0004 U	3.6 U H	0.00039 U H	0.00042 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00086 U H	0.00073 U H	0.00081 U	2.4 U H	0.00078 U H	0.00084 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0067 J H	0.0054 J H	0.01 J	3.7 U H	0.0069 J H	0.0023 J
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00018 U H	0.00016 U H	0.00017 U	3.7 U H	0.00017 U H	0.00018 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.0045 J H	0.048 H	0.52 E	**920 H**	0.086 H	0.17
Toluene	0.7	0.00037 J H B	0.00056 J H B	0.0017 J B	3.3 U H	0.00085 J H B	0.00043 J B
trans-1,2-Dichloroethene	0.19	0.00048 U H	0.00041 U H	0.00045 U	2.4 U H	0.00043 U H	0.00047 U
trans-1,3-Dichloropropene	NS	0.00033 U H	0.00028 U H	0.00031 U	2.9 U H	0.0003 U H	0.00032 U
Trichloroethene	0.47	0.00099 U H	0.00084 U H	0.15	5.3 J H	0.0041 J H	0.017
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00028 U H	0.00024 U H	0.00027 U	3.1 U H	0.00026 U H	0.00028 U
Xylenes, Total	1.6	0.00059 U H	0.00051 U H	0.00064 J	9.7 U H	0.00054 U H	0.00058 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-33(12'-14') 220-10975-7 12/9/2009 4	 1 Secondary	SB-33(14'-16') 220-10975-8 12/9/2009 5	 1 Secondary	SB-34(0-2.5') 220-11026-3 12/11/2009 1	SB-34(2.5'-5') 220-11026-4 12/11/2009 1
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.0027 U H	0.00068 U	0.003 U H	0.0006 U	0.00064 U	0.0006 U
1,1,2,2-Tetrachloroethane	NS	0.0027 U H	0.00066 U	0.003 U H	0.00059 U	0.00063 U	0.00059 U
1,1,2-Trichloroethane	NS	0.0019 U H	0.00047 U	0.0021 U H	0.00042 U	0.00045 U	0.00042 U
1,1-Dichloroethane	0.27	0.0015 U H	0.00038 U	0.0017 U H	0.00034 U	0.00036 U	0.00034 U
1,1-Dichloroethene	0.33	0.003 U H	0.00074 U	0.0033 U H	0.00066 U	0.0007 U	0.00066 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.003 U H	0.00074 U	0.0033 U H	0.00066 U	0.0007 U	0.00066 U
1,2-Dichloropropane	NS	0.0034 U H	0.00086 U	0.0038 U H	0.00076 U	0.00081 U	0.00076 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0081 U H	0.002 U	0.0091 U H	0.031	0.0019 U *	0.0018 U *
2-Hexanone	NS	0.0061 U H	0.0015 U	0.0068 U H	0.0014 U	0.0014 U	0.0014 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.0028 U H	0.0007 U	0.0031 U H	0.00063 U	0.00066 U	0.00062 U
Acetone	0.05	0.15 H B	**0.12**	**0.6 H B**	0.66 E	0.0027 U	0.0053 J B
Benzene	0.06	0.0029 U H	0.00073 U	0.0032 U H	0.00065 U	0.00069 U	0.00064 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.0015 U H	0.00038 U	0.0017 U H	0.00034 U	0.00036 U	0.00034 U
Bromoform	NS	0.0031 U H	0.00078 U	0.0035 U H	0.00069 U	0.00074 U	0.00069 U
Bromomethane	NS	0.011 U H	0.0027 U	0.012 U H	0.0024 U	0.0025 U	0.0024 U
Carbon disulfide	NS	0.0021 U H	0.00052 U	0.0023 U H	0.00047 U	0.0005 U	0.00046 U
Carbon tetrachloride	0.76	0.0049 U H	0.0012 U	0.0054 U H	0.0011 U	0.0011 U	0.0011 U
Chlorobenzene	1.1	0.003 U H	0.00075 U	0.0034 U H	0.00067 U	0.00071 U	0.00067 U
Chloroethane	NS	0.005 U H	0.0013 U	0.0056 U H	0.0011 U	0.0012 U	0.0011 U
Chloroform	0.37	0.0017 U H	0.00043 U	0.0019 U H	0.00039 U	0.00041 U	0.00038 U
Chloromethane	NS	0.004 U H	0.001 U	0.0044 U H	0.00089 U	0.00094 U	0.00088 U
cis-1,2-Dichloroethene	0.25	0.18 H	0.2	0.089 H	0.086	0.0053 J	0.0059
cis-1,3-Dichloropropene	NS	0.0029 U H	0.00072 U	0.0032 U H	0.00064 U	0.00068 U	0.00063 U
Dibromochloromethane	NS	0.0018 U H	0.00045 U	0.002 U H	0.0004 U	0.00042 U	0.0004 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.0036 U H	0.00089 U	0.004 U H	0.0008 U	0.00085 U	0.00079 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.044 J H	0.0021 J	0.046 J H	0.0033 J	0.0044 J B	0.0022 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00077 U H	0.00019 U	0.00085 U H	0.00017 U	0.00018 U	0.00017 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.8 H	0.53 E	0.088 H	0.054	0.15	0.13
Toluene	0.7	0.00076 J H B	0.00072 J B	0.0021 J H B	0.00079 J B	0.00042 J B	0.00056 J B
trans-1,2-Dichloroethene	0.19	0.0028 J H	0.003 J	0.0022 U H	0.0023 J	0.00047 U	0.00044 U
trans-1,3-Dichloropropene	NS	0.0014 U H	0.00034 U	0.0015 U H	0.00031 U	0.00033 U	0.00031 U
Trichloroethene	0.47	0.12 H	0.1	0.014 J H	0.01	0.0035 J	0.0026 J
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.0022 J H	0.0046 J	0.0025 J H	0.0042 J	0.00028 U	0.00026 U
Xylenes, Total	1.6	0.0025 U H	0.00062 U	0.0028 U H	0.00092 J	0.00059 U	0.00055 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-34(5'-7.5') 220-11026-5 12/11/2009 1	SB-34(7.5'-10') 220-11026-6 12/11/2009 1	SB-34(10-12.5') 220-11026-7 12/11/2009 1	SB-34(12.5'-15') 220-11026-8 12/11/2009 1	SB-34(7.5'-10') DUP 220-11026-15 12/11/2009 1	 1 Medium
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00057 U	0.00072 U	0.0007 U	0.00067 U	0.00072 U	0.084 U
1,1,2,2-Tetrachloroethane	NS	0.00056 U	0.00071 U	0.00069 U	0.00065 U	0.0007 U	0.089 U
1,1,2-Trichloroethane	NS	0.0004 U	0.0005 U	0.00049 U	0.00047 U	0.0005 U	0.092 U
1,1-Dichloroethane	0.27	0.00032 U	0.00041 U	0.0004 U	0.00038 U	0.00041 U	0.097 U
1,1-Dichloroethene	0.33	0.00062 U	0.00079 U	0.00077 U	0.00073 U	0.00078 U	0.1 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00062 U	0.00079 U	0.00077 U	0.00073 U	0.00078 U	0.08 U
1,2-Dichloropropane	NS	0.00072 U	0.00091 U	0.00089 U	0.00084 U	0.00091 U	0.07 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0017 U	0.014 *	0.0021 U *	0.002 U *	0.0021 U *	0.15 U *
2-Hexanone	NS	0.0013 U	0.0016 U	0.0016 U	0.0015 U	0.0016 U	0.18 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00059 U	0.00075 U	0.00073 U	0.00069 U	0.00074 U	0.11 U
Acetone	0.05	0.0074 J	**0.087 B**	0.012 J B	0.0098 J B	0.003 U	0.32 U *
Benzene	0.06	0.00061 U	0.00077 U	0.00075 U	0.00072 U	0.00077 U	0.089 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00032 U	0.00041 U	0.0004 U	0.00038 U	0.00041 U	0.093 U
Bromoform	NS	0.00066 U	0.00083 U	0.00081 U	0.00077 U	0.00082 U	0.11 U
Bromomethane	NS	0.0022 U	0.0028 U	0.0027 U	0.0026 U	0.0028 U	0.12 U
Carbon disulfide	NS	0.00044 U	0.0023 J	0.00054 U	0.00052 U	0.00055 U	0.089 U
Carbon tetrachloride	0.76	0.001 U	0.0013 U	0.0013 U	0.0012 U	0.0013 U	0.1 U
Chlorobenzene	1.1	0.00063 U	0.0008 U	0.00078 U	0.00074 U	0.0008 U	0.084 U
Chloroethane	NS	0.0011 U	0.0013 U	0.0013 U	0.0012 U	0.0013 U	0.11 U
Chloroform	0.37	0.00037 U	0.00046 U	0.00045 U	0.00043 U	0.00046 U	0.084 U
Chloromethane	NS	0.00084 U	0.0011 U	0.001 U	0.00098 U	0.0011 U	0.086 U
cis-1,2-Dichloroethene	0.25	0.0004 U	0.012	0.0022 J	0.00072 J	0.03	0.16 J
cis-1,3-Dichloropropene	NS	0.0006 U	0.00076 U	0.00074 U	0.00071 U	0.00076 U	0.082 U
Dibromochloromethane	NS	0.00038 U	0.00048 U	0.00046 U	0.00044 U	0.00047 U	0.11 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00075 U	0.00095 U	0.00093 U	0.00088 U	0.00095 U	0.07 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0054 J B	0.0083 J B	0.0052 J B	0.0056 J B	0.011 J B	0.31 J
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00016 U	0.0002 U	0.0002 U	0.00019 U	0.0002 U	0.11 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.042	0.25	0.0011 U	0.0027 J	0.93 E	**8.4**
Toluene	0.7	0.00034 J B	0.00035 J B	0.00017 J B	0.000093 U	0.00039 J B	0.097 U
trans-1,2-Dichloroethene	0.19	0.00042 U	0.00053 U	0.00052 U	0.00049 U	0.00053 U	0.072 U
trans-1,3-Dichloropropene	NS	0.00029 U	0.00037 U	0.00036 U	0.00034 U	0.00036 U	0.084 U
Trichloroethene	0.47	0.00087 U	0.0044 J	0.0011 U	0.001 U	0.02	0.13 J
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00025 U	0.0062 J	0.0021 J	0.00029 U	0.0019 J	0.091 U
Xylenes, Total	1.6	0.00052 U	0.00066 U	0.00064 U	0.00061 U	0.00066 U	0.28 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID	NYSDEC	SB-35(0-2.5')	SB-35(2.5'-5')	SB-35(5'-7.5')	SB-35(7.5'-10')	SB-35(10'-12.5')	SB-35(12.5'-15')	
Lab Sample ID	Part 375 SCO for	220-11026-9	220-11026-10	220-11026-11	220-11026-12	220-11026-13	220-11026-14	
Date Sampled	Unrestricted Use	12/11/2009	12/11/2009	12/11/2009	12/11/2009	12/11/2009	12/11/2009	
Dilution	mg/kg	1	1	1	1	1	1	4 Medium
Analyte								
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00063 U	0.00057 U	0.00057 U	0.00062 U	0.00061 U	0.00091 U	0.43 U H
1,1,2,2-Tetrachloroethane	NS	0.00062 U	0.00056 U	0.00056 U	0.00061 U	0.0006 U	0.00089 U	0.45 U H
1,1,2-Trichloroethane	NS	0.00044 U	0.0004 U	0.0004 U	0.00043 U	0.00043 U	0.00064 U	0.47 U H
1,1-Dichloroethane	0.27	0.00036 U	0.00032 U	0.00032 U	0.00035 U	0.00035 U	0.00052 U	0.49 U H
1,1-Dichloroethene	0.33	0.00069 U	0.00062 U	0.00063 U	0.00068 U	0.00067 U	0.0042 J	0.52 U H
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00069 U	0.00062 U	0.00063 U	0.00068 U	0.00067 U	0.001 U	0.41 U H
1,2-Dichloropropane	NS	0.0008 U	0.00072 U	0.00072 U	0.00079 U	0.00078 U	0.0012 U	0.36 U H
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0019 U *	0.0017 U *	0.0017 U *	0.0019 U *	0.0018 U *	0.031 *	0.76 U H
2-Hexanone	NS	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0021 U	0.89 U H
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00066 U	0.00059 U	0.00059 U	0.00065 U	0.00064 U	0.00095 U	0.56 U H
Acetone	0.05	0.0089 J B	0.006 J B	0.004 J B	0.0079 J B	0.022 J B	**0.25 B**	1.6 U H *
Benzene	0.06	0.00068 U	0.00061 U	0.00062 U	0.00067 U	0.00066 U	0.00098 U	0.45 U H
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00036 U	0.00032 U	0.00032 U	0.00035 U	0.00035 U	0.00052 U	0.47 U H
Bromoform	NS	0.00073 U	0.00066 U	0.00066 U	0.00072 U	0.00071 U	0.001 U	0.55 U H
Bromomethane	NS	0.0025 U	0.0022 U	0.0022 U	0.0024 U	0.0024 U	0.0036 U	0.63 U H
Carbon disulfide	NS	0.00049 U	0.00044 U	0.00044 U	0.00048 U	0.00047 U	0.011	0.45 U H
Carbon tetrachloride	0.76	0.0011 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.0016 U	0.53 U H
Chlorobenzene	1.1	0.0007 U	0.00064 U	0.00064 U	0.00069 U	0.00068 U	0.001 U	0.43 U H
Chloroethane	NS	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0017 U	0.55 U H *
Chloroform	0.37	0.00041 U	0.00037 U	0.00037 U	0.0004 U	0.00039 U	0.00058 U	0.43 U H
Chloromethane	NS	0.00093 U	0.00084 U	0.00084 U	0.00092 U	0.0009 U	0.0013 U	0.44 U H
cis-1,2-Dichloroethene	0.25	0.00044 U	0.0004 U	0.00052 J	0.00043 U	0.0045 J	8.4 E	**84 H**
cis-1,3-Dichloropropene	NS	0.00067 U	0.0006 U	0.0006 U	0.00066 U	0.00065 U	0.00096 U	0.42 U H
Dibromochloromethane	NS	0.00042 U	0.00038 U	0.00038 U	0.00041 U	0.0004 U	0.0006 U	0.54 U H
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00083 U	0.00075 U	0.00076 U	0.00082 U	0.00081 U	0.0012 U	0.36 U H
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0082 J B	0.0058 J B	0.0082 J B	0.011 J B	0.0088 J B	0.012 J B	1.8 J H B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00018 U	0.00016 U	0.00016 U	0.00018 U	0.00017 U	0.00026 U	0.55 U H
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.0049 J	0.00087 U	0.0099	0.0046 J	0.0015 J	0.002 J	0.56 U H
Toluene	0.7	0.0004 J B	0.00032 J B	0.00021 J B	0.00022 J B	0.00057 J B	0.0012 J B	0.49 U H
trans-1,2-Dichloroethene	0.19	0.00047 U	0.00042 U	0.00042 U	0.00046 U	0.00045 U	0.12	1.5 J H
trans-1,3-Dichloropropene	NS	0.00032 U	0.00029 U	0.00029 U	0.00032 U	0.00031 U	0.00046 U	0.43 U H
Trichloroethene	0.47	0.00097 U	0.00087 U	0.00087 U	0.00095 U	0.00094 U	0.0014 U	0.45 U H
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00027 U	0.00025 U	0.00025 U	0.00027 U	**0.052**	2.4 E	**31 H**
Xylenes, Total	1.6	0.00058 U	0.00052 U	0.00052 U	0.00057 U	0.00056 U	0.0014 J	1.4 U H

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-35(15-17.5') 220-11057-7 12/11/2009 1	SB-35(17.5'-20') 220-11057-8 12/11/2009 1	SB-36(0-2.5') 220-11057-1 12/11/2009 1	SB-36(2.5'-5') 220-11057-2 12/11/2009 1	SB-36(5'-7.5') 220-11057-3 12/11/2009 1	SB-36(7.5'-10') 220-11057-4 12/11/2009 1
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00067 U	0.00065 U	0.00059 U	0.00062 U	0.00058 U	0.00056 U
1,1,2,2-Tetrachloroethane	NS	0.00066 U	0.00064 U	0.00058 U	0.00061 U	0.00057 U	0.00055 U
1,1,2-Trichloroethane	NS	0.00047 U	0.00046 U	0.00041 U	0.00044 U	0.0004 U	0.00039 U
1,1-Dichloroethane	0.27	0.00038 U	0.00037 U	0.00033 U	0.00035 U	0.00033 U	0.00032 U
1,1-Dichloroethene	0.33	0.00073 U	0.00071 U	0.00065 U	0.00068 U	0.00063 U	0.00061 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00073 U	0.00071 U	0.00065 U	0.00068 U	0.00063 U	0.00061 U
1,2-Dichloropropane	NS	0.00085 U	0.00083 U	0.00075 U	0.00079 U	0.00073 U	0.00071 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.002 U	0.002 U	0.0018 U	0.0019 U	0.0017 U	0.0017 U
2-Hexanone	NS	0.0015 U	0.0015 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00069 U	0.00068 U	0.00061 U	0.00065 U	0.0006 U	0.00058 U
Acetone	0.05	0.038	0.02 J	0.0065 J B	0.014 J	0.013 J	0.0024 U
Benzene	0.06	0.00072 U	0.0007 U	0.00064 U	0.00067 U	0.00062 U	0.0006 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00038 U	0.00037 U	0.00033 U	0.00035 U	0.00033 U	0.00032 U
Bromoform	NS	0.00077 U	0.00075 U	0.00068 U	0.00072 U	0.00066 U	0.00064 U
Bromomethane	NS	0.0026 U	0.0026 U	0.0023 U	0.0025 U	0.0023 U	0.0022 U
Carbon disulfide	NS	0.00052 U	0.0005 U	0.00046 U	0.00048 U	0.00045 U	0.00043 U
Carbon tetrachloride	0.76	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.001 U	0.001 U
Chlorobenzene	1.1	0.00074 U	0.00073 U	0.00066 U	0.0007 U	0.00064 U	0.00062 U
Chloroethane	NS	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.001 U
Chloroform	0.37	0.00043 U	0.00042 U	0.00038 U	0.0004 U	0.00037 U	0.00036 U
Chloromethane	NS	0.00098 U	0.00096 U	0.00087 U	0.00092 U	0.00085 U	0.00082 U
cis-1,2-Dichloroethene	0.25	0.00047 U	0.00046 U	0.00041 U	0.00044 U	0.0004 U	0.00039 U
cis-1,3-Dichloropropene	NS	0.00071 U	0.00069 U	0.00062 U	0.00066 U	0.00061 U	0.00059 U
Dibromochloromethane	NS	0.00044 U	0.00043 U	0.00039 U	0.00041 U	0.00038 U	0.00037 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00088 U	0.00086 U	0.00078 U	0.00082 U	0.00076 U	0.00074 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0032 J	0.0017 J	0.0047 J	0.002 J	0.0016 J	0.0011 U
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00019 U	0.00018 U	0.00017 U	0.00018 U	0.00016 U	0.00016 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.001 U	0.001 U	0.0051 J	0.002 J	0.0012 J	0.00085 U
Toluene	0.7	0.00098 J B	0.000091 U	0.0011 J B	0.00026 J B	0.00031 J B	0.00011 J B
trans-1,2-Dichloroethene	0.19	0.00049 U	0.00048 U	0.00044 U	0.00046 U	0.00042 U	0.00041 U
trans-1,3-Dichloropropene	NS	0.00034 U	0.00033 U	0.0003 U	0.00032 U	0.00029 U	0.00028 U
Trichloroethene	0.47	0.001 U	0.001 U	0.0009 U	0.00095 U	0.00088 U	0.00085 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00063 J	0.0018 J	0.00026 U	0.00027 U	0.00025 U	0.00024 U
Xylenes, Total	1.6	0.00061 U	0.0006 U	0.00067 J	0.00057 U	0.00055 J	0.00051 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID	NYSDEC	SB-36(10'-12.5')	SB-36(12.5'-15')	SB-37 (1.5-3)	SB-37 (4.5-6)		SB-37 (6-7.5)	SB-37 (7.5-9)
Lab Sample ID	Part 375 SCO for	220-11057-5	220-11057-6	220-11210-1	220-11210-2		220-11210-3	220-11210-4
Date Sampled	Unrestricted Use	12/11/2009	12/11/2009	12/29/2009	12/29/2009		12/29/2009	12/29/2009
Dilution	mg/kg	1	1	5	5	8	5	4
				Low	Low	Medium	Low	Low
Analyte								
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00056 U	0.00061 U	0.003 U	0.003 U	0.56 U H	0.0027 U	0.0024 U
1,1,2,2-Tetrachloroethane	NS	0.00055 U	0.00059 U	0.0029 U	0.0029 U	0.59 U H	0.0027 U	0.0024 U
1,1,2-Trichloroethane	NS	0.00039 U	0.00042 U	0.0021 U	0.0021 U	0.61 U H	0.0019 U	0.0017 U
1,1-Dichloroethane	0.27	0.00032 U	0.00034 U	0.0017 U	0.0017 U	0.65 U H	0.0015 U	0.0014 U
1,1-Dichloroethene	0.33	0.00062 U	0.00066 U	0.0032 U *	0.0032 U *	0.67 U H	0.003 U	0.0026 U *
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00062 U	0.00066 U	0.0032 U	0.0032 U	0.53 U H	0.003 U	0.0026 U
1,2-Dichloropropane	NS	0.00071 U	0.00076 U	0.0037 U	0.0038 U	0.47 U H	0.0035 U	0.0031 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0017 U	0.0018 U	0.0089 U	0.0089 U	0.99 U H	0.0082 U	0.0072 U
2-Hexanone	NS	0.0013 U	0.0014 U	0.0067 U	0.0067 U	1.2 U H	0.0062 U	0.0055 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00059 U	0.00063 U	0.0031 U	0.0031 U	0.74 U H	0.0028 U	0.0025 U
Acetone	0.05	0.038	0.02 J	0.012 U	0.024 J B	2.2 U H *	0.021 J *	0.012 J B
Benzene	0.06	0.00061 U	0.00065 U	0.0032 U	0.0032 U	0.59 U H	0.0029 U	0.0026 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00032 U	0.00034 U	0.0017 U	0.0017 U	0.62 U H	0.0015 U	0.0014 U
Bromoform	NS	0.00065 U	0.0007 U	0.0034 U	0.0034 U	0.72 U H	0.0031 U	0.0028 U
Bromomethane	NS	0.0022 U	0.0024 U	0.012 U	0.012 U	0.82 U H	0.011 U	0.0095 U
Carbon disulfide	NS	0.00044 U	0.00047 U	0.0023 U	0.0023 U	0.59 U H	0.0021 U	0.0019 U
Carbon tetrachloride	0.76	0.001 U	0.0011 U	0.0053 U	0.0053 U	0.69 U H	0.0049 U	0.0043 U
Chlorobenzene	1.1	0.00063 U	0.00067 U	0.0033 U	0.0033 U	0.56 U H	0.003 U	0.0027 U
Chloroethane	NS	0.001 U	0.0011 U	0.0055 U	0.0055 U	0.72 U H	0.0051 U	0.0045 U
Chloroform	0.37	0.00036 U	0.00039 U	0.0019 U	0.0019 U	0.56 U H	0.0018 U	0.0015 U
Chloromethane	NS	0.00083 U	0.00089 U	0.0043 U	0.0044 U	0.57 U H	0.004 U	0.0036 U
cis-1,2-Dichloroethene	0.25	0.00039 U	0.0041 J	0.0021 U	0.0026 J	0.54 U H	0.0019 U	0.0037 J
cis-1,3-Dichloropropene	NS	0.0006 U	0.00064 U	0.0031 U	0.0031 U	0.55 U H	0.0029 U	0.0026 U
Dibromochloromethane	NS	0.00037 U	0.0004 U	0.0019 U	0.002 U	0.7 U H	0.0018 U	0.0016 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00075 U	0.0008 U	0.0039 U	0.0039 U	0.47 U H	0.0036 U	0.0032 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0016 J	0.0013 J	0.024 J B	0.019 J B	0.74 J H B	0.011 J B	0.012 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00016 U	0.00017 U	0.00084 U	0.00084 U	0.72 U H	0.00077 U	0.00068 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.00086 U	0.00092 U	1	5 E	89 H	0.55	0.48
Toluene	0.7	0.00096 J B	0.00055 J B	0.00041 U	0.0018 J	0.65 U H	0.00038 U	0.00034 U
trans-1,2-Dichloroethene	0.19	0.00042 U	0.00045 U	0.0022 U	0.0022 U	0.48 U H	0.002 U	0.0018 U
trans-1,3-Dichloropropene	NS	0.00029 U	0.00031 U	0.0015 U	0.0015 U	0.56 U H	0.0014 U	0.0012 U
Trichloroethene	0.47	0.00086 U	0.00092 U	0.0045 U	0.0045 U	0.58 U H	0.0042 U	0.0037 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00024 U	0.0017 J	0.0013 U	0.0013 U	0.6 U H	0.0012 U	0.001 U
Xylenes, Total	1.6	0.0019 J	0.00055 U	0.0027 U	0.0027 U	1.9 U H	0.0025 U	0.0022 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID	NYSDEC	SB-37 (9-10.5)	SB-37 (10.5-12)		SB-37 (12-13.5)	SB-37 (13.5-15)		SB-38 (1.5-3)
Lab Sample ID	Part 375 SCO for	220-11210-5	220-11210-6		220-11210-7	220-11210-8		220-11210-9
Date Sampled	Unrestricted Use	12/29/2009	12/29/2009		12/29/2009	12/29/2009		12/29/2009
Dilution	mg/kg	5	1	20	5	5	4	5
		Low	Low	Medium	Low	Low	Medium	Low
Analyte								
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.003 U	0.00071 U	1.7 U H	0.0028 U	0.0028 U	0.26 U H	0.0029 U
1,1,2,2-Tetrachloroethane	NS	0.003 U	0.0007 U	1.8 U H	0.0027 U	0.0027 U	0.28 U H	0.0029 U
1,1,2-Trichloroethane	NS	0.0021 U	0.0005 U	1.8 U H	0.0019 U	0.0019 U	0.29 U H	0.002 U
1,1-Dichloroethane	0.27	0.0017 U	0.0004 U	1.9 U H	0.0016 U	0.0016 U	0.3 U H	0.0017 U
1,1-Dichloroethene	0.33	0.0033 U	0.00078 U	2 U H	0.003 U *	0.003 U *	0.32 U H	0.0032 U *
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.0033 U	0.00078 U	1.6 U H	0.003 U	0.003 U	0.25 U H	0.0032 U
1,2-Dichloropropane	NS	0.0038 U	0.0009 U	1.4 U H	0.0035 U	0.0035 U	0.22 U H	0.0037 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0091 U	0.0021 U	2.9 U H	0.0083 U	0.0084 U	0.46 U H	0.0088 U
2-Hexanone	NS	0.0068 U	0.0016 U	3.5 U H	0.0063 U	0.0063 U	0.55 U H	0.0066 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.0031 U	0.00074 U	2.2 U H	0.0029 U	0.0029 U	0.34 U H	0.003 U
Acetone	0.05	0.029 J *	0.003 U *	6.4 U H *	0.026 J B	0.035 J B	1 U H *	0.012 U
Benzene	0.06	0.0033 U	0.00076 U	1.8 U H	0.003 U	0.003 U	0.28 U H	0.0031 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.0017 U	0.0004 U	1.8 U H	0.0016 U	0.0016 U	0.29 U H	0.0017 U
Bromoform	NS	0.0035 U	0.00082 U	2.1 U H	0.0032 U	0.0032 U	0.34 U H	0.0034 U
Bromomethane	NS	0.012 U	0.0028 U	2.5 U H	0.011 U	0.011 U	0.39 U H	0.011 U
Carbon disulfide	NS	0.0023 U	0.00055 U	1.8 U H	0.0021 U	0.0022 U	0.28 U H	0.0023 U
Carbon tetrachloride	0.76	0.0054 U	0.0013 U	2.1 U H	0.005 U	0.005 U	0.32 U H	0.0052 U
Chlorobenzene	1.1	0.0034 U	0.00079 U	1.7 U H	0.0031 U	0.0031 U	0.26 U H	0.0033 U
Chloroethane	NS	0.0056 U	0.0013 U	2.1 U H	0.0051 U	0.0051 U	0.34 U H	0.0054 U
Chloroform	0.37	0.0019 U	0.00057 J	1.7 U H	0.0018 U	0.0018 U	0.26 U H	0.0019 U
Chloromethane	NS	0.0045 U	0.001 U	1.7 U H	0.0041 U	0.0041 U	0.27 U H	0.0043 U
cis-1,2-Dichloroethene	0.25	0.0021 U	2.8 E	**81 H**	0.013 J	0.22	2.9 H	0.002 U
cis-1,3-Dichloropropene	NS	0.0032 U	0.00075 U	1.6 U H	0.0029 U	0.0029 U	0.26 U H	0.0031 U
Dibromochloromethane	NS	0.002 U	0.00047 U	2.1 U H	0.0018 U	0.0018 U	0.33 U H	0.0019 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.004 U	0.00094 U	1.4 U H	0.0037 U	0.0037 U	0.22 U H	0.0039 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.012 J B	0.0066 J B	2.4 J H B	0.026 J B	0.02 J B	0.34 U H	0.024 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00086 U	0.0002 U	2.1 U H	0.00078 U	0.00079 U	0.34 U H	0.00083 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.65	0.98 E	**310 H**	0.78	2.5 E	**81 H**	1
Toluene	0.7	0.00042 U	0.00092 J	1.9 U H	0.0016 J	0.0015 J	0.3 U H	0.0021 J
trans-1,2-Dichloroethene	0.19	0.0022 U	0.064	1.7 J H	0.002 U	0.002 U	0.22 U H	0.0021 U
trans-1,3-Dichloropropene	NS	0.0015 U	0.00036 U	1.7 U H	0.0014 U	0.0014 U	0.26 U H	0.0015 U
Trichloroethene	0.47	0.0046 U	1.4 E	**44 H**	0.0042 U	0.053	1.2 J H	0.0045 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.0013 U	0.0051 J	1.8 U H	0.0012 U	0.019 J	0.28 U H	0.0013 U
Xylenes, Total	1.6	0.0028 U	0.00065 U	5.6 U H	0.0025 U	0.0026 U	0.88 U H	0.0027 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-38 (3-4.5) 220-11210-10 12/29/2009 1 Low	SB-38 (4.5-6) 220-11210-11 12/29/2009 5 Low	SB-38 (6-7.5) 220-11210-12 12/29/2009 2 Low	SB-38 (7.5-9) 220-11210-13 12/29/2009 1 Low	SB-39 (0-1.5) 220-11210-14 12/29/2009 1 Low	SB-39 (1.5-3) 220-11210-15 12/29/2009 1 Low	SB-39 (3-4.5) 220-11210-16 12/29/2009 1 Low
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00054 U	0.003 U	0.0011 U	0.00057 U	0.00055 U	0.00056 U	0.00054 U
1,1,2,2-Tetrachloroethane	NS	0.00053 U	0.0029 U	0.0011 U	0.00055 U	0.00054 U	0.00055 U	0.00053 U
1,1,2-Trichloroethane	NS	0.00038 U	0.0021 U	0.00079 U	0.00039 U	0.00039 U	0.00039 U	0.00038 U
1,1-Dichloroethane	0.27	0.00031 U	0.0017 U	0.00064 U	0.00032 U	0.00031 U	0.00032 U	0.00031 U
1,1-Dichloroethene	0.33	0.00059 U	0.0032 U *	0.0012 U *	0.00062 U *	0.0006 U	0.00062 U	0.0006 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00059 U	0.0032 U	0.0012 U	0.00062 U	0.0006 U	0.00062 U	0.0006 U
1,2-Dichloropropane	NS	0.00068 U	0.0037 U	0.0014 U	0.00071 U	0.0007 U	0.00071 U	0.00069 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0016 U	0.0089 U	0.0034 U	0.0017 U	0.0017 U	0.0017 U	0.0016 U
2-Hexanone	NS	0.0012 U	0.0067 U	0.0025 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00056 U	0.0031 U	0.0012 U	0.00059 U	0.00057 U	0.00059 U	0.00056 U
Acetone	0.05	0.0056 J *	0.051 J B	0.017 J B	0.015 J B	0.0023 U *	0.0024 U *	0.0023 U *
Benzene	0.06	0.00058 U	0.0032 U	0.0012 U	0.00061 U	0.00059 U	0.00061 U	0.00059 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00031 U	0.0017 U	0.00064 U	0.00032 U	0.00031 U	0.00032 U	0.00031 U
Bromoform	NS	0.00062 U	0.0034 U	0.0013 U	0.00065 U	0.00064 U	0.00065 U	0.00063 U
Bromomethane	NS	0.0021 U	0.012 U	0.0044 U	0.0022 U	0.0022 U	0.0022 U	0.0021 U
Carbon disulfide	NS	0.00042 U	0.0023 U	0.00087 U	0.00044 U	0.00043 U	0.00044 U	0.00042 U
Carbon tetrachloride	0.76	0.00097 U	0.0053 U	0.002 U	0.001 U	0.00099 U	0.001 U	0.00098 U
Chlorobenzene	1.1	0.0006 U	0.0033 U	0.0013 U	0.00063 U	0.00062 U	0.00063 U	0.00061 U
Chloroethane	NS	0.001 U	0.0055 U	0.0021 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.37	0.00035 U	0.0019 U	0.00072 U	0.00036 U	0.00035 U	0.00036 U	0.00035 U
Chloromethane	NS	0.0008 U	0.0043 U	0.0017 U	0.00083 U	0.00081 U	0.00083 U	0.0008 U
cis-1,2-Dichloroethene	0.25	0.00038 U	0.0028 J	0.0013 J	0.00067 J	0.00039 U	0.00076 J	0.00038 U
cis-1,3-Dichloropropene	NS	0.00057 U	0.0031 U	0.0012 U	0.0006 U	0.00058 U	0.0006 U	0.00058 U
Dibromochloromethane	NS	0.00036 U	0.0019 U	0.00074 U	0.00037 U	0.00036 U	0.00037 U	0.00036 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00071 U	0.0039 U	0.0015 U	0.00075 U	0.00073 U	0.00074 U	0.00072 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0039 J B	0.013 J B	0.0086 J B	0.0035 J B	0.0056 J B	0.005 J B	0.0041 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00015 U	0.00083 U	0.00032 U	0.00016 U	0.00016 U	0.00016 U	0.00015 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.049	0.86	0.25	0.038	0.057	0.13	0.025
Toluene	0.7	0.00033 J	0.00041 U	0.00043 J	0.000079 U	0.00025 J	0.00054 J	0.00041 J
trans-1,2-Dichloroethene	0.19	0.0004 U	0.0022 U	0.00083 U	0.00042 U	0.00041 U	0.00041 U	0.0004 U
trans-1,3-Dichloropropene	NS	0.00028 U	0.0015 U	0.00057 U	0.00029 U	0.00028 U	0.00029 U	0.00028 U
Trichloroethene	0.47	0.00083 U	0.0045 U	0.0017 U	0.00086 U	0.00084 U	0.0023 J	0.00083 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00023 U	0.0013 U	0.00049 U	0.00025 U	0.00024 U	0.00024 U	0.00024 U
Xylenes, Total	1.6	0.0005 U	0.011 J	0.0049 J	0.00052 U	0.00051 U	0.00052 U	0.0005 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-39 (4.5-6) 220-11210-17 12/29/2009 1 Low	SB-39 (6-7.5) 220-11210-18 12/29/2009 2 Low	SB-39 (7.5-9) 220-11210-19 12/29/2009 1 Low	SB-39 (9-10.5) 220-11210-20 12/29/2009 4 Low	SB-39 (10.5-12) 220-11210-21 12/29/2009 1 Low	SB-39 (12-13.5) 220-11210-22 12/29/2009 4 Low	SB-39 (13.5-15) 220-11210-23 12/29/2009 4 Low
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.0006 U	0.0012 U	0.00059 U	0.0022 U	0.00067 U	0.0023 U	0.004 U
1,1,2,2-Tetrachloroethane	NS	0.00059 U	0.0011 U	0.00058 U	0.0022 U	0.00066 U	0.0023 U	0.0039 U
1,1,2-Trichloroethane	NS	0.00042 U	0.00082 U	0.00041 U	0.0015 U	0.00047 U	0.0016 U	0.0028 U
1,1-Dichloroethane	0.27	0.00034 U	0.00066 U	0.00033 U	0.0013 U	0.00038 U	0.0013 U	0.0023 U
1,1-Dichloroethene	0.33	0.00066 U	0.0013 U	0.00064 U	0.0024 U	0.00074 U	0.0026 U	0.0044 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00066 U	0.0013 U	0.00064 U	0.0024 U	0.00074 U	0.0026 U	0.0044 U
1,2-Dichloropropane	NS	0.00076 U	0.0015 U	0.00074 U	0.0028 U	0.00085 U	0.003 U	0.0051 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0018 U	0.0035 U	0.0018 U	0.0066 U	0.002 U	0.007 U	0.12
2-Hexanone	NS	0.0014 U	0.0027 U	0.0013 U	0.005 U	0.0015 U	0.0053 U	0.0091 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00063 U	0.0012 U	0.00061 U	0.0023 U	0.0007 U	0.0024 U	0.0042 U
Acetone	0.05	0.0077 J *	0.0081 J *	0.01 J *	0.014 J *	0.022 J *	0.0099 U *	**0.52** *
Benzene	0.06	0.00065 U	0.0013 U	0.00063 U	0.0024 U	0.00072 U	0.0025 U	0.0043 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00034 U	0.00066 U	0.00033 U	0.0013 U	0.00038 U	0.0013 U	0.0023 U
Bromoform	NS	0.00069 U	0.0013 U	0.00068 U	0.0025 U	0.00077 U	0.0027 U	0.0046 U
Bromomethane	NS	0.0024 U	0.0046 U	0.0023 U	0.0087 U	0.0026 U	0.0092 U	0.016 U
Carbon disulfide	NS	0.00047 U	0.00091 U	0.00045 U	0.0017 U	0.00052 U	0.0018 U	0.011 J
Carbon tetrachloride	0.76	0.0011 U	0.0021 U	0.0011 U	0.004 U	0.0012 U	0.0042 U	0.0072 U
Chlorobenzene	1.1	0.00067 U	0.0013 U	0.00065 U	0.0025 U	0.00075 U	0.0026 U	0.0045 U
Chloroethane	NS	0.0011 U	0.0022 U	0.0011 U	0.0041 U	0.0012 U	0.0043 U	0.0074 U
Chloroform	0.37	0.00039 U	0.00075 U	0.00038 U	0.0014 U	0.00043 U	0.0015 U	0.0026 U
Chloromethane	NS	0.00089 U	0.0017 U	0.00086 U	0.0033 U	0.00099 U	0.0034 U	0.0059 U
cis-1,2-Dichloroethene	0.25	0.0035 J	0.017	0.004 J	0.021 J	0.013	0.018 J	0.018 J
cis-1,3-Dichloropropene	NS	0.00064 U	0.0012 U	0.00062 U	0.0023 U	0.00071 U	0.0025 U	0.0043 U
Dibromochloromethane	NS	0.0004 U	0.00077 U	0.00039 U	0.0015 U	0.00044 U	0.0015 U	0.0027 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.0008 U	0.0015 U	0.00078 U	0.0029 U	0.00089 U	0.0031 U	0.0053 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0029 J B	0.0074 J B	0.0041 J B	0.02 J B	0.0037 J B	0.014 J B	0.019 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00017 U	0.00033 U	0.00017 U	0.00063 U	0.00019 U	0.00066 U	0.0011 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.081	0.19	0.092	0.41	0.0014 J	0.46 *	0.0097 J
Toluene	0.7	0.00016 J	0.00016 U	0.00024 J	0.00073 J	0.000094 U	0.00053 J	0.0048 J
trans-1,2-Dichloroethene	0.19	0.00044 U	0.00086 U	0.00043 U	0.0016 U	0.0005 U	0.0017 U	0.003 U
trans-1,3-Dichloropropene	NS	0.00031 U	0.0006 U	0.0003 U	0.0011 U	0.00034 U	0.0012 U	0.002 U
Trichloroethene	0.47	0.0045 J	0.018	0.0057	0.05	0.001 U	0.043	0.0061 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00026 U	0.00051 U	0.00026 U	0.00096 U	**0.021**	0.001 U	0.0017 U
Xylenes, Total	1.6	0.00055 U	0.0011 U	0.00054 U	0.002 U	0.00062 U	0.0021 U	0.0037 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-40 (0-1.5) 220-11210-24 12/29/2009 1 Low	SB-40 (3-4.5) 220-11210-26 12/29/2009 1 Low	SB-40 (4.5-6) 220-11210-27 12/29/2009 1 Low	SB-40 (6-7.5) 220-11210-28 12/29/2009 1 Low	SB-40 (7.5-9) 220-11210-29 12/29/2009 1 Low	SB-40 (9-10.5) 220-11210-30 12/29/2009 1 Low	SB-40 (10.5-12) 220-11210-31 12/29/2009 1 Low
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00056 U	0.00059 U	0.00059 U	0.0006 U	0.00059 U	0.00055 U	0.00058 U
1,1,2,2-Tetrachloroethane	NS	0.00055 U	0.00058 U	0.00058 U	0.00059 U	0.00058 U	0.00054 U	0.00056 U
1,1,2-Trichloroethane	NS	0.00039 U	0.00041 U	0.00041 U	0.00042 U	0.00041 U	0.00039 U	0.0004 U
1,1-Dichloroethane	0.27	0.00032 U	0.00033 U	0.00033 U	0.00034 U	0.00034 U	0.00031 U	0.00033 U
1,1-Dichloroethene	0.33	0.00061 U	0.00064 U	0.00065 U	0.00066 U	0.00065 U	0.00061 U	0.00063 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00061 U	0.00064 U	0.00065 U	0.00066 U	0.00065 U	0.00061 U	0.00063 U
1,2-Dichloropropane	NS	0.00071 U	0.00074 U	0.00075 U	0.00076 U	0.00075 U	0.0007 U	0.00073 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U
2-Hexanone	NS	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00058 U	0.00061 U	0.00061 U	0.00063 U	0.00061 U	0.00057 U	0.0006 U
Acetone	0.05	0.0057 J *	0.0025 U *	0.0025 U *	0.0025 U *	0.0025 U *	0.026 *	0.0024 U *
Benzene	0.06	0.0006 U	0.00063 U	0.00063 U	0.00065 U	0.00064 U	0.00059 U	0.00062 U
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00032 U	0.00033 U	0.00033 U	0.00034 U	0.00034 U	0.00031 U	0.00033 U
Bromoform	NS	0.00065 U	0.00068 U	0.00068 U	0.00069 U	0.00068 U	0.00064 U	0.00066 U
Bromomethane	NS	0.0022 U	0.0023 U	0.0023 U	0.0024 U	0.0023 U	0.0022 U	0.0023 U
Carbon disulfide	NS	0.00043 U	0.00045 U	0.00046 U	0.00047 U	0.00046 U	0.00043 U	0.00045 U
Carbon tetrachloride	0.76	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.00099 U	0.001 U
Chlorobenzene	1.1	0.00062 U	0.00065 U	0.00066 U	0.00067 U	0.00066 U	0.00062 U	0.00064 U
Chloroethane	NS	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.001 U	0.0011 U
Chloroform	0.37	0.00036 U	0.00038 U	0.00038 U	0.00039 U	0.00038 U	0.00035 U	0.00037 U
Chloromethane	NS	0.00083 U	0.00086 U	0.00087 U	0.00089 U	0.00087 U	0.00081 U	0.00085 U
cis-1,2-Dichloroethene	0.25	0.00039 U	0.00041 U	0.00041 U	0.00042 U	0.00041 U	0.00039 U	0.0004 U
cis-1,3-Dichloropropene	NS	0.00059 U	0.00062 U	0.00062 U	0.00064 U	0.00063 U	0.00058 U	0.00061 U
Dibromochloromethane	NS	0.00037 U	0.00039 U	0.00039 U	0.0004 U	0.00039 U	0.00037 U	0.00038 U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00074 U	0.00078 U	0.00078 U	0.0008 U	0.00078 U	0.00073 U	0.00076 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.0062 J B	0.0044 J B	0.0033 J B	0.0039 J B	0.0035 J B	0.0074 J B	0.0029 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00016 U	0.00016 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.022	0.064	0.11	0.12	0.05	0.027	0.025
Toluene	0.7	0.00042 J	0.00043 J	0.00036 J	0.000084 U	0.00019 J	0.00055 J	0.00008 U
trans-1,2-Dichloroethene	0.19	0.00041 U	0.00043 U	0.00043 U	0.00044 U	0.00044 U	0.00041 U	0.00042 U
trans-1,3-Dichloropropene	NS	0.00029 U	0.0003 U	0.0003 U	0.00031 U	0.0003 U	0.00028 U	0.00029 U
Trichloroethene	0.47	0.00086 U	0.0039 J	0.0052 J	0.012	0.0054 J	0.0016 J	0.0059
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00024 U	0.00025 U	0.00026 U	0.00026 U	0.00026 U	0.00024 U	0.00025 U
Xylenes, Total	1.6	0.00051 U	0.00054 U	0.00054 U	0.00055 U	0.00054 U	0.00051 U	0.00053 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 SCO for Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	SB-40 (12-13.5) 220-11210-32 12/29/2009 1 Low	SB-40 (13.5-15) 220-11210-33 12/29/2009 1 Low
1,1,1,2-Tetrachloroethane	NS	NA	NA
1,1,1-Trichloroethane	0.68	0.00055 U	0.00055 U
1,1,2,2-Tetrachloroethane	NS	0.00054 U	0.00054 U
1,1,2-Trichloroethane	NS	0.00039 U	0.00038 U
1,1-Dichloroethane	0.27	0.00031 U	0.00031 U
1,1-Dichloroethene	0.33	0.0006 U	0.0006 U
1,1-Dichloropropene	NS	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA
1,2-Dibromoethane	NS	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA
1,2-Dichloroethane	0.02	0.0006 U	0.0006 U
1,2-Dichloropropane	NS	0.0007 U	0.0007 U
1,3,5-Trimethylbenzene	8.4	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA
1,3-Dichloropropane	NS	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA
1,4-Diethylbenzene	NS	NA	NA
2,2-Dichloropropane	NS	NA	NA
2-Butanone	0.12	0.0017 U	0.0017 U
2-Hexanone	NS	0.0013 U	0.0012 U
4-Ethyltoluene	NS	NA	NA
4-Methyl-2-pentanone	NS	0.00057 U	0.00057 U
Acetone	0.05	0.022 *	0.03 *
Benzene	0.06	0.00059 U	0.00059 U
Bromobenzene	NS	NA	NA
Bromochloromethane	NS	NA	NA
Bromodichloromethane	NS	0.00031 U	0.00031 U
Bromoform	NS	0.00064 U	0.00063 U
Bromomethane	NS	0.0022 U	0.0022 U
Carbon disulfide	NS	0.00043 U	0.00043 U
Carbon tetrachloride	0.76	0.00099 U	0.00099 U
Chlorobenzene	1.1	0.00061 U	0.00061 U
Chloroethane	NS	0.001 U	0.001 U
Chloroform	0.37	0.00035 U	0.00035 U
Chloromethane	NS	0.00081 U	0.00081 U
cis-1,2-Dichloroethene	0.25	0.00039 U	0.00038 U
cis-1,3-Dichloropropene	NS	0.00058 U	0.00058 U
Dibromochloromethane	NS	0.00036 U	0.00036 U
Dibromomethane	NS	NA	NA
Dichlorodifluoromethane	NS	NA	NA
Ethylbenzene	1	0.00073 U	0.00073 U
Hexachlorobutadiene	NS	NA	NA
Isopropylbenzene	NS	NA	NA
Methyl tert butyl ether	0.93	NA	NA
Methylene chloride	0.05	0.0093 J B	0.0086 J B
n-Butylbenzene	12	NA	NA
n-Propylbenzene	3.9	NA	NA
Naphthalene	12	NA	NA
o-Chlorotoluene	NS	NA	NA
o-Xylene	1.6	NA	NA
p-Chlorotoluene	NS	NA	NA
p-Isopropyltoluene	NS	NA	NA
p/m-Xylene	1.6	NA	NA
sec-Butylbenzene	11	NA	NA
Styrene	NS	0.00016 U	0.00016 U
tert-Butylbenzene	5.9	NA	NA
Tetrachloroethene	1.3	0.022	0.034
Toluene	0.7	0.00054 J	0.00057 J
trans-1,2-Dichloroethene	0.19	0.00041 U	0.00041 U
trans-1,3-Dichloropropene	NS	0.00028 U	0.00028 U
Trichloroethene	0.47	0.0016 J	0.0033 J
Trichlorofluoromethane	NS	NA	NA
Vinyl acetate	NS	NA	NA
Vinyl chloride	0.02	0.00024 U	0.00024 U
Xylenes, Total	1.6	0.00051 U	0.00051 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	M-7 (10-12') 200798-1 3/26/2002	M-7D (10-12') 200798-2 3/26/2002 Duplicate Sample of M-7(10-12')	M-8 (10-12') 200798-3 3/26/2002	BLIND(M-8 10-12') 200798-4 3/26/2002 Duplicate Sample of M-8 (10-12')	M-11D (10-12) L0716048-03 10/23/2007
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	0.005 U
1,1,1-Trichloroethane	0.68	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
1,1,2,2-Tetrachloroethane	NS	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U
1,1,2-Trichloroethane	NS	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0075 U
1,1-Dichloroethane	0.27	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0075 U
1,1-Dichloroethene	0.33	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	0.025 U
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	0.025 U
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	0.025 U
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	0.11
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	0.025 U
1,2-Dibromoethane	NS	NA	NA	NA	NA	0.02 U
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	0.025 U
1,2-Dichloroethane	0.02	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
1,2-Dichloropropane	NS	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.018 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	0.079
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	0.025 U
1,3-Dichloropropane	NS	NA	NA	NA	NA	0.025 U
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	0.025 U
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	0.025 U
2-Butanone	0.12	0.009 J	0.017	0.004 U	0.004 U	0.062
2-Hexanone	NS	0.005 U	0.005 U	0.005 U	0.005 U	0.05 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.004 U	0.004 U	0.004 U	0.004 U	0.05 U
Acetone	0.05	0.034 B	0.052 B	0.035 B	0.041 B	0.23
Benzene	0.06	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
Bromobenzene	NS	NA	NA	NA	NA	0.025 U
Bromochloromethane	NS	NA	NA	NA	NA	0.025 U
Bromodichloromethane	NS	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
Bromoform	NS	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.02 U
Bromomethane	NS	0.003 U	0.003 U	0.003 U	0.003 U	0.01 U
Carbon disulfide	NS	0.005 J	0.004 J	0.0003 UB	0.005 J	0.05 U
Carbon tetrachloride	0.76	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
Chlorobenzene	1.1	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
Chloroethane	NS	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.01 U
Chloroform	0.37	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0075 U
Chloromethane	NS	0.001 U	0.001 U	0.001 U	0.001 U	0.025 U
cis-1,2-Dichloroethene	0.25	0.0006 U	0.0006 U	0.0006 U	0.0006 U	2.7
cis-1,3-Dichloropropene	NS	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
Dibromochloromethane	NS	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
Dibromomethane	NS	NA	NA	NA	NA	0.05 U
Dichlorodifluoromethane	NS	NA	NA	NA	NA	0.05 U
Ethylbenzene	1	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	0.025 U
Isopropylbenzene	NS	NA	NA	NA	NA	0.011
Methyl tert butyl ether	0.93	NA	NA	NA	NA	0.01 U
Methylene chloride	0.05	0.002 UB	0.002 UB	0.002 U	0.002 UB	0.05 U
n-Butylbenzene	12	NA	NA	NA	NA	0.032
n-Propylbenzene	3.9	NA	NA	NA	NA	0.01
Naphthalene	12	NA	NA	NA	NA	0.035
o-Chlorotoluene	NS	NA	NA	NA	NA	0.025 U
o-Xylene	1.6	NA	NA	NA	NA	0.01 U
p-Chlorotoluene	NS	NA	NA	NA	NA	0.025 U
p-Isopropyltoluene	NS	NA	NA	NA	NA	0.17
p/m-Xylene	1.6	NA	NA	NA	NA	0.01 U
sec-Butylbenzene	11	NA	NA	NA	NA	0.032
Styrene	NS	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.01 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	0.025 U
Tetrachloroethene	1.3	0.012	0.01	0.002 J	0.02	0.009
Toluene	0.7	0.0005 J	0.0005 J	0.0006 U	0.0006 U	0.0075 U
trans-1,2-Dichloroethene	0.19	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.013
trans-1,3-Dichloropropene	NS	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.005 U
Trichloroethene	0.47	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.005 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	0.025 U
Vinyl acetate	NS	0.004 U	0.004 U	0.004 U	0.004 U	0.05 U
Vinyl chloride	0.02	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.69
Xylenes, Total	1.6	0.001 U	0.001 U	0.001 U	0.001 U	0.02 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	M-11D (12-14) L0716048-04 10/23/2007	M-12D (14-16) L0716048-01 10/22/2007	M-12D (10-12) L0716048-02 10/22/2007	M-14D (0-2.5') 220-10802-1 11/23/2009	M-14D (2.5'-5') 220-10802-2 11/23/2009
1,1,1,2-Tetrachloroethane	NS	0.0032 U	0.0043 U	0.0029 U	NA	NA
1,1,1-Trichloroethane	0.68	0.0032 U	0.0043 U	0.0029 U	0.00064 U	0.00062 U
1,1,2,2-Tetrachloroethane	NS	0.0032 U	0.0043 U	0.0029 U	0.00063 U	0.00061 U
1,1,2-Trichloroethane	NS	0.0048 U	0.0065 U	0.0044 U	0.00045 U	0.00043 U
1,1-Dichloroethane	0.27	0.0048 U	0.0065 U	0.0044 U	0.00036 U	0.00035 U
1,1-Dichloroethene	0.33	0.0032 U	0.0043 U	0.0029 U	0.00071 U	0.00068 U
1,1-Dichloropropene	NS	0.016 U	0.022 U	0.014 U	NA	NA
1,2,3-Trichlorobenzene	NS	0.016 U	0.022 U	0.014 U	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	0.016 U	0.022 U	0.014 U	NA	NA
1,2,4-Trimethylbenzene	3.6	0.016 U	0.022 U	0.014 U	NA	NA
1,2-Dibromo-3-chloropropane	NS	0.016 U	0.022 U	0.014 U	NA	NA
1,2-Dibromoethane	NS	0.013 U	0.017 U	0.012 U	NA	NA
1,2-Dichlorobenzene	1.1	0.016 U	0.022 U	0.028	NA	NA
1,2-Dichloroethane	0.02	0.0032 U	0.0043 U	0.0029 U	0.00071 U	0.00068 U
1,2-Dichloropropane	NS	0.011 U	0.015 U	0.01 U	0.00081 U	0.00078 U
1,3,5-Trimethylbenzene	8.4	0.016 U	0.022 U	0.014 U	NA	NA
1,3-Dichlorobenzene	2.4	0.016 U	0.022 U	0.014 U	NA	NA
1,3-Dichloropropane	NS	0.016 U	0.022 U	0.014 U	NA	NA
1,4-Dichlorobenzene	1.8	0.016 U	0.022 U	0.014 U	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	0.016 U	0.022 U	0.014 U	NA	NA
2-Butanone	0.12	0.032 U	0.043 U	0.029 U	0.0019 U *	0.0019 U *
2-Hexanone	NS	0.032 U	0.043 U	0.029 U	0.0015 U	0.0014 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.032 U	0.043 U	0.029 U	0.00067 U	0.00064 U
Acetone	0.05	0.049	0.088	0.063	0.0082 J B	0.071 B
Benzene	0.06	0.0032 U	0.0043 U	0.0029 U	0.00069 U	0.00066 U
Bromobenzene	NS	0.016 U	0.022 U	0.014 U	NA	NA
Bromochloromethane	NS	0.016 U	0.022 U	0.014 U	NA	NA
Bromodichloromethane	NS	0.0032 U	0.0043 U	0.0029 U	0.00036 U	0.00035 U
Bromoform	NS	0.013 U	0.017 U	0.012 U	0.00074 U	0.00071 U
Bromomethane	NS	0.0064 U	0.0086 U	0.0058 U	0.0025 U *	0.0024 U *
Carbon disulfide	NS	0.032 U	0.043 U	0.029 U	0.0005 U	0.00048 U
Carbon tetrachloride	0.76	0.0032 U	0.0043 U	0.0029 U	0.0012 U	0.0011 U
Chlorobenzene	1.1	0.0032 U	0.0043 U	0.0029 U	0.00072 U	0.00069 U
Chloroethane	NS	0.0064 U	0.0086 U	0.0058 U	0.0012 U	0.0011 U
Chloroform	0.37	0.0048 U	0.0065 U	0.0044 U	0.00041 U	0.0004 U
Chloromethane	NS	0.016 U	0.022 U	0.014 U	0.00095 U	0.00091 U
cis-1,2-Dichloroethene	0.25	0.0032 U	0.0043 U	0.0029 U	0.00045 U	0.00043 U
cis-1,3-Dichloropropene	NS	0.0032 U	0.0043 U	0.0029 U	0.00068 U	0.00065 U
Dibromochloromethane	NS	0.0032 U	0.0043 U	0.0029 U	0.00043 U	0.00041 U
Dibromomethane	NS	0.032 U	0.043 U	0.029 U	NA	NA
Dichlorodifluoromethane	NS	0.032 U	0.043 U	0.029 U	NA	NA
Ethylbenzene	1	0.0032 U	0.0043 U	0.0029 U	0.00085 U	0.00081 U
Hexachlorobutadiene	NS	0.016 U	0.022 U	0.014 U	NA	NA
Isopropylbenzene	NS	0.038	0.016	0.28	NA	NA
Methyl tert butyl ether	0.93	0.0064 U	0.0086 U	0.0058 U	NA	NA
Methylene chloride	0.05	0.032 U	0.043 U	0.029 U	0.0056 J B	0.012 J B
n-Butylbenzene	12	0.064	0.036	0.46	NA	NA
n-Propylbenzene	3.9	0.094	0.033	0.6	NA	NA
Naphthalene	12	0.016 U	0.084	0.2	NA	NA
o-Chlorotoluene	NS	0.016 U	0.022 U	0.014 U	NA	NA
o-Xylene	1.6	0.0064 U	0.0086 U	0.0058 U	NA	NA
p-Chlorotoluene	NS	0.016 U	0.022 U	0.014 U	NA	NA
p-Isopropyltoluene	NS	0.0032 U	0.0043 U	0.0029 U	NA	NA
p/m-Xylene	1.6	0.0064 U	0.0086 U	0.0058 U	NA	NA
sec-Butylbenzene	11	0.075	0.046	0.35	NA	NA
Styrene	NS	0.0064 U	0.0086 U	0.0058 U	0.00018 U	0.00017 U
tert-Butylbenzene	5.9	0.016 U	0.022 U	0.032	NA	NA
Tetrachloroethene	1.3	0.12	0.0043 U	0.0065	0.00098 U	0.00094 U
Toluene	0.7	0.0048 U	0.0065 U	0.0044 U	0.0002 J	0.00021 J
trans-1,2-Dichloroethene	0.19	0.0048 U	0.0065 U	0.0044 U	0.00047 U	0.00045 U
trans-1,3-Dichloropropene	NS	0.0032 U	0.0043 U	0.0029 U	0.00033 U	0.00031 U
Trichloroethene	0.47	0.0045	0.0043 U	0.0029 U	0.00098 U	0.00094 U
Trichlorofluoromethane	NS	0.016 U	0.022 U	0.014 U	NA	NA
Vinyl acetate	NS	0.032 U	0.043 U	0.029 U	NA	NA
Vinyl chloride	0.02	0.0064 U	0.0086 U	0.0058 U	0.00028 U	0.00027 U
Xylenes, Total	1.6	0.0128 U	0.0172 U	0.0116 U	0.00098 J	0.00057 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	M-14D (5'-7.5') 220-10802-3 11/23/2009	M-14D (7.5'-10') 220-10802-4 11/23/2009	M-14D (10'-12.5') 220-10802-5 11/23/2009	M-14D (12.5'-15') 220-10802-6 11/23/2009	M-14D (15'-17.5') 220-10802-7 11/23/2009
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00062 U	0.00089 U	0.00093 U	0.001 U	0.00093 U
1,1,2,2-Tetrachloroethane	NS	0.00061 U	0.00088 U	0.00092 U	0.001 U	0.00091 U
1,1,2-Trichloroethane	NS	0.00044 U	0.00062 U	0.00065 U	0.00073 U	0.00065 U
1,1-Dichloroethane	0.27	0.00035 U	0.00051 U	0.00053 U	0.00059 U	0.00052 U
1,1-Dichloroethene	0.33	0.00068 U	0.00098 U	0.001 U	0.0011 U	0.001 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.00068 U	0.00098 U	0.001 U	0.0011 U	0.001 U
1,2-Dichloropropane	NS	0.00079 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA
2-Butanone	0.12	0.0019 U *	0.029 *	0.0028 U *	0.0031 U *	0.0028 U *
2-Hexanone	NS	0.0014 U	0.002 U	0.0021 U	0.0024 U	0.0021 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.00065 U	0.00093 U	0.00097 U	0.0011 U	0.00096 U
Acetone	0.05	0.053 B	0.15 B	0.042 B	0.088 B	0.055 B
Benzene	0.06	0.00067 U	0.00096 U	0.001 U	0.0011 U	0.001 U
Bromobenzene	NS	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00035 U	0.00051 U	0.00053 U	0.00059 U	0.00052 U
Bromoform	NS	0.00072 U	0.001 U	0.0011 U	0.0012 U	0.0011 U
Bromomethane	NS	0.0024 U *	0.0035 U *	0.0037 U *	0.0041 U	0.0036 U
Carbon disulfide	NS	0.00048 U	0.0035 J	0.0089	0.01	0.017
Carbon tetrachloride	0.76	0.0011 U	0.0016 U	0.0017 U	0.0019 U	0.0017 U
Chlorobenzene	1.1	0.00069 U	0.001 U	0.001 U	0.0012 U	0.001 U
Chloroethane	NS	0.0012 U	0.0017 U	0.0017 U	0.0019 U	0.0017 U
Chloroform	0.37	0.0004 U	0.00057 U	0.0006 U	0.00067 U	0.00059 U
Chloromethane	NS	0.00092 U	0.0013 U	0.0014 U	0.0015 U	0.0014 U
cis-1,2-Dichloroethene	0.25	0.00044 U	0.00062 U	0.00065 U	0.00073 U	0.00065 U
cis-1,3-Dichloropropene	NS	0.00066 U	0.00095 U	0.00099 U	0.0011 U	0.00098 U
Dibromochloromethane	NS	0.00041 U	0.00059 U	0.00062 U	0.00069 U	0.00061 U
Dibromomethane	NS	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA
Ethylbenzene	1	0.00082 U	0.0012 U	0.0012 U	0.0014 U	0.0012 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.013 J B	0.01 J B	0.01 J B	0.01 J B	0.01 J B
n-Butylbenzene	12	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA
Styrene	NS	0.00018 U	0.00025 U	0.00026 U	0.0003 U	0.00026 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.00095 U	0.0014 U	0.0014 U	0.0016 U	0.0014 U
Toluene	0.7	0.00017 J	0.00054 J	0.00028 J	0.00015 U	0.00046 J
trans-1,2-Dichloroethene	0.19	0.00046 U	0.00066 U	0.00069 U	0.00077 U	0.00068 U
trans-1,3-Dichloropropene	NS	0.00032 U	0.00046 U	0.00048 U	0.00053 U	0.00047 U
Trichloroethene	0.47	0.00095 U	0.0014 U	0.0014 U	0.0016 U	0.0014 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	NA	NA
Vinyl chloride	0.02	0.00027 U	0.00039 U	0.00041 U	0.00045 U	0.0004 U
Xylenes, Total	1.6	0.00057 U	0.0015 J	0.00086 U	0.0016 J	0.00085 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	M-14D (17.5'-20') 220-10802-8 11/23/2009	FB-1 220-10802-9 11/23/2009	TB-1 220-10802-10 11/24/2009	FB 200798-5 3/26/2002 Field Blank	TB 200798-6 3/26/2002 Trip Blank
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.68	0.00099 U	0.00069 U	0.00069 U	0.0002 U	0.0002 U
1,1,2,2-Tetrachloroethane	NS	0.00097 U	0.00081 U	0.00081 U	0.0003 U	0.0003 U
1,1,2-Trichloroethane	NS	0.00069 U	0.00065 U	0.00065 U	0.0002 U	0.0002 U
1,1-Dichloroethane	0.27	0.00056 U	0.001 U	0.001 U	0.0003 U	0.0003 U
1,1-Dichloroethene	0.33	0.0011 U	0.00083 U	0.00083 U	0.0006 U	0.0006 U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NS	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.1	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.02	0.0011 U	0.00072 U	0.00072 U	0.0003 U	0.0003 U
1,2-Dichloropropane	NS	0.0013 U	0.00071 U	0.00071 U	0.0003 U	0.0003 U
1,3,5-Trimethylbenzene	8.4	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2.4	NA	NA	NA	NA	NA
1,3-Dichloropropane	NS	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	NA
1,4-Diethylbenzene	NS	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA
2-Butanone	0.12	0.003 U *	0.0012 J	0.0011 U	0.0004 UB	0.0004 UB
2-Hexanone	NS	0.0022 U	0.0011 U	0.0011 U	0.0008 U	0.0008 U
4-Ethyltoluene	NS	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NS	0.001 U	0.00038 U	0.00038 U	0.0004 U	0.0004 U
Acetone	0.05	0.06 B	0.0018 J	0.0022 J	0.0009 UB	0.003 JB
Benzene	0.06	0.0011 U	0.00074 U	0.00074 U	0.0003 U	0.0003 U
Bromobenzene	NS	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.00056 U	0.00048 U	0.00048 U	0.0002 U	0.0002 U
Bromoform	NS	0.0011 U	0.00046 U	0.00046 U	0.0002 U	0.0002 U
Bromomethane	NS	0.0039 U *	0.0021 U	0.0021 U	0.002 U	0.002 U
Carbon disulfide	NS	0.012	0.0009 U	0.0009 U	0.0003 U	0.0003 U
Carbon tetrachloride	0.76	0.0018 U	0.0011 U	0.0011 U	0.0002 U	0.0002 U
Chlorobenzene	1.1	0.0011 U	0.00072 U	0.00072 U	0.0002 U	0.0002 U
Chloroethane	NS	0.0018 U	0.0011 U	0.0011 U	0.004 U	0.004 U
Chloroform	0.37	0.00064 U	0.00067 U	0.00067 U	0.0009 U	0.0009 U
Chloromethane	NS	0.0015 U	0.0011 U	0.0011 U	0.0009 U	0.0009 U
cis-1,2-Dichloroethene	0.25	0.00069 U	0.00099 U	0.00099 U	0.0003 U	0.0003 U
cis-1,3-Dichloropropene	NS	0.001 U	0.00028 U	0.00028 U	0.0003 U	0.0003 U
Dibromochloromethane	NS	0.00066 U	0.00055 U	0.00055 U	0.0002 U	0.0002 U
Dibromomethane	NS	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA
Ethylbenzene	1	0.0013 U	0.00087 U	0.00087 U	0.0003 U	0.0003 U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA
Isopropylbenzene	NS	NA	NA	NA	NA	NA
Methyl tert butyl ether	0.93	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.014 J B	0.0021 J	0.0026 J	0.0002 U	0.0002 U
n-Butylbenzene	12	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	NA	NA	NA	NA	NA
Naphthalene	12	NA	NA	NA	NA	NA
o-Chlorotoluene	NS	NA	NA	NA	NA	NA
o-Xylene	1.6	NA	NA	NA	NA	NA
p-Chlorotoluene	NS	NA	NA	NA	NA	NA
p-Isopropyltoluene	NS	NA	NA	NA	NA	NA
p/m-Xylene	1.6	NA	NA	NA	NA	NA
sec-Butylbenzene	11	NA	NA	NA	NA	NA
Styrene	NS	0.00028 U	0.00064 U	0.00064 U	0.0002 U	0.0002 U
tert-Butylbenzene	5.9	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	0.0015 U	0.00081 U	0.00081 U	0.0003 U	0.0003 U
Toluene	0.7	0.0037 J	0.00072 U	0.00072 U	0.0003 U	0.0003 U
trans-1,2-Dichloroethene	0.19	0.00073 U	0.00076 U	0.00076 U	0.0003 U	0.0003 U
trans-1,3-Dichloropropene	NS	0.00051 U	0.00057 U	0.00057 U	0.0002 U	0.0002 U
Trichloroethene	0.47	0.0015 U	0.00062 U	0.00062 U	0.0008 U	0.0008 U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA
Vinyl acetate	NS	NA	NA	NA	0.0007 U	0.0007 U
Vinyl chloride	0.02	0.00043 U	0.00099 U	0.00099 U	0.0003 U	0.0003 U
Xylenes, Total	1.6	0.00091 U	0.0023 U	0.0023 U	0.0005 U	0.0005 U

Table 4
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	FIELD BLANK 1 L0718726-20 12/14/2007	FIELD BLANK-2 L0800656-02 1/11/2008	FIELD BLANK-3 220-11026-1 12/10/2009 1	TRIP BLANK 220-11210-34 12/29/2009 1	TRIP BLANK 1 L0718726-21 11/30/2007
1,1,1,2-Tetrachloroethane	NS	0.5 U	0.5 U	NA	NA	0.5 U
1,1,1-Trichloroethane	0.68	0.5 U	0.5 U	0.00069 U	0.00069 U	0.5 U
1,1,2,2-Tetrachloroethane	NS	0.5 U	0.5 U	0.00081 U	0.00081 U	0.5 U
1,1,2-Trichloroethane	NS	0.75 U	0.75 U	0.00065 U	0.00065 U	0.75 U
1,1-Dichloroethane	0.27	0.75 U	0.75 U	0.001 U	0.001 U	0.75 U
1,1-Dichloroethene	0.33	0.5 U	0.5 U	0.00083 U	0.00083 U	0.5 U
1,1-Dichloropropene	NS	2.5 U	2.5 U	NA	NA	2.5 U
1,2,3-Trichlorobenzene	NS	2.5 U	2.5 U	NA	NA	2.5 U
1,2,4,5-Tetramethylbenzene	NS	0.5 U	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	NS	2.5 U	2.5 U	NA	NA	2.5 U
1,2,4-Trimethylbenzene	3.6	2.5 U	2.5 U	NA	NA	2.5 U
1,2-Dibromo-3-chloropropane	NS	2.5 U	2.5 U	NA	NA	2.5 U
1,2-Dibromoethane	NS	2 U	2 U	NA	NA	2 U
1,2-Dichlorobenzene	1.1	2.5 U	2.5 U	NA	NA	2.5 U
1,2-Dichloroethane	0.02	0.5 U	0.5 U	0.00072 U	0.00072 U	0.5 U
1,2-Dichloropropane	NS	1.8 U	1.8 U	0.00071 U	0.00071 U	1.8 U
1,3,5-Trimethylbenzene	8.4	2.5 U	2.5 U	NA	NA	2.5 U
1,3-Dichlorobenzene	2.4	2.5 U	2.5 U	NA	NA	2.5 U
1,3-Dichloropropane	NS	2.5 U	2.5 U	NA	NA	2.5 U
1,4-Dichlorobenzene	1.8	2.5 U	2.5 U	NA	NA	2.5 U
1,4-Diethylbenzene	NS	0.5 U	0.5 U	NA	NA	0.5 U
2,2-Dichloropropane	NS	2.5 U	2.5 U	NA	NA	2.5 U
2-Butanone	0.12	5 U	5 U	0.0011 U	0.0011 U	5 U
2-Hexanone	NS	5 U	5 U	0.0011 U	0.0011 U	5 U
4-Ethyltoluene	NS	0.5 U	0.5 U	NA	NA	0.5 U
4-Methyl-2-pentanone	NS	5 U	5 U	0.00038 U	0.00038 U	5 U
Acetone	0.05	5 U	5 U	0.001 U	0.001 U *	5 U
Benzene	0.06	0.5 U	0.5 U	0.00074 U	0.00074 U	0.5 U
Bromobenzene	NS	2.5 U	2.5 U	NA	NA	2.5 U
Bromochloromethane	NS	2.5 U	2.5 U	NA	NA	2.5 U
Bromodichloromethane	NS	0.5 U	0.5 U	0.00048 U	0.00048 U	0.5 U
Bromoform	NS	2 U	2 U	0.00046 U	0.00046 U	2 U
Bromomethane	NS	1 U	1 U	0.0021 U	0.0021 U	1 U
Carbon disulfide	NS	5 U	5 U	0.0009 U	0.0009 U	5 U
Carbon tetrachloride	0.76	0.5 U	0.5 U	0.0011 U	0.0011 U	0.5 U
Chlorobenzene	1.1	0.5 U	0.5 U	0.00072 U	0.00072 U	0.5 U
Chloroethane	NS	1 U	1 U	0.0011 U	0.0011 U	1 U
Chloroform	0.37	0.75 U	0.75 U	0.00067 U	0.00067 U	0.75 U
Chloromethane	NS	2.5 U	2.5 U	0.0011 U	0.0011 U	2.5 U
cis-1,2-Dichloroethene	0.25	0.5 U	0.5 U	0.00099 U	0.00099 U	0.5 U
cis-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.00028 U	0.00028 U	0.5 U
Dibromochloromethane	NS	0.5 U	0.5 U	0.00055 U	0.00055 U	0.5 U
Dibromomethane	NS	5 U	5 U	NA	NA	5 U
Dichlorodifluoromethane	NS	5 U	5 U	NA	NA	5 U
Ethylbenzene	1	0.5 U	0.5 U	0.00087 U	0.00087 U	0.5 U
Hexachlorobutadiene	NS	0.6 U	0.6 U	NA	NA	0.6 U
Isopropylbenzene	NS	0.5 U	0.5 U	NA	NA	0.5 U
Methyl tert butyl ether	0.93	1 U	1 U	NA	NA	1 U
Methylene chloride	0.05	5 U	5 U	0.00078 U	0.0046 J	5 U
n-Butylbenzene	12	0.5 U	0.5 U	NA	NA	0.5 U
n-Propylbenzene	3.9	0.5 U	0.5 U	NA	NA	0.5 U
Naphthalene	12	2.5 U	2.5 U	NA	NA	2.5 U
o-Chlorotoluene	NS	2.5 U	2.5 U	NA	NA	2.5 U
o-Xylene	1.6	1 U	1 U	NA	NA	1 U
p-Chlorotoluene	NS	2.5 U	2.5 U	NA	NA	2.5 U
p-Isopropyltoluene	NS	0.5 U	0.5 U	NA	NA	0.5 U
p/m-Xylene	1.6	1 U	1 U	NA	NA	1 U
sec-Butylbenzene	11	0.5 U	0.5 U	NA	NA	0.5 U
Styrene	NS	1 U	1 U	0.00064 U	0.00064 U	1 U
tert-Butylbenzene	5.9	2.5 U	2.5 U	NA	NA	2.5 U
Tetrachloroethene	1.3	0.5 U	0.5 U	0.00081 U	0.00081 U	0.5 U
Toluene	0.7	0.75 U	0.75 U	0.00072 U	0.00072 U	0.75 U
trans-1,2-Dichloroethene	0.19	0.75 U	0.75 U	0.00076 U	0.00076 U	0.75 U
trans-1,3-Dichloropropene	NS	0.5 U	0.5 U	0.00057 U	0.00057 U	0.5 U
Trichloroethene	0.47	0.5 U	0.5 U	0.00062 U	0.00062 U	0.5 U
Trichlorofluoromethane	NS	2.5 U	2.5 U	NA	NA	2.5 U
Vinyl acetate	NS	5 U	5 U	NA	NA	5 U
Vinyl chloride	0.02	1 U	1 U	0.00099 U	0.00099 U	1 U
Xylenes, Total	1.6	2 U	2 U	0.0023 U	0.0023 U	2 U

Table 4
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Part 375 Unrestricted Use) in Soil Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte	NYSDEC Part 375 SCO for Unrestricted Use mg/kg	TRIP BLANK-2 L0800656-01 1/3/2008	TRIP BLANK-5 220-11026-2 12/10/2009 1	Duplicate-1 L0718726-19 12/14/2007	Duplicate-2 L0800656-29 1/11/2008
1,1,1,2-Tetrachloroethane	NS	0.5 U	NA	0.003 U	0.003 U
1,1,1-Trichloroethane	0.68	0.5 U	0.00069 U	0.003 U	0.003 U
1,1,2,2-Tetrachloroethane	NS	0.5 U	0.00081 U	0.003 U	0.003 U
1,1,2-Trichloroethane	NS	0.75 U	0.00065 U	0.0045 U	0.0045 U
1,1-Dichloroethane	0.27	0.75 U	0.001 U	0.0045 U	0.0045 U
1,1-Dichloroethene	0.33	0.5 U	0.00083 U	0.003 U	0.003 U
1,1-Dichloropropene	NS	2.5 U	NA	0.015 U	0.015 U
1,2,3-Trichlorobenzene	NS	2.5 U	NA	0.015 U	0.015 U
1,2,4,5-Tetramethylbenzene	NS	0.5 U	NA	0.003 U	0.003 U
1,2,4-Trichlorobenzene	NS	2.5 U	NA	0.015 U	0.015 U
1,2,4-Trimethylbenzene	3.6	2.5 U	NA	0.015 U	0.015 U
1,2-Dibromo-3-chloropropane	NS	2.5 U	NA	0.015 U	0.015 U
1,2-Dibromoethane	NS	2 U	NA	0.012 U	0.012 U
1,2-Dichlorobenzene	1.1	2.5 U	NA	0.015 U	0.015 U
1,2-Dichloroethane	0.02	0.5 U	0.00072 U	0.003 U	0.003 U
1,2-Dichloropropane	NS	1.8 U	0.00071 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	8.4	2.5 U	NA	0.015 U	0.015 U
1,3-Dichlorobenzene	2.4	2.5 U	NA	0.015 U	0.015 U
1,3-Dichloropropane	NS	2.5 U	NA	0.015 U	0.015 U
1,4-Dichlorobenzene	1.8	2.5 U	NA	0.015 U	0.015 U
1,4-Diethylbenzene	NS	0.5 U	NA	0.003 U	0.003 U
2,2-Dichloropropane	NS	2.5 U	NA	0.015 U	0.015 U
2-Butanone	0.12	5 U	0.0011 U	0.03 U	0.03 U
2-Hexanone	NS	5 U	0.0011 U	0.03 U	0.03 U
4-Ethyltoluene	NS	0.5 U	NA	0.003 U	0.003 U
4-Methyl-2-pentanone	NS	5 U	0.00038 U	0.03 U	0.03 U
Acetone	0.05	5 U	0.001 U	0.03 U	0.03 U
Benzene	0.06	0.5 U	0.00074 U	0.003 U	0.003 U
Bromobenzene	NS	2.5 U	NA	0.015 U	0.015 U
Bromochloromethane	NS	2.5 U	NA	0.015 U	0.015 U
Bromodichloromethane	NS	0.5 U	0.00048 U	0.003 U	0.003 U
Bromoform	NS	2 U	0.00046 U	0.012 U	0.012 U
Bromomethane	NS	1 U	0.0021 U	0.006 U	0.006 U
Carbon disulfide	NS	5 U	0.0009 U	0.03 U	0.03 U
Carbon tetrachloride	0.76	0.5 U	0.0011 U	0.003 U	0.003 U
Chlorobenzene	1.1	0.5 U	0.00072 U	0.003 U	0.003 U
Chloroethane	NS	1 U	0.0011 U	0.006 U	0.006 U
Chloroform	0.37	0.75 U	0.00067 U	0.0045 U	0.0045 U
Chloromethane	NS	2.5 U	0.0011 U	0.015 U	0.015 U
cis-1,2-Dichloroethene	0.25	0.5 U	0.00099 U	0.003 U	0.003 U
cis-1,3-Dichloropropene	NS	0.5 U	0.00028 U	0.003 U	0.003 U
Dibromochloromethane	NS	0.5 U	0.00055 U	0.003 U	0.003 U
Dibromomethane	NS	5 U	NA	0.03 U	0.03 U
Dichlorodifluoromethane	NS	5 U	NA	0.03 U	0.03 U
Ethylbenzene	1	0.5 U	0.00087 U	0.003 U	0.003 U
Hexachlorobutadiene	NS	0.6 U	NA	0.015 U	0.015 U
Isopropylbenzene	NS	0.5 U	NA	0.003 U	0.003 U
Methyl tert butyl ether	0.93	1 U	NA	0.006 U	0.006 U
Methylene chloride	0.05	5 U	0.003 J	0.03 U	0.03 U
n-Butylbenzene	12	0.5 U	NA	0.003 U	0.003 U
n-Propylbenzene	3.9	0.5 U	NA	0.003 U	0.003 U
Naphthalene	12	2.5 U	NA	0.015 U	0.015 U
o-Chlorotoluene	NS	2.5 U	NA	0.015 U	0.015 U
o-Xylene	1.6	1 U	NA	0.006 U	0.006 U
p-Chlorotoluene	NS	2.5 U	NA	0.015 U	0.015 U
p-Isopropyltoluene	NS	0.5 U	NA	0.003 U	0.003 U
p/m-Xylene	1.6	1 U	NA	0.006 U	0.006 U
sec-Butylbenzene	11	0.5 U	NA	0.003 U	0.003 U
Styrene	NS	1 U	0.00064 U	0.006 U	0.006 U
tert-Butylbenzene	5.9	2.5 U	NA	0.015 U	0.015 U
Tetrachloroethene	1.3	0.5 U	0.00081 U	0.003 U	0.003 U
Toluene	0.7	0.75 U	0.00072 U	0.0045 U	0.0045 U
trans-1,2-Dichloroethene	0.19	0.75 U	0.00076 U	0.0045 U	0.0045 U
trans-1,3-Dichloropropene	NS	0.5 U	0.00057 U	0.003 U	0.003 U
Trichloroethene	0.47	0.5 U	0.00062 U	0.003 U	0.003 U
Trichlorofluoromethane	NS	2.5 U	NA	0.015 U	0.015 U
Vinyl acetate	NS	5 U	NA	0.03 U	0.03 U
Vinyl chloride	0.02	1 U	0.00099 U	0.006 U	0.006 U
Xylenes, Total	1.6	2U	0.0023 U	0.012 U	0.012 U

Table 5
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID Lab Sample ID Date Sampled Dilution Units Analyte	Class GA Groundwater Standards µg/L	M-1 L0716704-10 11/7/2007	M-1 220-11052-3 12/14/2009	M-2 L0716704-01 11/6/2007	M-2 220-10981-2 12/10/2009 1	M-3 L0716704-02 11/6/2007	M-3 220-11052-2 12/14/2009	3M 220-11052-1 12/14/2009 Duplicate Sample of M-3
1,1,1,2-Tetrachloroethane	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
1,1,1-Trichloroethane	5	0.5 U	0.69 U	0.5 U	0.69 U	0.5 U	0.69 U	0.69 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.81 U	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U
1,1,2-Trichloroethane	1	0.75 U	0.65 U	0.75 U	0.65 U	0.75 U	0.65 U	0.65 U
1,1-Dichloroethane	5	0.75 U	1 U	0.75 U	1 U	0.75 U	1 U	1 U
1,1-Dichloroethene	5	0.5 U	0.83 U	0.5 U	0.83 U	0.5 U	0.83 U	0.83 U
1,1-Dichloropropene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2,3-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2,3-Trichloropropane	0.04	5 U	NA	5 U	NA	5 U	NA	NA
1,2,4,5-Tetramethylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
1,2,4-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2,4-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2-Dibromo-3-chloropropane	0.04	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2-Dibromoethane	NS	2 U	NA	2 U	NA	2 U	NA	NA
1,2-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,2-Dichloroethane	0.6	0.5 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U
1,2-Dichloropropane	1	1.8 U	0.71 U	1.8 U	0.71 U	1.8 U	0.71 U	0.71 U
1,3,5-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,3-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,3-Dichloropropane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,4-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
1,4-Diethylbenzene	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
2,2-Dichloropropane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
2-Butanone	NS	5 U	1.1 U	5 U	1.1 U	5 U	1.1 U	1.1 U
2-Hexanone	50	5 U	1.1 U	5 U	1.1 U	5 U	1.1 U *	1.1 U
4-Ethyltoluene	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
4-Methyl-2-pentanone	NS	5 U	0.38 U	5 U	0.38 U	5 U	0.38 U *	0.38 U
Acetone	NS	5 U	2.1 J	8.2	1 U	5 U	1 J	1 U
Benzene	1	0.5 U	0.74 U	0.5 U	0.74 U	0.5 U	0.74 U	0.74 U
Bromobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
Bromochloromethane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
Bromodichloromethane	50	0.5 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.48 U
Bromoform	50	2 U	0.46 U *	2 U	0.46 U	2 U	0.46 U	0.46 U *
Bromomethane	5	2 U	2.1 U	2 U	2.1 U	2 U	2.1 U	2.1 U
Carbon disulfide	NS	5 U	2.4 J	5 U	0.90 U	5 U	0.90 U	0.90 U
Carbon tetrachloride	5	0.5 U	1.1 U	0.5 U	1.1 U	0.5 U	1.1 U	1.1 U
Chlorobenzene	5	0.5 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U
Chloroethane	5	1 U	1.1 U	1 U	1.1 U	1 U	1.1 U	1.1 U
Chloroform	7	0.75 U	0.67 U	0.75 U	0.67 U	0.75 U	0.67 U	0.67 U
Chloromethane	NS	2.5 U	1.1 U	2.5 U	1.1 U	2.5 U	1.1 U	1.1 U
cis-1,2-Dichloroethene	5	0.5 U	0.99 U	0.85	0.99 U	**13**	0.99 U	0.99 U
cis-1,3-Dichloropropene	5	0.5 U	0.28 U	0.5 U	0.28 U	0.5 U	0.28 U	0.28 U
Dibromochloromethane	NS	0.5 U	0.55 U	0.5 U	0.55 U	0.5 U	0.55 U	0.55 U
Dibromomethane	5	5 U	NA	5 U	NA	5 U	NA	NA
Dichlorodifluoromethane	5	5 U	NA	5 U	NA	5 U	NA	NA
Ethylbenzene	5	0.5 U	0.87 U	0.5 U	0.87 U	0.5 U	0.87 U	0.87 U
Hexachlorobutadiene	0.5	0.6 U	NA	0.6 U	NA	0.6 U	NA	NA
Isopropylbenzene	5	2.1	NA	0.5 U	NA	0.5 U	NA	NA
Methyl tert butyl ether	10	5.1	NA	1 U	NA	1 U	NA	NA
Methylene chloride	5	5 U	0.78 U	5 U	0.78 U	5 U	0.78 U	0.78 U
Naphthalene	NS	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
n-Butylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
n-Propylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
o-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
o-Xylene	5	1 U	NA	1 U	NA	1 U	NA	NA
p/m-Xylene	5	1 U	NA	1 U	NA	1 U	NA	NA
p-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
p-Isopropyltoluene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
sec-Butylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA
Styrene	5	1 U	0.64 U	1 U	0.64 U	1 U	0.64 U	0.64 U
tert-Butylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
Tetrachloroethene	5	0.5 U	**7.9**	0.74	0.81 U	**30**	0.81 U	0.81 U
Toluene	5	0.75 U	0.72 U	0.75 U	0.72 U	0.75 U	0.72 U	0.72 U
trans-1,2-Dichloroethene	5	0.75 U	0.76 U	0.75 U	0.76 U	0.75 U	0.76 U	0.76 U
trans-1,3-Dichloropropene	0.4	0.5 U	0.57 U	0.5 U	0.57 U	0.5 U	0.57 U	0.57 U
Trichloroethene	5	0.5 U	0.62 U	0.5 U	0.62 U	2.4	0.62 U	0.62 U
Trichlorofluoromethane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA	NA
Vinyl acetate	NS	5 U	NA	5 U	NA	5 U	NA	NA
Vinyl chloride	2	1 U	0.99 U	1.6	0.99 U	**18**	0.99 U	0.99 U
Xylene Total	NS	NA	2.3 U	NA	2.3 U	NA	2.3 U	2.3 U

Table 5
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-3d		M-4		M-4d		M-5	
Lab Sample ID	Groundwater	L0805149-01	220-11051-1	L0716704-08	220-11051-3	L0716704-09	220-11051-4	220-11025-2	L0716444-01
Date Sampled	Standards	4/11/2008	12/14/2009	11/5/2007	12/11/2009	11/5/2007	12/11/2009	12/10/2009	11/1/2007
Dilution			1						
Units	µg/L								
Analyte									
1,1,1,2-Tetrachloroethane	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,1,1-Trichloroethane	5	1 U	0.69 U	0.5 U	0.69 U	0.5 U	0.69 U	0.69 U	0.5 U
1,1,2,2-Tetrachloroethane	5	1 U	0.81 U	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U	0.5 U
1,1,2-Trichloroethane	1	1.5 U	0.65 U	0.75 U	0.65 U	0.75 U	0.65 U	0.65 U	0.75 U
1,1-Dichloroethane	5	1.5 U	1 U	0.75 U	1 U	0.75 U	1 U	1 U	0.75 U
1,1-Dichloroethene	5	1 U	0.83 U	0.5 U	0.83 U	0.5 U	0.83 U	0.83 U	0.5 U
1,1-Dichloropropene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2,3-Trichlorobenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2,3-Trichloropropane	0.04	10 U	NA	5 U	NA	5 U	NA	NA	5 U
1,2,4,5-Tetramethylbenzene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2,4-Trimethylbenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2-Dibromo-3-chloropropane	0.04	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2-Dibromoethane	NS	4 U	NA	2 U	NA	2 U	NA	NA	2 U
1,2-Dichlorobenzene	3	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,2-Dichloroethane	0.6	1 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U	0.5 U
1,2-Dichloropropane	1	3.5 U	0.71 U	1.8 U	0.71 U	1.8 U	0.71 U	0.71 U	1.8 U
1,3,5-Trimethylbenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,3-Dichlorobenzene	3	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,3-Dichloropropane	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,4-Dichlorobenzene	3	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
1,4-Diethylbenzene	NS	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
2,2-Dichloropropane	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
2-Butanone	NS	10 U	1.1 U	5 U	1.1 U	5 U	1.1 U	1.1 U	5 U
2-Hexanone	50	10 U	1.1 U *	5 U	1.1 U *	5 U	1.1 U	1.1 U	5 U
4-Ethyltoluene	NS	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
4-Methyl-2-pentanone	NS	10 U	0.38 U *	5 U	0.38 U *	5 U	0.38 U	0.38 U	5 U
Acetone	NS	10 U	1 U	5 U	1.0 U	5 U	2.2 J B	2.1 J	5 U
Benzene	1	1 U	0.74 U	0.5 U	0.74 U	0.5 U	0.74 U	0.74 U	0.5 U
Bromobenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
Bromochloromethane	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
Bromodichloromethane	50	1 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.48 U	0.5 U
Bromoform	50	4 U	0.46 U	2 U	0.46 U	2 U	0.46 U	0.46 U	2 U
Bromomethane	5	2 U	2.1 U	2 U	2.1 U	2 U	2.1 U	2.1 U	1 U
Carbon disulfide	NS	10 U	0.90 U	5 U	0.90 U	5 U	0.90 U	0.90 U	5 U
Carbon tetrachloride	5	1 U	1.1 U	0.5 U	1.1 U	0.5 U	1.1 U	1.1 U	0.5 U
Chlorobenzene	5	1 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U	0.5 U
Chloroethane	5	2 U	1.1 U	1 U	1.1 U	1 U	1.1 U	1.1 U	1 U
Chloroform	7	1.5 U	0.67 U	0.75 U	0.67 U	0.75 U	0.67 U	0.67 U	0.75 U
Chloromethane	NS	5 U	1.1 U	2.5 U	1.1 U	2.5 U	1.1 U	1.1 U	2.5 U
cis-1,2-Dichloroethene	5	**98**	**6.3**	0.5 U	0.99 U	0.5 U	0.99 U	0.99 U	0.5 U
cis-1,3-Dichloropropene	5	1 U	0.28 U	0.5 U	0.28 U	0.5 U	0.28 U	0.28 U	0.5 U
Dibromochloromethane	NS	1 U	0.55 U	0.5 U	0.55 U	0.5 U	0.55 U	0.55 U	0.5 U
Dibromomethane	5	10 U	NA	5 U	NA	5 U	NA	NA	5 U
Dichlorodifluoromethane	5	10 U	NA	5 U	NA	5 U	NA	NA	5 U
Ethylbenzene	5	1 U	0.87 U	0.5 U	0.87 U	0.5 U	0.87 U	0.87 U	0.5 U
Hexachlorobutadiene	0.5	1.2 U	NA	0.6 U	NA	0.6 U	NA	NA	0.6 U
Isopropylbenzene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
Methyl tert butyl ether	10	2 U	NA	1 U	NA	1 U	NA	NA	1 U
Methylene chloride	5	10 U	0.78 U	5 U	0.78 U	5 U	0.78 U	0.78 U	5 U
Naphthalene	NS	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
n-Butylbenzene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
n-Propylbenzene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
o-Chlorotoluene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
o-Xylene	5	2 U	NA	1 U	NA	1 U	NA	NA	1 U
p/m-Xylene	5	2 U	NA	1 U	NA	1 U	NA	NA	1 U
p-Chlorotoluene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
p-Isopropyltoluene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
sec-Butylbenzene	5	1 U	NA	0.5 U	NA	0.5 U	NA	NA	0.5 U
Styrene	5	2 U	0.64 U	1 U	0.64 U	1 U	0.64 U	0.64 U	1 U
tert-Butylbenzene	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
Tetrachloroethene	5	**66**	0.81 U	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U	0.5 U
Toluene	5	1.5 U	0.72 U	0.75 U	0.72 U	0.75 U	0.72 U	0.72 U	0.75 U
trans-1,2-Dichloroethene	5	**24**	3.5 J	0.75 U	0.76 U	0.75 U	0.76 U	0.76 U	0.75 U
trans-1,3-Dichloropropene	0.4	1 U	0.57 U	0.5 U	0.57 U	0.5 U	0.57 U	0.57 U	0.5 U
Trichloroethene	5	**17**	1.7 J	0.5 U	0.62 U	0.5 U	0.62 U	0.62 U	0.5 U
Trichlorofluoromethane	5	5 U	NA	2.5 U	NA	2.5 U	NA	NA	2.5 U
Vinyl acetate	NS	10 U	NA	5 U	NA	5 U	NA	NA	5 U
Vinyl chloride	2	**160**	**12**	1 U	0.99 U	1 U	0.99 U	0.99 U	1 U
Xylene Total	NS	NA	2.3 U	NA	2.3 U	NA	2.3 U	2.3 U	NA

Table 5
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-5d		M-6		M-6d	
Lab Sample ID Date Sampled Dilution Units Analyte	Groundwater Standards µg/L	L0716444-02 11/1/2007	220-11025-1 12/11/2009	220-10981-3 12/10/2009	L0716444-03 11/1/2007	L0716444-04 11/1/2007	220-10981-1 12/10/2009 1
1,1,1,2-Tetrachloroethane	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
1,1,1-Trichloroethane	5	0.5 U	0.69 U	0.69 U	0.5 U	0.5 U	0.69 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.81 U	0.81 U	0.5 U	0.5 U	0.81 U
1,1,2-Trichloroethane	1	0.75 U	0.65 U	0.65 U	0.75 U	0.75 U	0.65 U
1,1-Dichloroethane	5	0.75 U	1 U	1 U	0.75 U	0.75 U	1 U
1,1-Dichloroethene	5	0.5 U	0.83 U	0.83 U	0.5 U	0.5 U	0.83 U
1,1-Dichloropropene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2,3-Trichlorobenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2,3-Trichloropropane	0.04	5 U	NA	NA	5 U	5 U	NA
1,2,4,5-Tetramethylbenzene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
1,2,4-Trichlorobenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2,4-Trimethylbenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2-Dibromo-3-chloropropane	0.04	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2-Dibromoethane	NS	2 U	NA	NA	2 U	2 U	NA
1,2-Dichlorobenzene	3	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,2-Dichloroethane	0.6	0.5 U	0.72 U	0.72 U	0.5 U	0.5 U	0.72 U
1,2-Dichloropropane	1	1.8 U	0.71 U	0.71 U	1.8 U	1.8 U	0.71 U
1,3,5-Trimethylbenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,3-Dichlorobenzene	3	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,3-Dichloropropane	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,4-Dichlorobenzene	3	2.5 U	NA	NA	2.5 U	2.5 U	NA
1,4-Diethylbenzene	NS	0.5 U	NA	NA	0.5 U	0.5 U	NA
2,2-Dichloropropane	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
2-Butanone	NS	5 U	1.1 U	1.1 U	5 U	5 U	1.1 U
2-Hexanone	50	5 U	1.1 U	1.1 U	5 U	5 U	1.1 U
4-Ethyltoluene	NS	0.5 U	NA	NA	0.5 U	0.5 U	NA
4-Methyl-2-pentanone	NS	5 U	0.38 U	0.38 U	5 U	5 U	0.38 U
Acetone	NS	5 U	1.9 J	1.7 J	5 U	5 U	2.1 J
Benzene	1	0.5 U	0.74 U	0.74 U	0.5 U	0.5 U	0.74 U
Bromobenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
Bromochloromethane	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
Bromodichloromethane	50	0.5 U	0.48 U	0.48 U	0.5 U	0.5 U	0.48 U
Bromoform	50	2 U	0.46 U	0.46 U	2 U	2 U	0.46 U
Bromomethane	5	1 U	2.1 U	2.1 U	1 U	1 U	2.1 U
Carbon disulfide	NS	5 U	0.90 U	1.2 J	5 U	5 U	0.90 U
Carbon tetrachloride	5	0.5 U	1.1 U	1.1 U	0.5 U	0.5 U	1.1 U
Chlorobenzene	5	0.5 U	0.72 U	0.72 U	0.5 U	0.5 U	0.72 U
Chloroethane	5	1 U	1.1 U	1.1 U	1 U	1 U	1.1 U
Chloroform	7	0.75 U	0.67 U	0.67 U	0.75 U	0.75 U	0.67 U
Chloromethane	NS	2.5 U	1.1 U	1.1 U	2.5 U	2.5 U	1.1 U
cis-1,2-Dichloroethene	5	0.5 U	0.99 U	0.99 U	0.5 U	0.5 U	0.99 U
cis-1,3-Dichloropropene	5	0.5 U	0.28 U	0.28 U	0.5 U	0.5 U	0.28 U
Dibromochloromethane	NS	0.5 U	0.55 U	0.55 U	0.5 U	0.5 U	0.55 U
Dibromomethane	5	5 U	NA	NA	5 U	5 U	NA
Dichlorodifluoromethane	5	5 U	NA	NA	5 U	5 U	NA
Ethylbenzene	5	0.5 U	0.87 U	0.87 U	0.5 U	0.5 U	0.87 U
Hexachlorobutadiene	0.5	0.6 U	NA	NA	0.6 U	0.6 U	NA
Isopropylbenzene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
Methyl tert butyl ether	10	1 U	NA	NA	1 U	1 U	NA
Methylene chloride	5	5 U	0.78 U	0.78 U	5 U	5 U	0.78 U
Naphthalene	NS	2.5 U	NA	NA	2.5 U	2.5 U	NA
n-Butylbenzene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
n-Propylbenzene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
o-Chlorotoluene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
o-Xylene	5	1 U	NA	NA	1 U	1 U	NA
p/m-Xylene	5	1 U	NA	NA	1 U	1 U	NA
p-Chlorotoluene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
p-Isopropyltoluene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
sec-Butylbenzene	5	0.5 U	NA	NA	0.5 U	0.5 U	NA
Styrene	5	1 U	0.64 U	0.64 U	1 U	1 U	0.64 U
tert-Butylbenzene	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
Tetrachloroethene	5	0.5 U	0.81 U	0.81 U	0.5 U	0.5 U	0.81 U
Toluene	5	0.75 U	0.72 U	0.72 U	0.75 U	0.78	0.72 U
trans-1,2-Dichloroethene	5	0.75 U	0.76 U	0.76 U	0.75 U	0.75 U	0.76 U
trans-1,3-Dichloropropene	0.4	0.5 U	0.57 U	0.57 U	0.5 U	0.5 U	0.57 U
Trichloroethene	5	0.5 U	0.62 U	0.62 U	0.5 U	0.5 U	0.62 U
Trichlorofluoromethane	5	2.5 U	NA	NA	2.5 U	2.5 U	NA
Vinyl acetate	NS	5 U	NA	NA	5 U	5 U	NA
Vinyl chloride	2	1 U	0.99 U	0.99 U	1 U	1 U	0.99 U
Xylene Total	NS	NA	2.3 U	2.3 U			2.3 U

Table 5
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-7			M-8		M-9s	
Lab Sample ID	Groundwater	L0716704-05	220-11051-2		L0716704-03	220-10939-2	L0716444-07	220-10925-3
Date Sampled	Standards	11/5/2007	12/14/2009		11/6/2007	12/8/2009	11/2/2007	12/7/2009
Dilution			4	1				1
Units	µg/L			Secondary				
Analyte								
1,1,1,2-Tetrachloroethane	5	5 U	NA	NA	1 U	NA	0.5 U	NA
1,1,1-Trichloroethane	5	5 U	2.8 U	0.69 U	1 U	0.69 U	0.5 U	0.69 U
1,1,2,2-Tetrachloroethane	5	5 U	3.2 U	0.81 U	1 U	0.81 U	0.5 U	0.81 U
1,1,2-Trichloroethane	1	7.5 U	2.6 U	0.65 U	1.5 U	0.65 U	0.75 U	0.65 U
1,1-Dichloroethane	5	7.5 U	4.1 U	1 U	1.5 U	1 U	0.75 U	1 U
1,1-Dichloroethene	5	5 U	3.3 U	0.83 U	1 U	0.83 U	0.5 U	0.83 U
1,1-Dichloropropene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2,3-Trichlorobenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2,3-Trichloropropane	0.04	50 U	NA	NA	10 U	NA	5 U	NA
1,2,4,5-Tetramethylbenzene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
1,2,4-Trichlorobenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2,4-Trimethylbenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2-Dibromo-3-chloropropane	0.04	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2-Dibromoethane	NS	20 U	NA	NA	4 U	NA	2 U	NA
1,2-Dichlorobenzene	3	25 U	NA	NA	5 U	NA	2.5 U	NA
1,2-Dichloroethane	0.6	5 U	2.9 U	0.72 U	1 U	0.72 U	0.5 U	0.72 U
1,2-Dichloropropane	1	18 U	2.8 U	0.71 U	3.5 U	0.71 U	1.8 U	0.71 U
1,3,5-Trimethylbenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,3-Dichlorobenzene	3	25 U	NA	NA	5 U	NA	2.5 U	NA
1,3-Dichloropropane	5	25 U	NA	NA	5 U	NA	2.5 U	NA
1,4-Dichlorobenzene	3	25 U	NA	NA	5 U	NA	2.5 U	NA
1,4-Diethylbenzene	NS	5 U	NA	NA	1 U	NA	0.5 U	NA
2,2-Dichloropropane	5	25 U	NA	NA	5 U	NA	2.5 U	NA
2-Butanone	NS	50 U	4.4 U	1.1 U	10 U	1.1 U	5 U	1.1 U
2-Hexanone	50	50 U	4.4 U *	1.1 U *	10 U	1.1 U	5 U	1.1 U
4-Ethyltoluene	NS	5 U	NA	NA	1 U	NA	0.5 U	NA
4-Methyl-2-pentanone	NS	50 U	1.5 U *	0.38 U *	10 U	0.38 U	5 U	0.38 U
Acetone	NS	50 U	4.1 U	1.5 J	10 U	1.3 J	5 U	1.4 J
Benzene	1	5 U	3 U	0.74 U	1 U	0.74 U	0.5 U	0.74 U
Bromobenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
Bromochloromethane	5	25 U	NA	NA	5 U	NA	2.5 U	NA
Bromodichloromethane	50	5 U	1.9 U	0.48 U	1 U	0.48 U	0.5 U	0.48 U
Bromoform	50	20 U	1.8 U	0.46 U	4 U	0.46 U *	2 U	0.46 U
Bromomethane	5	2 U	8.5 U	2.1 U	2 U	2.1 U	1 U	2.1 U
Carbon disulfide	NS	50 U	3.6 U	0.90 U	10 U	1.1 J	5 U	0.90 U
Carbon tetrachloride	5	5 U	4.3 U	1.1 U	1 U	1.1 U *	0.5 U	1.1 U
Chlorobenzene	5	5 U	2.9 U	0.72 U	1 U	0.72 U	0.5 U	0.72 U
Chloroethane	5	10 U	4.2 U	1.1 U	2 U	1.1 U	1 U	1.1 U
Chloroform	7	7.5 U	2.7 U	0.67 U	1.5 U	0.67 U	0.75 U	0.67 U
Chloromethane	NS	25 U	4.4 U	1.1 U	5 U	1.1 U	2.5 U	1.1 U
cis-1,2-Dichloroethene	5	**390**	**230**	290 E	1 U	0.99 U	0.5 U	0.99 U
cis-1,3-Dichloropropene	5	5 U	1.1 U	0.28 U	1 U	0.28 U	0.5 U	0.28 U
Dibromochloromethane	NS	5 U	2.2 U	0.55 U	1 U	0.55 U	0.5 U	0.55 U
Dibromomethane	5	50 U	NA	NA	10 U	NA	5 U	NA
Dichlorodifluoromethane	5	50 U	NA	NA	10 U	NA	5 U	NA
Ethylbenzene	5	5 U	3.5 U	0.87 U	1 U	0.87 U	0.5 U	0.87 U
Hexachlorobutadiene	0.5	6 U	NA	NA	1.2 U	NA	0.6 U	NA
Isopropylbenzene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
Methyl tert butyl ether	10	10 U	NA	NA	2 U	NA	1 U	NA
Methylene chloride	5	50 U	12 J	0.78 U	10 U	0.78 U	5 U	0.78 U
Naphthalene	NS	25 U	NA	NA	5 U	NA	2.5 U	NA
n-Butylbenzene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
n-Propylbenzene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
o-Chlorotoluene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
o-Xylene	5	10 U	NA	NA	2 U	NA	1 U	NA
p/m-Xylene	5	10 U	NA	NA	2 U	NA	1 U	NA
p-Chlorotoluene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
p-Isopropyltoluene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
sec-Butylbenzene	5	5 U	NA	NA	1 U	NA	0.5 U	NA
Styrene	5	10 U	2.6 U	0.64 U	2 U	0.64 U	1 U	0.64 U
tert-Butylbenzene	5	25 U	NA	NA	5 U	NA	2.5 U	NA
Tetrachloroethene	5	5 U	3.2 U	0.81 U	1 U	0.81 U	0.5 U	0.81 U
Toluene	5	7.5 U	2.9 U	0.72 U	1.5 U	0.72 U	0.75 U	0.72 U
trans-1,2-Dichloroethene	5	**18**	7.1 J	**7.9**	1.5 U	0.76 U	0.75 U	0.76 U
trans-1,3-Dichloropropene	0.4	5 U	2.3 U	0.57 U	1 U	0.57 U	0.5 U	0.57 U
Trichloroethene	5	5 U	2.5 U	0.62 U	1 U	0.62 U	0.5 U	0.62 U
Trichlorofluoromethane	5	25 U	NA	NA	5 U	NA	2.5 U	NA
Vinyl acetate	NS	50 U	NA	NA	10 U	NA	5 U	NA
Vinyl chloride	2	**16**	11 J	**13**	2 U	0.99 U	1 U	0.99 U
Xylene Total	NS		9.1 U	2.3 U	NA	2.3 U	NA	2.3 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 5
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-9d		M-10s		M-10d	
Lab Sample ID	Groundwater	L0716444-08	220-10925-2	L0716444-10	220-10874-2	L0716444-11	220-10874-1
Date Sampled	Standards	11/2/2007	12/7/2009	11/2/2007	12/3/2009	11/2/2007	12/3/2009
Dilution							
Units	µg/L						
Analyte							
1,1,1,2-Tetrachloroethane	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
1,1,1-Trichloroethane	5	0.5 U	0.69 U	0.5 U	0.69 U	0.5 U	0.69 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.81 U	0.5 U	0.81 U	0.5 U	0.81 U
1,1,2-Trichloroethane	1	0.75 U	0.65 U	0.75 U	0.65 U	0.75 U	0.65 U
1,1-Dichloroethane	5	0.75 U	1 U	0.75 U	1 U	0.75 U	1 U
1,1-Dichloroethene	5	0.5 U	0.83 U	0.5 U	0.83 U	0.5 U	0.83 U
1,1-Dichloropropene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2,3-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2,3-Trichloropropane	0.04	5 U	NA	5 U	NA	5 U	NA
1,2,4,5-Tetramethylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
1,2,4-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2,4-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2-Dibromo-3-chloropropane	0.04	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2-Dibromoethane	NS	2 U	NA	2 U	NA	2 U	NA
1,2-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,2-Dichloroethane	0.6	0.5 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U
1,2-Dichloropropane	1	1.8 U	0.71 U	1.8 U	0.71 U	1.8 U	0.71 U
1,3,5-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,3-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,3-Dichloropropane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,4-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	2.5 U	NA
1,4-Diethylbenzene	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA
2,2-Dichloropropane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
2-Butanone	NS	5 U	1.1 U	5 U	1.1 U	5 U	1.1 U
2-Hexanone	50	5 U	1.1 U *	5 U	1.1 U	5 U	1.1 U
4-Ethyltoluene	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA
4-Methyl-2-pentanone	NS	5 U	0.38 U *	5 U	0.38 U	5 U	0.38 U
Acetone	NS	5 U	1.5 J	5 U	1.0 U	5 U	1.1 J
Benzene	1	0.5 U	0.74 U	0.5 U	0.74 U	0.5 U	0.74 U
Bromobenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
Bromochloromethane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
Bromodichloromethane	50	0.5 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U
Bromoform	50	2 U	0.46 U	2 U	0.46 U	2 U	0.46 U
Bromomethane	5	1 U	2.1 U	1 U	2.1 U	1 U	2.1 U
Carbon disulfide	NS	5 U	0.90 U	5 U	0.90 U	5 U	0.90 U
Carbon tetrachloride	5	0.5 U	1.1 U	0.5 U	1.1 U	0.5 U	1.1 U
Chlorobenzene	5	0.5 U	0.72 U	0.5 U	0.72 U	0.5 U	0.72 U
Chloroethane	5	1 U	1.1 U	1 U	1.1 U	1 U	1.1 U
Chloroform	7	0.75 U	0.67 U	0.75 U	0.67 U	0.75 U	0.67 U
Chloromethane	NS	2.5 U	1.1 U	2.5 U	1.1 U	2.5 U	1.1 U
cis-1,2-Dichloroethene	5	0.5 U	0.99 U	0.5 U	0.99 U	0.5 U	0.99 U
cis-1,3-Dichloropropene	5	0.5 U	0.28 U	0.5 U	0.28 U	0.5 U	0.28 U
Dibromochloromethane	NS	0.5 U	0.55 U	0.5 U	0.55 U	0.5 U	0.55 U
Dibromomethane	5	5 U	NA	5 U	NA	5 U	NA
Dichlorodifluoromethane	5	5 U	NA	5 U	NA	5 U	NA
Ethylbenzene	5	0.5 U	0.87 U	0.5 U	0.87 U	0.5 U	0.87 U
Hexachlorobutadiene	0.5	0.6 U	NA	0.6 U	NA	0.6 U	NA
Isopropylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
Methyl tert butyl ether	10	1 U	NA	1 U	NA	1 U	NA
Methylene chloride	5	5 U	0.78 U	5 U	0.78 U	5 U	0.78 U
Naphthalene	NS	2.5 U	NA	2.5 U	NA	2.5 U	NA
n-Butylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
n-Propylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
o-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
o-Xylene	5	1 U	NA	1 U	NA	1 U	NA
p/m-Xylene	5	1 U	NA	1 U	NA	1 U	NA
p-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
p-Isopropyltoluene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
sec-Butylbenzene	5	0.5 U	NA	0.5 U	NA	0.5 U	NA
Styrene	5	1 U	0.64 U	1 U	0.64 U	1 U	0.64 U
tert-Butylbenzene	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
Tetrachloroethene	5	0.5 U	0.81 U	0.5 U	0.81 U	0.5 U	0.81 U
Toluene	5	0.75 U	0.72 U	0.75 U	0.72 U	0.75 U	0.72 U
trans-1,2-Dichloroethene	5	0.75 U	0.76 U	0.75 U	0.76 U	0.75 U	0.76 U
trans-1,3-Dichloropropene	0.4	0.5 U	0.57 U	0.5 U	0.57 U	0.5 U	0.57 U
Trichloroethene	5	0.5 U	0.62 U	0.5 U	0.62 U	0.5 U	0.62 U
Trichlorofluoromethane	5	2.5 U	NA	2.5 U	NA	2.5 U	NA
Vinyl acetate	NS	5 U	NA	5 U	NA	5 U	NA
Vinyl chloride	2	1 U	0.99 U	1 U	0.99 U	1 U	0.99 U
Xylene Total	NS	NA	2.3 U	NA	2.3 U	NA	2.3 U

Table 5
2350 Fifth Avenue
New York, NY
Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-11s		M-11d		M-12d	
Lab Sample ID	Groundwater	L0716704-06	220-10965-1	L0716704-04	220-10965-2	L0716704-11	220-10965-3
Date Sampled	Standards	11/6/2007	12/9/2009	11/6/2007	12/9/2009	11/7/2007	12/9/2009
Dilution			20				
Units	µg/L						
Analyte							
1,1,1,2-Tetrachloroethane	5	5 U	NA	1 U	NA	0.5 U	NA
1,1,1-Trichloroethane	5	5 U	14 U	1 U	0.69 U	0.5 U	0.69 U
1,1,2,2-Tetrachloroethane	5	5 U	16 U	1 U	0.81 U	0.5 U	0.81 U
1,1,2-Trichloroethane	1	7.5 U	13 U	1.5 U	0.65 U	0.75 U	0.65 U
1,1-Dichloroethane	5	7.5 U	21 U	1.5 U	1 U	0.75 U	1 U
1,1-Dichloroethene	5	5 U	17 U	1 U	0.83 U	0.5 U	0.83 U
1,1-Dichloropropene	5	25 U	NA	5 U	NA	2.5 U	NA
1,2,3-Trichlorobenzene	5	25 U	NA	5 U	NA	2.5 U	NA
1,2,3-Trichloropropane	0.04	50 U	NA	10 U	NA	5 U	NA
1,2,4,5-Tetramethylbenzene	5	5 U	NA	1 U	NA	0.5 U	NA
1,2,4-Trichlorobenzene	5	25 U	NA	5 U	NA	2.5 U	NA
1,2,4-Trimethylbenzene	5	25 U	NA	5 U	NA	2.5 U	NA
1,2-Dibromo-3-chloropropane	0.04	25 U	NA	5 U	NA	2.5 U	NA
1,2-Dibromoethane	NS	20 U	NA	4 U	NA	2 U	NA
1,2-Dichlorobenzene	3	25 U	NA	5 U	NA	2.5 U	NA
1,2-Dichloroethane	0.6	5 U	14 U	1 U	0.72 U	0.5 U	0.72 U
1,2-Dichloropropane	1	18 U	14 U	3.5 U	0.71 U	1.8 U	0.71 U
1,3,5-Trimethylbenzene	5	25 U	NA	5 U	NA	2.5 U	NA
1,3-Dichlorobenzene	3	25 U	NA	5 U	NA	2.5 U	NA
1,3-Dichloropropane	5	25 U	NA	5 U	NA	2.5 U	NA
1,4-Dichlorobenzene	3	25 U	NA	5 U	NA	2.5 U	NA
1,4-Diethylbenzene	NS	5 U	NA	1 U	NA	0.5 U	NA
2,2-Dichloropropane	5	25 U	NA	5 U	NA	2.5 U	NA
2-Butanone	NS	50 U	22 U	10 U	1.1 U	5 U	1.1 U
2-Hexanone	50	50 U	22 U	10 U	1.1 U	5 U	1.1 U
4-Ethyltoluene	NS	5 U	NA	1 U	NA	0.5 U	NA
4-Methyl-2-pentanone	NS	50 U	7.6 U	10 U	0.38 U	5 U	0.38 U
Acetone	NS	50 U	21 U	10 U	1.2 J	5 U	1.8 J
Benzene	1	5 U	15 U	1 U	0.74 U	0.5 U	0.74 U
Bromobenzene	5	25 U	NA	5 U	NA	2.5 U	NA
Bromochloromethane	5	25 U	NA	5 U	NA	2.5 U	NA
Bromodichloromethane	50	5 U	9.6 U	1 U	0.48 U	0.5 U	0.48 U
Bromoform	50	20 U	9.2 U	4 U	0.46 U	2 U	0.46 U
Bromomethane	5	2 U	42 U	2 U	2.1 U	2 U	2.1 U
Carbon disulfide	NS	50 U	18 U	10 U	0.90 U	5 U	0.90 U
Carbon tetrachloride	5	5 U	21 U	1 U	1.1 U	0.5 U	1.1 U
Chlorobenzene	5	5 U	14 U	1 U	0.72 U	0.5 U	0.72 U
Chloroethane	5	10 U	21 U	2 U	1.1 U	1 U	1.1 U
Chloroform	7	7.5 U	13 U	1.5 U	0.67 U	0.75 U	0.67 U
Chloromethane	NS	25 U	22 U	5 U	1.1 U	2.5 U	1.1 U
cis-1,2-Dichloroethene	5	**1,300**	**1,800**	1 U	0.99 U	0.5 U	0.99 U
cis-1,3-Dichloropropene	5	5 U	5.6 U	1 U	0.28 U	0.5 U	0.28 U
Dibromochloromethane	NS	5 U	11 U	1 U	0.55 U	0.5 U	0.55 U
Dibromomethane	5	50 U	NA	10 U	NA	5 U	NA
Dichlorodifluoromethane	5	50 U	NA	10 U	NA	5 U	NA
Ethylbenzene	5	5 U	17 U	1 U	0.87 U	0.5 U	0.87 U
Hexachlorobutadiene	0.5	6 U	NA	1.2 U	NA	0.6 U	NA
Isopropylbenzene	5	5 U	NA	1 U	NA	0.5 U	NA
Methyl tert butyl ether	10	10 U	NA	2 U	NA	1 U	NA
Methylene chloride	5	50 U	**25** J	10 U	0.78 U	5 U	0.78 U
Naphthalene	NS	25 U	NA	5 U	NA	2.5 U	NA
n-Butylbenzene	5	5 U	NA	1 U	NA	0.5 U	NA
n-Propylbenzene	5	5 U	NA	1 U	NA	0.5 U	NA
o-Chlorotoluene	5	25 U	NA	5 U	NA	2.5 U	NA
o-Xylene	5	10 U	NA	2 U	NA	1 U	NA
p/m-Xylene	5	10 U	NA	2 U	NA	1 U	NA
p-Chlorotoluene	5	25 U	NA	5 U	NA	2.5 U	NA
p-Isopropyltoluene	5	5 U	NA	1 U	NA	0.5 U	NA
sec-Butylbenzene	5	5 U	NA	1 U	NA	0.5 U	NA
Styrene	5	10 U	13 U	2 U	0.64 U	1 U	0.64 U
tert-Butylbenzene	5	25 U	NA	5 U	NA	2.5 U	NA
Tetrachloroethene	5	**64**	**90** J	1 U	0.81 U	0.5 U	0.81 U
Toluene	5	7.5 U	14 U	1.5 U	0.72 U	0.75 U	0.72 U
trans-1,2-Dichloroethene	5	**34**	15 U	1.5 U	0.76 U	0.75 U	0.76 U
trans-1,3-Dichloropropene	0.4	5 U	11 U	1 U	0.57 U	0.5 U	0.57 U
Trichloroethene	5	**66**	**79** J	1 U	0.62 U	0.5 U	0.62 U
Trichlorofluoromethane	5	25 U	NA	5 U	NA	2.5 U	NA
Vinyl acetate	NS	50 U	NA	10 U	NA	5 U	NA
Vinyl chloride	2	**1,000**	**580**	2 U	0.99 U	1 U	0.99 U
Xylene Total	NS	NA	45 U	NA	2.3 U	NA	2.3 U

Table 5
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID	Class GA	M-13s		M-13d		M-14s	M-14D
Lab Sample ID	Groundwater	L0716444-05	220-11051-6	L0716444-06	220-11051-5	220-10939-1	220-10925-4
Date Sampled	Standards	10/31/2007	12/11/2009	10/31/2007	12/11/2009	12/8/2009	12/7/2009
Dilution							
Units	µg/L						
Analyte							
1,1,1,2-Tetrachloroethane	5	0.5 U	NA	0.5 U	NA	NA	NA
1,1,1-Trichloroethane	5	0.5 U	0.69 U	0.5 U	0.69 U	0.69 U	0.69 U
1,1,2,2-Tetrachloroethane	5	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U	0.81 U
1,1,2-Trichloroethane	1	0.75 U	0.65 U	0.75 U	0.65 U	0.65 U	0.65 U
1,1-Dichloroethane	5	0.75 U	1 U	0.75 U	1 U	1 U	1 U
1,1-Dichloroethene	5	0.5 U	0.83 U	0.5 U	0.83 U	0.83 U	0.83 U
1,1-Dichloropropene	5	2.5 U	NA	2.5 U	NA	NA	NA
1,2,3-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
1,2,3-Trichloropropane	0.04	5 U	NA	5 U	NA	NA	NA
1,2,4,5-Tetramethylbenzene	5	0.5 U	NA	0.5 U	NA	NA	NA
1,2,4-Trichlorobenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
1,2,4-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.04	2.5 U	NA	2.5 U	NA	NA	NA
1,2-Dibromoethane	NS	2 U	NA	2 U	NA	NA	NA
1,2-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	NA	NA
1,2-Dichloroethane	0.6	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U	0.72 U
1,2-Dichloropropane	1	1.8 U	0.71 U	1.8 U	0.71 U	0.71 U	0.71 U
1,3,5-Trimethylbenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
1,3-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	NA	NA
1,3-Dichloropropane	5	2.5 U	NA	2.5 U	NA	NA	NA
1,4-Dichlorobenzene	3	2.5 U	NA	2.5 U	NA	NA	NA
1,4-Diethylbenzene	NS	0.5 U	NA	0.5 U	NA	NA	NA
2,2-Dichloropropane	5	2.5 U	NA	2.5 U	NA	NA	NA
2-Butanone	NS	5 U	1.1 U	5 U	1.1 U	1.1 U	1.1 U
2-Hexanone	50	5 U	1.1 U *	5 U	1.1 U *	1.1 U	1.1 U *
4-Ethyltoluene	NS	0.5 U	NA	0.5 U	NA	NA	NA
4-Methyl-2-pentanone	NS	5 U	0.38 U *	5 U	0.38 U *	0.38 U	0.38 U *
Acetone	NS	25	1.0 U	5 U	1 U	2.5 J	1 U
Benzene	1	0.5 U	0.74 U	0.5 U	0.74 U	0.74 U	0.74 U
Bromobenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
Bromochloromethane	5	2.5 U	NA	2.5 U	NA	NA	NA
Bromodichloromethane	50	0.5 U	0.48 U	0.5 U	0.48 U	0.48 U	0.48 U
Bromoform	50	2 U	0.46 U	2 U	0.46 U	0.46 U *	0.46 U
Bromomethane	5	1 U	2.1 U	1 U	2.1 U	2.1 U	2.1 U
Carbon disulfide	NS	5 U	0.90 U	5 U	0.90 U	0.90 U	0.93 J
Carbon tetrachloride	5	0.5 U	1.1 U	0.5 U	1.1 U	1.1 U *	1.1 U
Chlorobenzene	5	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U	0.72 U
Chloroethane	5	1 U	1.1 U	1 U	1.1 U	1.1 U	1.1 U
Chloroform	7	0.75 U	0.67 U	0.75 U	0.67 U	0.67 U	0.67 U
Chloromethane	NS	2.5 U	1.1 U	2.5 U	1.1 U	1.1 U	1.1 U
cis-1,2-Dichloroethene	5	0.5 U	0.99 U	0.5 U	0.99 U	0.99 U	**25**
cis-1,3-Dichloropropene	5	0.5 U	0.28 U	0.5 U	0.28 U	0.28 U	0.28 U
Dibromochloromethane	NS	0.5 U	0.55 U	0.5 U	0.55 U	0.55 U	0.55 U
Dibromomethane	5	5 U	NA	5 U	NA	NA	NA
Dichlorodifluoromethane	5	5 U	NA	5 U	NA	NA	NA
Ethylbenzene	5	0.5 U	0.87 U	0.5 U	0.87 U	0.87 U	0.87 U
Hexachlorobutadiene	0.5	0.6 U	NA	0.6 U	NA	NA	NA
Isopropylbenzene	5	0.5 U	NA	0.5 U	NA	NA	NA
Methyl tert butyl ether	10	1 U	NA	1.1	NA	NA	NA
Methylene chloride	5	5 U	0.78 U	5 U	0.78 U	0.78 U	0.78 U
Naphthalene	NS	2.5 U	NA	2.5 U	NA	NA	NA
n-Butylbenzene	5	0.5 U	NA	0.5 U	NA	NA	NA
n-Propylbenzene	5	0.5 U	NA	0.5 U	NA	NA	NA
o-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	NA	NA
o-Xylene	5	1 U	NA	1 U	NA	NA	NA
p/m-Xylene	5	1 U	NA	1 U	NA	NA	NA
p-Chlorotoluene	5	2.5 U	NA	2.5 U	NA	NA	NA
p-Isopropyltoluene	5	0.5 U	NA	0.5 U	NA	NA	NA
sec-Butylbenzene	5	0.5 U	NA	0.5 U	NA	NA	NA
Styrene	5	1 U	0.64 U	1 U	0.64 U	0.64 U	0.64 U
tert-Butylbenzene	5	2.5 U	NA	2.5 U	NA	NA	NA
Tetrachloroethene	5	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U	3.6 J
Toluene	5	0.75 U	0.72 U	0.75 U	0.72 U	0.72 U	0.72 U
trans-1,2-Dichloroethene	5	0.75 U	0.76 U	0.75 U	0.76 U	0.76 U	0.76 U
trans-1,3-Dichloropropene	0.4	0.5 U	0.57 U	0.5 U	0.57 U	0.57 U	0.57 U
Trichloroethene	5	0.5 U	0.62 U	0.5 U	0.62 U	0.62 U	2.3 J
Trichlorofluoromethane	5	2.5 U	NA	2.5 U	NA	NA	NA
Vinyl acetate	NS	5 U	NA	5 U	NA	NA	NA
Vinyl chloride	2	1 U	0.99 U	1 U	0.99 U	0.99 U	0.99 U
Xylene Total	NS	NA	2.3 U	NA	2.3 U	2.3 U	2.3 U

Table 5
2350 Fifth Avenue
New York, NY

Exceedances of SCGs (Class GA Standards) in Groundwater

Client ID Lab Sample ID Date Sampled Dilution Units Analyte	Class GA Groundwater Standards µg/L	Duplicate L0716704-07 11/6/2007	Field Blank L0716704-12 11/7/2007	FB-1 220-11052-4 12/14/2009	Trip Blank L0716444-09 10/25/2007	TB-3 220-10874-3 12/3/2009	TB-4 220-10925-5 12/7/2009
1,1,1,2-Tetrachloroethane	5	20 U	0.5 U	NA	0.5 U	NA	NA
1,1,1-Trichloroethane	5	20 U	0.5 U	0.69 U	0.5 U	0.69 U	0.69 U
1,1,2,2-Tetrachloroethane	5	20 U	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U
1,1,2-Trichloroethane	1	30 U	0.75 U	0.65 U	0.75 U	0.65 U	0.65 U
1,1-Dichloroethane	5	30 U	0.75 U	1 U	0.75 U	1 U	1 U
1,1-Dichloroethene	5	20 U	0.5 U	0.83 U	0.5 U	0.83 U	0.83 U
1,1-Dichloropropene	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,2,3-Trichlorobenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,2,3-Trichloropropane	0.04	200 U	5 U	NA	5 U	NA	NA
1,2,4,5-Tetramethylbenzene	5	20 U	0.5 U	NA	0.5 U	NA	NA
1,2,4-Trichlorobenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,2,4-Trimethylbenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,2-Dibromo-3-chloropropane	0.04	100 U	2.5 U	NA	2.5 U	NA	NA
1,2-Dibromoethane	NS	80 U	2 U	NA	2 U	NA	NA
1,2-Dichlorobenzene	3	100 U	2.5 U	NA	2.5 U	NA	NA
1,2-Dichloroethane	0.6	20 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U
1,2-Dichloropropane	1	70 U	1.8 U	0.71 U	1.8 U	0.71 U	0.71 U
1,3,5-Trimethylbenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,3-Dichlorobenzene	3	100 U	2.5 U	NA	2.5 U	NA	NA
1,3-Dichloropropane	5	100 U	2.5 U	NA	2.5 U	NA	NA
1,4-Dichlorobenzene	3	100 U	2.5 U	NA	2.5 U	NA	NA
1,4-Diethylbenzene	NS	20 U	0.5 U	NA	0.5 U	NA	NA
2,2-Dichloropropane	5	100 U	2.5 U	NA	2.5 U	NA	NA
2-Butanone	NS	200 U	5 U	1.1 U	5 U	1.1 U	1.1 U
2-Hexanone	50	200 U	5 U	1.1 U *	5 U	1.1 U	1.1 U *
4-Ethyltoluene	NS	20 U	0.5 U	NA	0.5 U	NA	NA
4-Methyl-2-pentanone	NS	200 U	5 U	0.38 U	5 U	0.38 U	0.38 U *
Acetone	NS	200 U	25	1.6 J	5 U	1 U	1 U
Benzene	1	20 U	0.5 U	0.74 U	0.5 U	0.74 U	0.74 U
Bromobenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
Bromochloromethane	5	100 U	2.5 U	NA	2.5 U	NA	NA
Bromodichloromethane	50	20 U	0.5 U	0.48 U	0.5 U	0.48 U	0.48 U
Bromoform	50	80 U	2 U	0.46 U	2 U	0.46 U	0.46 U
Bromomethane	5	2 U	2 U	2.1 U	1 U	2.1 U	2.1 U
Carbon disulfide	NS	200 U	5 U	0.90 U	5 U	0.90 U	0.90 U
Carbon tetrachloride	5	20 U	0.5 U	1.1 U	0.5 U	1.1 U	1.1 U
Chlorobenzene	5	20 U	0.5 U	0.72 U	0.5 U	0.72 U	0.72 U
Chloroethane	5	40 U	1 U	1.1 U	1 U	1.1 U	1.1 U
Chloroform	7	30 U	0.75 U	0.67 U	0.75 U	0.67 U	0.67 U
Chloromethane	NS	100 U	2.5 U	1.1 U	2.5 U	1.1 U	1.1 U
cis-1,2-Dichloroethene	5	3,000	0.5 U	0.99 U	0.5 U	0.99 U	0.99 U
cis-1,3-Dichloropropene	5	20 U	0.5 U	0.28 U	0.5 U	0.28 U	0.28 U
Dibromochloromethane	NS	20 U	0.5 U	0.55 U	0.5 U	0.55 U	0.55 U
Dibromomethane	5	200 U	5 U	NA	5 U	NA	NA
Dichlorodifluoromethane	5	200 U	5 U	NA	5 U	NA	NA
Ethylbenzene	5	20 U	0.5 U	0.87 U	0.5 U	0.87 U	0.87 U
Hexachlorobutadiene	0.5	24 U	0.6 U	NA	0.6 U	NA	NA
Isopropylbenzene	5	20 U	0.5 U	NA	0.5 U	NA	NA
Methyl tert butyl ether	10	40 U	1 U	NA	1 U	NA	NA
Methylene chloride	5	200 U	5 U	0.78 U	5 U	2.9 J	3.6 J
Naphthalene	NS	100 U	2.5 U	NA	2.5 U	NA	NA
n-Butylbenzene	5	20 U	0.5 U	NA	0.5 U	NA	NA
n-Propylbenzene	5	20 U	0.5 U	NA	0.5 U	NA	NA
o-Chlorotoluene	5	100 U	2.5 U	NA	2.5 U	NA	NA
o-Xylene	5	40 U	1 U	NA	1 U	NA	NA
p/m-Xylene	5	40 U	1 U	NA	1 U	NA	NA
p-Chlorotoluene	5	100 U	2.5 U	NA	2.5 U	NA	NA
p-Isopropyltoluene	5	20 U	0.5 U	NA	0.5 U	NA	NA
sec-Butylbenzene	5	20 U	0.5 U	NA	0.5 U	NA	NA
Styrene	5	40 U	1 U	0.64 U	1 U	0.64 U	0.64 U
tert-Butylbenzene	5	100 U	2.5 U	NA	2.5 U	NA	NA
Tetrachloroethene	5	280	0.5 U	0.81 U	0.5 U	0.81 U	0.81 U
Toluene	5	30 U	0.75 U	0.72 U	0.75 U	0.72 U	0.72 U
trans-1,2-Dichloroethene	5	63	0.75 U	0.76 U	0.75 U	0.76 U	0.76 U
trans-1,3-Dichloropropene	0.4	20 U	0.5 U	0.57 U	0.5 U	0.57 U	0.57 U
Trichloroethene	5	260	0.5 U	0.62 U	0.5 U	0.62 U	0.62 U
Trichlorofluoromethane	5	100 U	2.5 U	NA	2.5 U	NA	NA
Vinyl acetate	NS	200 U	5 U	NA	5 U	NA	NA
Vinyl chloride	2	2,100	1 U	0.99 U	1 U	0.99 U	0.99 U
Xylene Total	NS	NA	NA	2.3 U	NA	2.3 U	2.3 U

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-1			SG-2		SG
Lab Sample No.	678932	678937	P0904199-006	678933	P0904199-004	678934
Sampling Date	8/8/2006	8/8/2006	12/2/2009	8/8/2006	12/2/2009	8/8/2006
Dilution Factor	1	1	1.22	5	1.34	20
Units µg/m^3						
Volatile Compounds (GC/MS)		Duplicate Sample of SG-1				
1,1,1-Trichloroethane **	1.1	13	0.61 U	5.5 U	1.6	22 U
1,1,2,2-Tetrachloroethane	1.4 U	1.4 U	0.61 U	6.9 U	0.67 U	27 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	1.5 U	1.5 U	0.61 U	7.7 U	0.67 U	31 U
1,1,2-Trichloroethane	1.1 U	1.1 U	0.61 U	5.5 U	0.67 U	22 U
1,1-Dichloroethane	0.81 U	0.81 U	0.61 U	4 U	0.67 U	16 U
1,1-Dichloroethene	0.79 U	0.79 U	0.61 U	4 U	0.67 U	16 U
1,2,4-Trichlorobenzene	3.7 U	3.7 U	0.61 U	19 U	0.67 U	74 U
1,2,4-Trimethylbenzene	3.7	**39**	0.61 U	**38**	**7.1**	20 U
1,2-Dibromo-3-chloropropane	NA	NA	0.61 U	NA	0.67 U	NA
1,2-Dibromoethane	1.5 U	1.5 U	0.61 U	7.7 U	0.67 U	31 U
1,2-Dichlorobenzene	1.2 U	1.2 U	0.61 U	6 U	0.67 U	24 U
1,2-Dichloroethane	0.81 U	0.81 U	0.61 U	4 U	0.67 U	16 U
1,2-Dichloroethene (cis)	0.79 U	0.79 U	0.61 U	4 U	0.67 U	16 U
1,2-Dichloroethene (total)	0.79 U	0.79 U	NA	4 U	NA	16 U
1,2-Dichloroethene (trans)	0.79 U	0.79 U	0.61 U	4 U	0.67 U	16 U
1,2-Dichloropropane	0.92 U	0.92 U	0.61 U	4.6 U	0.67 U	18 U
1,2-Dichlorotetrafluoroethane (Freon 114)	1.4 U	1.4 U	0.61 U	7 U	0.67 U	28 U
1,3,5-Trimethylbenzene	1.1	11	0.61 U	11	1.3	20 U
1,3-Butadiene	1.1 U	1.1 U	0.61 U	5.5 U	0.67 U	22 U
1,3-Dichlorobenzene	1.2 U	1.2 U	0.61 U	6 U	0.67 U	24 U
1,3-Dichloropropene (cis)	0.91 U	0.91 U	0.61 U	4.5 U	0.67 U	18 U
1,3-Dichloropropene (trans)	0.91 U	0.91 U	0.61 U	4.5 U	0.67 U	18 U
1,4-Dichlorobenzene	1.2 U	**2.5**	0.61 U	6 U	0.67 U	24 U
1,4-Dioxane	18 U	18 U	0.61 U	90 U	0.67 U	360 U
2,2,4-Trimethylpentane	25	93	NA	460	NA	24
4-Methyl-2-pentanone (MIBK)	2 U	2 U	0.61 U	10 U	0.67 U	41 U
Acetone (2-propanone)	17	48	6.1 U	93	6.7 U	240 U
Acetonitrile	NA	NA	0.61 U	NA	0.67 U	NA
Acrolein	NA	NA	2.4 U	NA	2.7 U	NA
Acrylonitrile	NA	NA	0.61 U	NA	0.67 U	NA
alpha-Pinene	NA	NA	0.61 U	NA	0.67 U	NA
Benzene	1	1.2	0.61 U	3.2 U	0.67 U	13 U
Benzyl chloride	NA	NA	0.61 U	NA	0.67 U	NA
Bromodichloromethane	1.3 U	1.3 U	0.61 U	6.7 U	0.67 U	27 U
Bromoethene	0.87 U	0.87 U	NA	4.4 U	NA	17 U
Bromoform	2.1 U	2.1 U	0.61 U	10 U	0.67 U	41 U
Bromomethane (Methyl bromide)	0.78 U	0.78 U	0.61 U	3.9 U	0.67 U	16 U
Carbon disulfide	2.6	14	6.1 U	47	6.7 U	31 U
Carbon tetrachloride	1.3 U	1.3 U	0.61 U	6.3 U	0.67 U	25 U
Chlorobenzene	0.92 U	0.92 U	0.61 U	4.6 U	0.67 U	18 U
Chloroethane (ethyl chloride)	1.3 U	1.3 U	0.61 U	6.6 U	0.67 U	26 U
Chloroform	2.4	**27**	0.61 U	4.9 U	1.2	20 U
Chloromethane (Methyl chloride)	1.2	1 U	0.61 U	5.2 U	0.67 U	21 U
Cumene	NA	NA	0.61 U	NA	0.67 U	NA
Cyclohexane	0.69 U	0.69 U	1.2 U	3.4 U	1.3 U	14 U
Dibromochloromethane	1.7 U	1.7 U	0.61 U	8.5 U	0.67 U	34 U
Dichlorodifluoromethane	**2.8**	**4**	**2.4**	12 U	2.4	49 U
d-Limonene	NA	NA	1.3	NA	0.67 U	NA
Ethanol	NA	NA	6.1 U	NA	6.7 U	NA
Ethyl Acetate	NA	NA	1.2 U	NA	1.3 U	NA
Ethylbenzene	2.1	**8.3**	0.61 U	**17**	**0.67 U**	**26**
Hexachlorobutadiene	2.1 U	2.1 U	0.61 U	11 U	0.67 U	43 U
Isopropyl Alcohol	12 U	12 U	1.2 U	61 U	1.3 U	250 U
Methyl Methacrylate	NA	NA	1.2 U	NA	1.3 U	NA
Methylene Chloride	1.7 U	1.7 U	0.61 U	8.7 U	0.67 U	35 U
MTBE (Methyl tert-butyl ether)	1.8 U	1.8 U	0.61 U	9 U	0.67 U	36 U
Naphthalene	NA	NA	0.61 U	NA	0.67 U	NA
n-Butyl Acetate	NA	NA	0.61 U	NA	0.67 U	NA
n-Heptane	0.82 U	0.82 U	0.61 U	4.1 U	0.67 U	16 U
n-Hexane	1.8 U	1.8 U	0.61 U	8.8 U	0.67 U	35 U
n-Nonane	NA	NA	0.61 U	NA	0.67 U	NA
n-Octane	NA	NA	0.61 U	NA	0.67 U	NA
n-Propylbenzene	NA	NA	0.61 U	NA	0.67 U	NA
Propylene	NA	NA	0.61 U	NA	0.67 U	NA
Styrene	0.85 U	2.1	0.61 U	9.8	0.67 U	17
Tertiary butyl alcohol (TBA)	15 U	15 U	NA	76 U	NA	300 U
Tetrachloroethene (PCE)	16	**250**	**630 D**	**750**	88	**3100**
Tetrahydrofuran **	15 U	15 U	0.61 U	74 U	0.67 U	290 U
Toluene	6.4	17	0.72	36	0.84	20
Trichloroethene (TCE)	1.1 U	1.1 U	4.1	5.4 U	0.67 U	21 U
Trichlorofluoromethane (Freon 11)	1.6	3.9	1.5	5.6 U	1.3	22 U
Vinyl acetate	NA	NA	6.1 U	NA	6.7 U	NA
Vinyl Chloride	0.51 U	0.51 U	0.61 U	2.6 U	0.67 U	10 U
Xylene (m&p)	8.7	48	NA	78	NA	91
Xylene (m,p)	6.1	**33**	1.2 U	**56**	**1.3 U**	**56**
Xylene (o)	2.4	**13**	0.61 U	**21**	**0.67 U**	**32**
Total TICs	NA	NA	37	NA	32.4	NA

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	-3	SG-4		SG-5	
Lab Sample No.	P0904169-008	678936	P0904169-010	678936	P0904169-009
Sampling Date	11/30/2009	8/8/2006	11/30/2009	8/8/2006	11/30/2009
Dilution Factor	1.3	1	1.31	1	1.29
Units µg/m^3					
Volatile Compounds (GC/MS)					
1,1,1-Trichloroethane **	43 U	1.1 U	0.66 U	1.1 U	0.93
1,1,2,2-Tetrachloroethane	43 U	1.4 U	0.66 U	1.4 U	0.65 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	43 U	1.5 U	0.66 U	1.5 U	0.65 U
1,1,2-Trichloroethane	43 U	1.1 U	0.66 U	1.1 U	0.65 U
1,1-Dichloroethane	43 U	0.81 U	0.66 U	0.81 U	0.65 U
1,1-Dichloroethene	43 U	0.79 U	0.66 U	0.79 U	0.65 U
1,2,4-Trichlorobenzene	43 U	3.7 U	0.66 U	3.7 U	0.65 U
1,2,4-Trimethylbenzene	43 U	**7.9**	0.66 U	4.6	3.1
1,2-Dibromo-3-chloropropane	43 U	NA	0.66 U	NA	0.65 U
1,2-Dibromoethane	43 U	1.5 U	0.66 U	1.5 U	0.65 U
1,2-Dichlorobenzene	43 U	1.2 U	0.66 U	1.2 U	0.65 U
1,2-Dichloroethane	43 U	0.81 U	0.66 U	0.81 U	0.65 U
1,2-Dichloroethene (cis)	43 U	0.79 U	0.66 U	0.79 U	0.65 U
1,2-Dichloroethene (total)	NA	0.79 U	NA	0.79 U	NA
1,2-Dichloroethene (trans)	43 U	0.79 U	0.66 U	0.79 U	0.65 U
1,2-Dichloropropane	43 U	0.92 U	0.66 U	0.92 U	0.65 U
1,2-Dichlorotetrafluoroethane (Freon 114)	43 U	1.4 U	0.66 U	1.4 U	0.65 U
1,3,5-Trimethylbenzene	43 U	2.3	0.66 U	1.3	0.99
1,3-Butadiene	43 U	1.1 U	0.66 U	1.1 U	0.65 U
1,3-Dichlorobenzene	43 U	1.2 U	0.66 U	1.2 U	0.65 U
1,3-Dichloropropene (cis)	43 U	0.91 U	0.66 U	0.91 U	0.65 U
1,3-Dichloropropene (trans)	43 U	0.91 U	0.66 U	0.91 U	0.65 U
1,4-Dichlorobenzene	43 U	1.2 U	0.66 U	1.2 U	0.76
1,4-Dioxane	43 U	18 U	1.2	18 U	0.65 U
2,2,4-Trimethylpentane	NA	23	NA	13	NA
4-Methyl-2-pentanone (MIBK)	43 U	2 U	0.66 U	2 U	0.65 U
Acetone (2-propanone)	430 U	26	6.6 U	29	7.4
Acetonitrile	43 U	NA	0.66 U	NA	0.65 U
Acrolein	170 U	NA	2.7	NA	2.6 U
Acrylonitrile	43 U	NA	0.66 U	NA	0.65 U
alpha-Pinene	43 U	NA	0.66 U	NA	0.65 U
Benzene	43 U	**6.1**	0.66 U	2.4	2.7
Benzyl chloride	43 U	NA	0.66 U	NA	0.65 U
Bromodichloromethane	43 U	1.3 U	0.66 U	1.3 U	0.65 U
Bromoethene	NA	0.87 U	NA	0.87 U	NA
Bromoform	43 U	2.1 U	0.66 U	2.1 U	0.65 U
Bromomethane (Methyl bromide)	43 U	0.78 U	0.66 U	0.78 U	0.65 U
Carbon disulfide	430 U	1.6 U	6.6 U	1.8	6.5 U
Carbon tetrachloride	43 U	1.3 U	0.66 U	1.3 U	0.65 U
Chlorobenzene	43 U	0.92 U	0.66 U	0.92 U	0.65 U
Chloroethane (ethyl chloride)	43 U	1.3 U	0.66 U	1.3 U	0.65 U
Chloroform	43 U	0.98	4.2	0.98 U	18
Chloromethane (Methyl chloride)	43 U	1.4	0.66 U	1.3	0.65 U
Cumene	43 U	NA	0.66 U	NA	0.65 U
Cyclohexane	87 U	2.1	1.3 U	0.69 U	1.3 U
Dibromochloromethane	43 U	1.7 U	0.66 U	1.7 U	0.65 U
Dichlorodifluoromethane	43 U	**3.3**	**2.6**	**3.3**	2.6
d-Limonene	43 U	NA	0.66 U	NA	1.5
Ethanol	430 U	NA	6.6 U	NA	6.5 U
Ethyl Acetate	87 U	NA	1.3 U	NA	1.3 U
Ethylbenzene	43 U	**4.3**	0.66 U	2	1.3
Hexachlorobutadiene	43 U	2.1 U	0.66 U	2.1 U	0.65 U
Isopropyl Alcohol	87 U	12 U	1.3 U	16	1.3 U
Methyl Methacrylate	87 U	NA	1.3 U	NA	1.3 U
Methylene Chloride	43 U	1.7 U	0.66 U	**3.5**	0.65 U
MTBE (Methyl tert-butyl ether)	43 U	1.8 U	0.66 U	1.8 U	0.65 U
Naphthalene	43 U	NA	0.66 U	NA	0.65 U
n-Butyl Acetate	43 U	NA	0.66 U	NA	0.65 U
n-Heptane	43 U	5.3	0.66 U	2.1	0.65 U
n-Hexane	43 U	10	0.66 U	3	0.65 U
n-Nonane	43 U	NA	0.66 U	NA	2.8
n-Octane	43 U	NA	0.66 U	NA	1.5
n-Propylbenzene	43 U	NA	0.66 U	NA	0.65 U
Propylene	43 U	NA	0.99	NA	0.96
Styrene	43 U	0.85 U	0.66 U	0.85 U	0.65 U
Tertiary butyl alcohol (TBA)	NA	15 U	NA	15 U	NA
Tetrachloroethene (PCE)	**6,700**	68	54	58	**110**
Tetrahydrofuran **	43 U	15 U	0.66 U	15 U	0.65 U
Toluene	43 U	25	0.89	11	4.0
Trichloroethene (TCE)	43 U	1.1 U	1.4	1.1 U	0.65 U
Trichlorofluoromethane (Freon 11)	43 U	2.1	1.4	1.9	1.4
Vinyl acetate	430 U	NA	6.6 U	NA	6.5 U
Vinyl Chloride	43 U	0.51 U	0.66 U	0.51 U	0.65 U
Xylene (m&p)	NA	20	NA	9.1	NA
Xylene (m,p)	87 U	**13**	1.3 U	6.5	6.1
Xylene (o)	43 U	**5.2**	0.66 U	**2.5**	2.0
Total TICs	ND	NA	158.7	NA	302

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-6		SG-7		SG-8	
Lab Sample No.	L0800907-01	P0904199-001	L0800907-02	P0904201-006	L0800907-04	P0904201-007
Sampling Date	1/18/2008	12/2/2009	1/18/2008	12/1/2009	1/17/2008	12/1/2009
Dilution Factor		1.41		1.28		1.30
Units µg/m^3						
Volatile Compounds (GC/MS)						
1,1,1-Trichloroethane **	92.1 U	470 U	1,420 U	1,300 U	35.4 U	6.7
1,1,2,2-Tetrachloroethane	116 U	470 U	1,780 U	1,300 U	44.6 U	0.65 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	129 U	470 U	1,990 U	1,300 U	49.7 U	0.65 U
1,1,2-Trichloroethane	92.1 U	470 U	1,420 U	1,300 U	35.4 U	0.65 U
1,1-Dichloroethane	68.3 U	470 U	1,050 U	1,300 U	26.3 U	0.65 U
1,1-Dichloroethene	66.9 U	**950**	1,030 U	1,300 U	25.7 U	0.65 U
1,2,4-Trichlorobenzene	125 U	470 U	1,930 U	1,300 U	48.2 U	0.65 U
1,2,4-Trimethylbenzene	83 U	470 U	1,280 U	1,300 U	31.9 U	1
1,2-Dibromo-3-chloropropane	NA	470 U	NA	1,300 U	NA	0.65 U
1,2-Dibromoethane	130 U	470 U	2,000 U	1,300 U	49.9 U	0.65 U
1,2-Dichlorobenzene	101 U	470 U	1,560 U	1,300 U	39 U	0.65 U
1,2-Dichloroethane	68.3 U	470 U	1,050 U	1,300 U	26.3 U	0.65 U
1,2-Dichloroethene (cis)	66.9 U	**370,000** D	**3,400**	**1,500**	25.7 U	0.65 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	66.9 U	11,000	1,030 U	1,300 U	25.7 U	0.65 U
1,2-Dichloropropane	78 U	470 U	1,200 U	1,300 U	30 U	0.65 U
1,2-Dichlorotetrafluoroethane (Freon 114)	118 U	470 U	1,820 U	1,300 U	45.4 U	0.65 U
1,3,5-Trimethylbenzene	83 U	470 U	1,280 U	1,300 U	31.9 U	0.65 U
1,3-Butadiene	37.3 U	470 U	575 U	1,300 U	14.4 U	0.65 U
1,3-Dichlorobenzene	101 U	470 U	1,560 U	1,300 U	39 U	0.65 U
1,3-Dichloropropene (cis)	76.6 U	470 U	1,180 U	1,300 U	29.4 U	0.65 U
1,3-Dichloropropene (trans)	76.6 U	470 U	1,180 U	1,300 U	29.4 U	0.65 U
1,4-Dichlorobenzene	101 U	470 U	1,560 U	1,300 U	39 U	1.3
1,4-Dioxane	122 U	470 U	1,870 U	1,300 U	46.8 U	0.65 U
2,2,4-Trimethylpentane	78.8 U	NA	1,210 U	NA	30.3 U	NA
4-Methyl-2-pentanone (MIBK)	69.1 U	470 U	1,060 U	1,300 U	26.6 U	0.65 U
Acetone (2-propanone)	160 U	4,700 U	2,470 U	13,000 U	61.7 U	7.6
Acetonitrile	NA	470 U	NA	1,300 U	NA	0.65 U
Acrolein	NA	1,900 U	NA	5,100 U	NA	2.6 U
Acrylonitrile	NA	470 U	NA	1,300 U	NA	0.65 U
alpha-Pinene	NA	470 U	NA	1,300 U	NA	0.76
Benzene	53.9 U	470 U	831 U	1,300 U	20.7 U	0.95
Benzyl chloride	87.4 U	470 U	1,350 U	1,300 U	33.6 U	0.65 U
Bromodichloromethane	113 U	470 U	1,740 U	1,300 U	43.5 U	0.77
Bromoethene	73.8 U	NA	1,140 U	NA	28.4 U	NA
Bromoform	174 U	470 U	2,690 U	1,300 U	67.1 U	0.65 U
Bromomethane (Methyl bromide)	65.5 U	470 U	1,010 U	1,300 U	25.2 U	0.65 U
Carbon disulfide	52.6 U	4,700 U	810 U	13,000 U	20.2 U	6.5 U
Carbon tetrachloride	106 U	470 U	1,640 U	1,300 U	40.8 U	0.65 U
Chlorobenzene	77.7 U	470 U	1,200 U	1,300 U	29.9 U	0.65 U
Chloroethane (ethyl chloride)	44.5 U	470 U	686 U	1,300 U	17.1 U	0.65 U
Chloroform	82.4 U	470 U	1,270 U	1,300 U	46.4	**6.7**
Chloromethane (Methyl chloride)	34.8 U	470 U	537 U	1,300 U	13.4 U	0.65 U
Cumene	NA	470 U	NA	1,300 U	NA	0.65 U
Cyclohexane	58.1 U	940 U	895 U	2,600 U	22.3 U	1.3 U
Dibromochloromethane	144 U	470 U	2,220 U	1,300 U	55.3 U	0.65 U
Dichlorodifluoromethane	167 U	470 U	2,570 U	1,300 U	64.2 U	**2.2**
d-Limonene	NA	470 U	NA	1,300 U	NA	3
Ethanol	127 U	4,700 U	1,960 U	13,000 U	48.9 U	36
Ethyl Acetate	60.8 U	940 U	937 U	2,600 U	23.4 U	1.4
Ethylbenzene	73.3 U	470 U	1,130 U	1,300 U	28.2 U	0.81
Hexachlorobutadiene	180 U	470 U	2,770 U	1,300 U	69.2 U	0.65 U
Isopropyl Alcohol	207 U	940 U	3,200 U	2,600 U	79.8 U	2.5
Methyl Methacrylate	NA	940 U	NA	2,600 U	NA	1.3 U
Methylene Chloride	117 U	470 U	1,810 U	1,300 U	45.1 U	0.65 U
MTBE (Methyl tert-butyl ether)	60.8 U	470 U	938 U	1,300 U	23.4 U	0.65 U
Naphthalene	NA	470 U	NA	1,300 U	NA	0.65 U
n-Butyl Acetate	NA	470 U	NA	1,300 U	NA	0.65 U
n-Heptane	69.2 U	470 U	1,060 U	1,300 U	26.6 U	0.65 U
n-Hexane	119 U	470 U	1,830 U	1,300 U	45.7 U	0.65 U
n-Nonane	NA	470 U	NA	1,300 U	NA	0.83
n-Octane	NA	470 U	NA	1,300 U	NA	0.65 U
n-Propylbenzene	NA	470 U	NA	1,300 U	NA	0.65 U
Propylene	58.1 U	470 U	895 U	1,300 U	22.3 U	1.6 M1
Styrene	71.9 U	470 U	1,110 U	1,300 U	27.6 U	0.65 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	**3,240**	**180,000** D	**332,000**	**180,000**	**2,100**	**1,000** D
Tetrahydrofuran **	49.8 U	470 U	767 U	1,300 U	19.1 U	0.65 U
Toluene	63.6 U	470 U	980 U	1,300 U	24.4 U	6.3
Trichloroethene (TCE)	**279**	**81,000**	**9,310**	**6,000**	**47.2**	**12**
Trichlorofluoromethane (Freon 11)	94.8 U	470 U	1,460 U	1,300 U	36.5 U	1.3
Vinyl acetate	59.4 U	4,700 U	916 U	13,000 U	22.8 U	6.5 U
Vinyl Chloride	43.1 U	**2,600**	665 U	1,300 U	16.6 U	0.65 U
Xylene (m&p)	NA	NA	NA	NA	NA	NA
Xylene (m,p)	146 U	940 U	2,260 U	2,600 U	56.4 U	**2.9**
Xylene (o)	73.3 U	470 U	1,130 U	1,300 U	28.2 U	0.78
Total TICs	NA	ND	NA	ND	NA	53.8

Note:
Two Tentatively Identified Compounds (TICs) were identified in SG-12: 5.78 ppbV cyclohexane, 1-methyl-1-(4...) and 5.86 ppbV acetophenone

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-9		SG-10		SG-11	
Lab Sample No.	L0800907-05	P0904199-003	L0800907-06	P0904199-002	L0800907-08	P0904201-010
Sampling Date	1/17/2008	12/2/2009	1/17/2008	12/2/2009	1/17/2008	12/1/2009
Dilution Factor		1.27		1.64		2.02
Units µg/m^3						
Volatile Compounds (GC/MS)						
1,1,1-Trichloroethane **	3.49 U	0.64 U	9.47	15	3.49 U	1 U
1,1,2,2-Tetrachloroethane	4.4 U	0.64 U	4.42 U	0.82 U	4.4 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	4.91 U	0.64 U	4.94 U	0.82 U	4.91 U	1 U
1,1,2-Trichloroethane	3.49 U	0.64 U	3.52 U	0.82 U	3.49 U	1 U
1,1-Dichloroethane	2.59 U	0.64 U	2.61 U	0.82 U	2.59 U	1 U
1,1-Dichloroethene	2.54 U	0.64 U	2.56 U	0.82 U	2.54 U	1 U
1,2,4-Trichlorobenzene	4.75 U	0.64 U	4.78 U	0.82 U	4.75 U	1 U
1,2,4-Trimethylbenzene	3.15 U	1.2	3.17 U	3	3.15 U	1.4
1,2-Dibromo-3-chloropropane	NA	0.64 U	NA	0.82 U	NA	1 U
1,2-Dibromoethane	4.92 U	0.64 U	4.95 U	0.82 U	4.92 U	1 U
1,2-Dichlorobenzene	3.85 U	0.64 U	3.87 U	0.82 U	3.85 U	1 U
1,2-Dichloroethane	2.59 U	0.64 U	2.61 U	0.82 U	2.59 U	1 U
1,2-Dichloroethene (cis)	2.54 U	0.64 U	2.56 U	**86**	2.54 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	2.54 U	0.64 U	2.56 U	1.2	2.54 U	4
1,2-Dichloropropane	2.96 U	0.64 U	2.98 U	0.82 U	2.96 U	1 U
1,2-Dichlorotetrafluoroethane (Freon 114)	4.48 U	0.64 U	4.5 U	0.82 U	4.48 U	1 U
1,3,5-Trimethylbenzene	3.15 U	0.64 U	3.17 U	0.86	3.15 U	1 U
1,3-Butadiene	1.42 U	0.64 U	1.42 U	0.82 U	1.42 U	1 U
1,3-Dichlorobenzene	3.85 U	0.64 U	3.87 U	0.82 U	3.85 U	1 U
1,3-Dichloropropene (cis)	2.91 U	0.64 U	2.92 U	0.82 U	2.91 U	1 U
1,3-Dichloropropene (trans)	2.91 U	0.64 U	2.92 U	0.82 U	2.91 U	1 U
1,4-Dichlorobenzene	3.85 U	1.6	3.87 U	2.2	3.85 U	1.2
1,4-Dioxane	4.62 U	0.64 U	4.64 U	0.82 U	4.62 U	1 U
2,2,4-Trimethylpentane	2.99 U	NA	3.01 U	NA	2.99 U	NA
4-Methyl-2-pentanone (MIBK)	2.62 U	0.64 U	2.64 U	0.82 U	2.62 U	1 U
Acetone (2-propanone)	6.08 U	11 M1	6.12 U	8.2 U	6.08 U	22
Acetonitrile	NA	0.64 U	NA	0.82 U	NA	1 U
Acrolein	NA	2.5 U	NA	3.3 U	NA	4 U
Acrylonitrile	NA	0.64 U	NA	0.82 U	NA	1 U
alpha-Pinene	NA	1.4	NA	0.82 U	NA	1.5
Benzene	2.05 U	0.90	2.06 U	0.82 U	2.05 U	1.4
Benzyl chloride	3.32 U	0.64 U	3.34 U	0.82 U	3.32 U	1 U
Bromodichloromethane	4.29 U	0.64 U	4.32 U	0.82 U	4.29 U	1 U
Bromoethene	2.8 U	NA	2.82 U	NA	2.8 U	NA
Bromoform	6.62 U	0.64 U	6.66 U	0.82 U	6.62 U	1 U
Bromomethane (Methyl bromide)	2.49 U	0.64 U	2.5 U	0.82 U	2.49 U	1 U
Carbon disulfide	1.99 U	6.4 U	2.01 U	8.2 U	1.99 U	10 U
Carbon tetrachloride	4.03 U	0.64 U	4.05 U	0.82 U	4.03 U	1 U
Chlorobenzene	2.95 U	0.64 U	2.97 U	0.82 U	2.95 U	1 U
Chloroethane (ethyl chloride)	1.69 U	0.64 U	1.7 U	0.82 U	1.69 U	1 U
Chloroform	3.13 U	0.64 U	**4.93**	2.9	**10.4**	1.1
Chloromethane (Methyl chloride)	1.32 U	0.64 U	1.33 U	0.82 U	1.32 U	1 U
Cumene	NA	0.64 U	NA	0.82 U	NA	1 U
Cyclohexane	2.2 U	1.3 U	2.22 U	1.6 U	2.2 U	2 U
Dibromochloromethane	5.46 U	0.64 U	5.49 U	0.82 U	5.46 U	1 U
Dichlorodifluoromethane	6.33 U	**2.4**	6.37 U	**2.3**	6.33 U	**2.2**
d-Limonene	NA	2.5	NA	5.2	NA	120
Ethanol	4.83 U	15	5.57	9.4	4.83 U	43
Ethyl Acetate	2.31 U	1.3 U	2.32 U	1.8	2.31 U	220 D
Ethylbenzene	2.78 U	0.73	2.8 U	**4.2**	2.78 U	1.9
Hexachlorobutadiene	6.83 U	0.64 U	6.87 U	0.82 U	6.83 U	1 U
Isopropyl Alcohol	7.87 U	3.3	7.92 U	2.3 M1	7.87 U	15
Methyl Methacrylate	NA	1.3 U	NA	1.6 U	NA	2 U
Methylene Chloride	4.45 U	0.75	4.48 U	0.82 U	4.45 U	1 U
MTBE (Methyl tert-butyl ether)	2.31 U	0.64 U	2.32 U	0.82 U	2.31 U	1 U
Naphthalene	NA	0.70	NA	1.2	NA	1 U
n-Butyl Acetate	NA	0.64 U	NA	0.82 U	NA	1 U
n-Heptane	2.62 U	0.64 U	2.64 U	1	2.62 U	1.2
n-Hexane	4.52 U	0.67	4.54 U	0.82 U	4.52 U	2.2
n-Nonane	NA	0.92	NA	7.8	NA	1.1
n-Octane	NA	0.64 U	NA	1.4	NA	1 U
n-Propylbenzene	NA	0.64 U	NA	0.82 U	NA	1 U
Propylene	2.2 U	1.7 M1	2.22 U	0.86	2.2 U	4.1
Styrene	2.73 U	0.64 U	2.74 U	0.82 U	2.73 U	1.3
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	**150**	**300 D**	**126**	**280 D**	**163**	34
Tetrahydrofuran **	1.89 U	0.64 U	1.9 U	0.82 U	1.89 U	1 U
Toluene	2.41 U	5.1	2.43 U	8.1	2.41 U	20
Trichloroethene (TCE)	3.44 U	0.94	3.46 U	**21**	3.44 U	1 U
Trichlorofluoromethane (Freon 11)	3.6 U	1.6	3.62 U	1.5	3.6 U	1.2
Vinyl acetate	2.26 U	6.4 U	2.27 U	8.2 U	2.26 U	10 U
Vinyl Chloride	1.64 U	0.64 U	1.65 U	0.82 U	1.64 U	1 U
Xylene (m&p)	NA	NA	NA	NA	NA	NA
Xylene (m,p)	5.56 U	2.4	5.6 U	**16**	5.56 U	4
Xylene (o)	2.78 U	0.77	2.8 U	**3.9**	2.78 U	1.2
Total TICs	NA	67.4	NA	187.8	NA	308

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-12			SG-13	
Lab Sample No.	L0800907-09	P0904201-006	P0904201-008	L0800907-10	P0904201-004
Sampling Date	1/17/2008	12/1/2009	12/1/2009	1/17/2008	12/1/2009
Dilution Factor		1.22	1.21		1.17
Units µg/m³			Duplicate Sample of SG-12		
Volatile Compounds (GC/MS)					
1,1,1-Trichloroethane **	3.56 U	0.61 U	0.68	34.5 U	0.59 U
1,1,2,2-Tetrachloroethane	4.48 U	0.61 U	0.61 U	43.4 U	0.59 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	5 U	0.61 U	0.61 U	48.5 U	0.59 U
1,1,2-Trichloroethane	3.56 U	0.61 U	0.61 U	34.5 U	0.59 U
1,1-Dichloroethane	2.64 U	0.61 U	0.61 U	25.6 U	0.59 U
1,1-Dichloroethene	2.59 U	0.61 U	0.61 U	25.1 U	0.59 U
1,2,4-Trichlorobenzene	4.84 U	0.61 U	0.61 U	46.9 U	0.59 U
1,2,4-Trimethylbenzene	3.21 U	0.93	1.2	31.1 U	1.2
1,2-Dibromo-3-chloropropane	NA	0.61 U	0.61 U	NA	0.59 U
1,2-Dibromoethane	5.02 U	0.61 U	0.61 U	48.6 U	0.59 U
1,2-Dichlorobenzene	3.92 U	0.61 U	0.61 U	38 U	0.59 U
1,2-Dichloroethane	2.64 U	0.61 U	0.61 U	25.6 U	0.59 U
1,2-Dichloroethene (cis)	2.59 U	0.61 U	0.61 U	25.1 U	0.59 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	2.59 U	0.61 U	0.61 U	25.1 U	0.59 U
1,2-Dichloropropane	3.02 U	0.61 U	0.61 U	29.2 U	0.59 U
1,2-Dichlorotetrafluoroethane (Freon 114)	4.56 U	0.61 U	0.61 U	44.2 U	0.59 U
1,3,5-Trimethylbenzene	3.21 U	0.61 U	0.61 U	31.1 U	0.59 U
1,3-Butadiene	1.44 U	0.61 U	0.61 U	14 U	0.59 U
1,3-Dichlorobenzene	3.92 U	0.61 U	0.61 U	38 U	0.59 U
1,3-Dichloropropene (cis)	2.96 U	0.61 U	0.61 U	28.7 U	0.59 U
1,3-Dichloropropene (trans)	2.96 U	0.61 U	0.61 U	28.7 U	0.59 U
1,4-Dichlorobenzene	3.92 U	**8.5**	**6.8**	38 U	1.2
1,4-Dioxane	4.71 U	0.61 U	0.61 U	45.6 U	0.59 U
2,2,4-Trimethylpentane	3.05 U	NA	NA	29.5 U	NA
4-Methyl-2-pentanone (MIBK)	2.67 U	0.61 U	0.61 U	25.9 U	0.59 U
Acetone (2-propanone)	6.2 U	45	35	60.1 U	9.9
Acetonitrile	NA	0.61 U	0.61 U	NA	0.59 U
Acrolein	NA	2.4 U	2.4 U	NA	2.3 U
Acrylonitrile	NA	0.61 U	0.61 U	NA	0.59 U
alpha-Pinene	NA	1.0	1.5	NA	0.59 U
Benzene	2.08 U	1.6	1.8	20.2 U	2.1
Benzyl chloride	3.38 U	0.61 U	0.61 U	32.7 U	0.59 U
Bromodichloromethane	4.38 U	0.61 U	0.61 U	42.4 U	0.59 U
Bromoethene	2.86 U	NA	NA	27.7 U	NA
Bromoform	6.75 U	0.61 U	0.61 U	65.4 U	0.59 U
Bromomethane (Methyl bromide)	2.54 U	0.61 U	0.61 U	24.6 U	0.59 U
Carbon disulfide	2.03 U	6.1 U	6.1 U	19.7 U	5.9 U
Carbon tetrachloride	4.11 U	0.61 U	0.61 U	39.8 U	0.59 U
Chlorobenzene	3 U	0.61 U	0.61 U	29.1 U	0.59 U
Chloroethane (ethyl chloride)	1.72 U	0.61 U	0.61 U	16.7 U	0.59 U
Chloroform	**15.1**	0.61 U	0.99	30.9 U	0.59 U
Chloromethane (Methyl chloride)	1.35 U	0.74	0.72	13.1 U	0.59 U
Cumene	NA	0.61 U	0.61 U	NA	0.59 U
Cyclohexane	2.25 U	1.2 U	1.2 U	21.8 U	1.2 U
Dibromochloromethane	5.56 U	0.61 U	0.61 U	53.9 U	0.59 U
Dichlorodifluoromethane	6.46 U	**2.3**	**2.3**	62.6 U	**2.3**
d-Limonene	NA	0.76	1.7	NA	0.59 U
Ethanol	4.92 U	17	27	47.7 U	15
Ethyl Acetate	2.35 U	1.2 U	1.4	22.8 U	1.7
Ethylbenzene	2.84 U	1.4	1.5	27.5 U	1
Hexachlorobutadiene	6.96 U	0.61 U	0.61 U	67.4 U	0.59 U
Isopropyl Alcohol	8.02 U	2.2	4.8	77.7 U	1.7
Methyl Methacrylate	NA	1.2 U	1.2 U	NA	1.2 U
Methylene Chloride	4.54 U	0.80	0.78	43.9 U	0.59 U
MTBE (Methyl tert-butyl ether)	2.35 U	0.61 U	0.61 U	22.8 U	0.59 U
Naphthalene	NA	0.61 U	0.61 U	NA	0.59 U
n-Butyl Acetate	NA	0.61 U	0.61 U	NA	0.59 U
n-Heptane	2.68 U	0.70	0.89	25.9 U	0.96
n-Hexane	4.6 U	1.1	1.2	44.6 U	1.8
n-Nonane	NA	2.5	2.1	NA	0.99
n-Octane	NA	1.3	1.1	NA	0.68
n-Propylbenzene	NA	0.61 U	0.61 U	NA	0.59 U
Propylene	2.25 U	2.2	2.4	21.8 U	3.1 M1
Styrene	2.78 U	0.95	1	26.9 U	0.59 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	29.6	0.66	22	**2,150**	**480** D
Tetrahydrofuran **	1.92 U	0.61 U	3	18.6 U	0.59 U
Toluene	2.46 U	25	18	23.8 U	7.3
Trichloroethene (TCE)	3.51 U	0.61 U	0.61 U	34 U	2.8
Trichlorofluoromethane (Freon 11)	3.67 U	1.2	1.2	35.5 U	1.1
Vinyl acetate	2.3 U	6.1 U	6.1 U	22.3 U	5.9 U
Vinyl Chloride	1.67 U	0.61 U	0.61 U	16.2 U	0.59 U
Xylene (m&p)	NA	NA	NA	NA	NA
Xylene (m,p)	5.67 U	4.7	4.7	54.9 U	3.4
Xylene (o)	2.84 U	1.2	1.4	27.5 U	1.1
Total TICs	NA	66	66.1	NA	30.7

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-14		SG-22	SG-23	SG-24
Lab Sample No.	L0800907-11	P0904201-009	P0904169-007	P0904169-006	P0904201-003
Sampling Date	1/18/2008	12/1/2009	11/30/2009	11/30/2009	12/1/2009
Dilution Factor		1.27	1.28	1.28	1.27
Units µg/m³					
Volatile Compounds (GC/MS)					
1,1,1-Trichloroethane **	3.59 U	0.66	4.3 U	6.4 U	3.2 U
1,1,2,2-Tetrachloroethane	4.51 U	0.64 U	4.3 U	6.4 U	3.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	5.04 U	0.64 U	4.3 U	6.4 U	3.2 U
1,1,2-Trichloroethane	3.59 U	0.64 U	4.3 U	6.4 U	3.2 U
1,1-Dichloroethane	2.66 U	0.64 U	4.3 U	6.4 U	3.2 U
1,1-Dichloroethene	2.61 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2,4-Trichlorobenzene	4.88 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2,4-Trimethylbenzene	3.23 U	2.8	4.3 U	6.4 U	10
1,2-Dibromo-3-chloropropane	NA	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dibromoethane	5.05 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichlorobenzene	3.95 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichloroethane	2.66 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichloroethene (cis)	2.61 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	2.61 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichloropropane	3.04 U	0.64 U	4.3 U	6.4 U	3.2 U
1,2-Dichlorotetrafluoroethane (Freon 114)	4.6 U	0.64 U	4.3 U	6.4 U	3.2 U
1,3,5-Trimethylbenzene	3.23 U	2.4	4.3 U	6.4 U	3.4
1,3-Butadiene	1.45 U	0.64 U	4.3 U	6.4 U	3.2 U
1,3-Dichlorobenzene	3.95 U	0.64 U	4.3 U	6.4 U	3.2 U
1,3-Dichloropropene (cis)	2.98 U	0.64 U	4.3 U	6.4 U	3.2 U
1,3-Dichloropropene (trans)	2.98 U	0.64 U	4.3 U	6.4 U	3.2 U
1,4-Dichlorobenzene	3.95 U	0.64	4.3 U	6.4 U	3.2 U
1,4-Dioxane	4.74 U	0.64 U	4.3 U	6.4 U	3.2 U
2,2,4-Trimethylpentane	3.07 U	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	2.69 U	0.64 U	4.3 U	6.4 U	3.2 U
Acetone (2-propanone)	6.25 U	6.6	43 U	64 U	56
Acetonitrile	NA	0.64 U	4.3 U	6.4 U	3.2 U
Acrolein	NA	2.5 U	17 U	26 U	13 U
Acrylonitrile	NA	0.64 U	4.3 U	6.4 U	3.2 U
alpha-Pinene	NA	0.79	4.3 U	6.4 U	5.1
Benzene	2.1 U	0.97	4.3 U	6.4 U	3.7
Benzyl chloride	3.4 U	0.64 U	4.3 U	6.4 U	3.2 U
Bromodichloromethane	4.4 U	0.64 U	4.3 U	6.4 U	3.2 U
Bromoethene	2.88 U	NA	NA	NA	NA
Bromoform	6.8 U	0.64 U	4.3 U	6.4 U	3.2 U
Bromomethane (Methyl bromide)	2.55 U	0.64 U	4.3 U	6.4 U	3.2 U
Carbon disulfide	2.05 U	6.4 U	43 U	64 U	32 U
Carbon tetrachloride	4.14 U	0.64 U	4.3 U	6.4 U	3.2 U
Chlorobenzene	3.03 U	0.64 U	4.3 U	6.4 U	3.2 U
Chloroethane (ethyl chloride)	1.73 U	0.64 U	4.3 U	6.4 U	3.2 U
Chloroform	**5.95**	3.6	**120**	6.4 U	3.2 U
Chloromethane (Methyl chloride)	1.36 U	0.64 U	4.3 U	6.4 U	3.2 U
Cumene	NA	0.64 U	4.3 U	6.4 U	3.2 U
Cyclohexane	2.26 U	1.3 U	8.5 U	34	50
Dibromochloromethane	5.6 U	0.64 U	4.3 U	6.4 U	3.2 U
Dichlorodifluoromethane	6.5 U	**2.7**	4.3 U	6.4 U	3.2 U
d-Limonene	NA	0.86	4.3 U	6.4 U	3.2 U
Ethanol	4.96 U	12	43 U	64 U	32 U
Ethyl Acetate	2.37 U	2.2	8.5 U	13 U	6.4 U
Ethylbenzene	2.85 U	**3.6**	4.3 U	6.4 U	**5.2**
Hexachlorobutadiene	7.01 U	0.64 U	4.3 U	6.4 U	3.2 U
Isopropyl Alcohol	8.08 U	2.8	8.5 U	13 U	6.4 U
Methyl Methacrylate	NA	1.3 U	8.5 U	13 U	6.4 U
Methylene Chloride	4.57 U	0.64 U	4.3 U	6.4 U	3.2 U
MTBE (Methyl tert-butyl ether)	2.37 U	0.64 U	4.3 U	6.4 U	17
Naphthalene	NA	0.64 U	4.3 U	6.4 U	3.2 U
n-Butyl Acetate	NA	0.64 U	4.3 U	6.4 U	3.2 U
n-Heptane	2.69 U	1.1	4.3 U	10	300
n-Hexane	4.63 U	0.77	4.3 U	11	25
n-Nonane	NA	1.6	4.3 U	6.4 U	21
n-Octane	NA	1.3	4.3 U	6.4 U	22
n-Propylbenzene	NA	0.64 U	4.3 U	6.4 U	3.2 U
Propylene	2.26 U	1.5	4.3 U	14	25 M1
Styrene	2.8 U	0.64 U	4.3 U	6.4 U	3.2 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	70.6	88	**780**	27	7
Tetrahydrofuran **	1.94 U	0.64 U	4.3 U	6.4 U	3.2 U
Toluene	2.48 U	4.2	4.3 U	66	400
Trichloroethene (TCE)	3.53 U	0.64 U	**13**	6.4 U	3.9
Trichlorofluoromethane (Freon 11)	3.69 U	1.2	4.3 U	6.4 U	3.2 U
Vinyl acetate	2.31 U	6.4 U	43 U	64 U	32 U
Vinyl Chloride	1.68 U	0.64 U	4.3 U	6.4 U	3.2 U
Xylene (m&p)	NA	NA	NA	NA	NA
Xylene (m,p)	5.71 U	**21**	8.5 U	13 U	**18**
Xylene (o)	2.85 U	1.4	4.3 U	6.4 U	**6.2**
Total TICs	NA	125.3	3,522	20,570	3,880

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	SG-25	SG-26	SG-27	SG-28	SG-29	SG-30
Lab Sample No.	P0904169-005	P0904169-004	P0904169-003	P0904169-002	P0904169-006	P0904201-002
Sampling Date	11/30/2009	11/30/2009	11/30/2009	11/30/2009	11/30/2009	12/1/2009
Dilution Factor	1.25	1.32	1.2	1.26	1.28	1.26
Units µg/m^3						
Volatile Compounds (GC/MS)						
1,1,1-Trichloroethane **	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,1,2,2-Tetrachloroethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,1,2-Trichloroethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,1-Dichloroethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,1-Dichloroethene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2,4-Trichlorobenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2,4-Trimethylbenzene	10	0.88	1.3	7.9 U	0.72	**9.4**
1,2-Dibromo-3-chloropropane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dibromoethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichlorobenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichloroethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichloroethene (cis)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichloropropane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,2-Dichlorotetrafluoroethane (Freon 114)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,3,5-Trimethylbenzene	12	0.73	0.78	7.9 U	0.57 U	1.8
1,3-Butadiene	1.3 U	0.66 U	2.6	7.9 U	0.57 U	0.63 U
1,3-Dichlorobenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,3-Dichloropropene (cis)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,3-Dichloropropene (trans)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
1,4-Dichlorobenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.60	0.63 U
1,4-Dioxane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
2,2,4-Trimethylpentane	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Acetone (2-propanone)	67	6.6 U	6.0 U	79 U	7.3	12
Acetonitrile	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Acrolein	5.0 U	2.6 U	2.4 U	32 U	2.3 U	2.5 U
Acrylonitrile	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
alpha-Pinene	76	0.77	5.6	7.9 U	0.57 U	0.63 U
Benzene	1.3 U	0.66 U	1.2	7.9 U	1.2	0.63 U
Benzyl chloride	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Bromodichloromethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Bromoethene	NA	NA	NA	NA	NA	NA
Bromoform	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Bromomethane (Methyl bromide)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Carbon disulfide	13 U	6.6 U	6.0 U	79 U	5.7 U	6.3 U
Carbon tetrachloride	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Chlorobenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Chloroethane (ethyl chloride)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Chloroform	1.3 U	2.3	3.5	**14**	0.57 U	**21**
Chloromethane (Methyl chloride)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Cumene	3.5	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Cyclohexane	43	1.3 U	2.4	16 U	1.1 U	1.3 U
Dibromochloromethane	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Dichlorodifluoromethane	**2.1**	**2.3**	**2.5**	7.9 U	**2.3**	**2.3**
d-Limonene	2.3	0.66 U	0.96	7.9 U	0.65	1.2
Ethanol	13 U	6.6 U	6.0 U	79 U	20	6.3 U
Ethyl Acetate	2.5 U	1.3 U	1.2 U	16 U	14	1.3 U
Ethylbenzene	**2.8**	0.66 U	1.5	7.9 U	0.74	0.76
Hexachlorobutadiene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Isopropyl Alcohol	2.5 U	1.3 U	1.2 U	16 U	2.2	1.3 U
Methyl Methacrylate	2.5 U	1.3 U	1.2 U	16 U	1.1 U	1.3 U
Methylene Chloride	1.3 U	0.66 U	0.60 U	7.9 U	0.78	0.63 U
MTBE (Methyl tert-butyl ether)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Naphthalene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
n-Butyl Acetate	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.67
n-Heptane	150	0.70	65	7.9 U	0.57 U	0.63 U
n-Hexane	11	0.66 U	100	7.9 U	0.72	0.63 U
n-Nonane	35	2.5	25	7.9 U	1.1	2.0
n-Octane	150	1.9	43	7.9 U	0.90	1.2
n-Propylbenzene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.79
Propylene	3.4	0.66 U	170 D	7.9 U	1.4	0.63 U
Styrene	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	**140**	**130**	16	**1,200**	15	**130**
Tetrahydrofuran **	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Toluene	63	3.5	5.6	7.9 U	6.8	15
Trichloroethene (TCE)	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Trichlorofluoromethane (Freon 11)	1.3 U	1.1	1	7.9 U	1.1	0.80
Vinyl acetate	13 U	6.6 U	6 U	79 U	5.7 U	6.3 U
Vinyl Chloride	1.3 U	0.66 U	0.60 U	7.9 U	0.57 U	0.63 U
Xylene (m&p)	NA	NA	NA	NA	NA	NA
Xylene (m,p)	**17**	2.2	4.9	16 U	2.4	3.2
Xylene (o)	**9.6**	0.71	1.6	7.9 U	0.74	0.90
Total TICs	3,270	1,043.60	3,241	60	99.7	185.3

Table 6

2350 Fifth Avenue

New York, NY

Results of Soil Vapor Samples

Volatile Organic Compounds

Sample ID Lab Sample No. Sampling Date Dilution Factor Units µg/m³	SG-31 P0904201-001 12/1/2009 1.26	AA L0800907-07 1/17/2008	Duplicate L0800907-03 1/18/2008	QC AMBIENT P0904201-011 12/1/2009 1.21	Outdoor Ambient P0904199-006 12/2/2009 1.26	TRIP BLANK P0904169-011 11/30/2009 1	TRIP BLANK P0904201-012 12/1/2009 1
Volatile Compounds (GC/MS)							
1,1,1-Trichloroethane **	0.63 U	3.47 U	3.59 U	0.61 U	0.63 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.63 U	4.37 U	4.51 U	0.61 U	0.63 U	0.50 U	0.50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	0.63 U	4.88 U	5.04 U	0.61 U	0.63 U	0.50 U	0.50 U
1,1,2-Trichloroethane	0.63 U	3.47 U	3.59 U	0.61 U	0.63 U	0.50 U	0.50 U
1,1-Dichloroethane	0.63 U	2.58 U	2.66 U	0.61 U	0.63 U	0.50 U	0.50 U
1,1-Dichloroethene	0.63 U	2.52 U	2.61 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	0.63 U	4.72 U	4.88 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	**8.9**	3.13 U	3.23 U	0.81	4.5	0.50 U	0.50 U
1,2-Dibromo-3-chloropropane	0.63 U	NA	NA	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dibromoethane	0.63 U	4.89 U	5.05 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichlorobenzene	0.63 U	3.83 U	3.95 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichloroethane	0.63 U	2.58 U	2.66 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichloroethene (cis)	0.63 U	2.52 U	2.61 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	0.63 U	2.52 U	2.61 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichloropropane	0.63 U	2.94 U	3.04 U	0.61 U	0.63 U	0.50 U	0.50 U
1,2-Dichlorotetrafluoroethane (Freon 114)	0.63 U	4.45 U	4.6 U	0.61 U	0.63 U	0.50 U	0.50 U
1,3,5-Trimethylbenzene	1.5	3.13 U	3.23 U	0.61 U	1.5	0.50 U	0.50 U
1,3-Butadiene	0.63 U	1.41 U	1.45 U	0.61 U	0.66	0.50 U	0.50 U
1,3-Dichlorobenzene	0.63 U	3.83 U	3.95 U	0.61 U	0.63 U	0.50 U	0.50 U
1,3-Dichloropropene (cis)	0.63 U	2.89 U	2.98 U	0.61 U	0.63 U	0.50 U	0.50 U
1,3-Dichloropropene (trans)	0.63 U	2.89 U	2.98 U	0.61 U	0.63 U	0.50 U	0.50 U
1,4-Dichlorobenzene	0.63 U	3.83 U	3.95 U	**10**	2	0.50 U	0.50 U
1,4-Dioxane	0.63 U	4.59 U	4.74 U	0.61 U	0.63 U	0.50 U	0.50 U
2,2,4-Trimethylpentane	NA	2.97 U	3.07 U	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	0.63 U	2.61 U	2.69 U	0.61 U	0.63 U	0.50 U	0.50 U
Acetone (2-propanone)	10	11.8	6.25 U	21	17	5.0 U	5 U
Acetonitrile	0.63 U	NA	NA	0.61 U	0.63 U	0.50 U	0.50 U
Acrolein	2.5 U	NA	NA	2.4 U	2.5 U	2.0 U	2 U
Acrylonitrile	0.63 U	NA	NA	0.61 U	0.63 U	0.50 U	0.50 U
alpha-Pinene	0.63 U	NA	NA	0.61 U	0.63 U	0.50 U	0.50 U
Benzene	0.63 U	2.03 U	2.1 U	1.2	**5.1**	0.50 U	0.50 U
Benzyl chloride	0.63 U	3.3 U	3.4 U	0.61 U	0.63 U	0.50 U	0.50 U
Bromodichloromethane	0.63 U	4.26 U	4.4 U	0.61 U	0.63 U	0.50 U	0.50 U
Bromoethene	NA	2.78 U	2.88 U	NA	0.63 U	NA	NA
Bromoform	0.63 U	6.58 U	6.8 U	0.61 U	NA	0.50 U	0.50 U
Bromomethane (Methyl bromide)	0.63 U	2.47 U	2.55 U	0.61 U	0.63 U	0.50 U	0.50 U
Carbon disulfide	6.3 U	1.98 U	2.05 U	6.1 U	6.3 U	5.0 U	5 U
Carbon tetrachloride	0.63 U	4 U	4.14 U	0.61 U	0.63 U	0.50 U	0.50 U
Chlorobenzene	0.63 U	2.93 U	3.03 U	0.61 U	0.63 U	0.50 U	0.50 U
Chloroethane (ethyl chloride)	0.63 U	1.68 U	1.73 U	0.61 U	0.63 U	0.50 U	0.50 U
Chloroform	4	3.11 U	**5.45**	0.61 U	0.63 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	0.63 U	1.31 U	1.36 U	0.67	0.63 U	0.50 U	0.50 U
Cumene	0.63 U	NA	NA	0.61 U	0.63 U	0.50 U	0.50 U
Cyclohexane	1.3 U	2.19 U	2.26 U	1.2 U	1.9	1 U	1 U
Dibromochloromethane	0.63 U	5.42 U	5.6 U	0.61 U	0.63 U	0.50 U	0.50 U
Dichlorodifluoromethane	**2.2**	6.3 U	6.5 U	**2.3**	**2.5**	0.50 U	0.50 U
d-Limonene	0.90	NA	NA	0.61 U	1.1	0.50 U	0.50 U
Ethanol	6.3 U	10.8	4.96 U	20	55	5.2	7.3
Ethyl Acetate	1.3 U	2.29 U	2.37 U	1.2 U	1.3 U	1 U	1 U
Ethylbenzene	0.94	2.76 U	2.85 U	0.79	**3.1**	0.50 U	0.50 U
Hexachlorobutadiene	0.63 U	6.79 U	7.01 U	0.61 U	0.63 U	0.50 U	0.50 U
Isopropyl Alcohol	1.3 U	7.82 U	8.08 U	2.1	4.7	1 U	1 U
Methyl Methacrylate	1.3 U	NA	NA	1.2 U	1.3 U	1 U	1 U
Methylene Chloride	0.63 U	4.42 U	4.57 U	1.3	**5.9**	0.50 U	0.50 U
MTBE (Methyl tert-butyl ether)	0.63 U	2.29 U	2.37 U	0.61 U	0.63 U	0.50 U	0.50 U
Naphthalene	0.67	NA	NA	0.61 U	0.93	0.50 U	0.50 U
n-Butyl Acetate	0.63 U	NA	NA	0.61 U	0.73	0.50 U	0.50 U
n-Heptane	0.63 U	2.61 U	2.69 U	0.61 U	3.6	1.4	0.50 U
n-Hexane	0.63 U	4.49 U	4.63 U	0.92	6.3	0.51	0.50 U
n-Nonane	2.5	NA		1.9	1.9	0.50 U	0.50 U
n-Octane	1.5	NA		0.61	1.9	0.50 U	0.50 U
n-Propylbenzene	0.72	NA		0.61 U	0.88	0.50 U	0.50 U
Propylene	0.63 U	2.19 U	2.26 U	2.6 M1	6.2	0.50 U	0.50 U
Styrene	0.63 U	2.71 U	2.8 U	0.61 U	0.63 U	0.50 U	0.50 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	74	4.32 U	71.1	0.89	2.4	0.50 U	0.50 U
Tetrahydrofuran **	0.63 U	1.88 U	1.94 U	0.61 U	0.63 U	0.50 U	0.50 U
Toluene	2.9	3.12	2.48 U	7.5	19	10	0.50 U
Trichloroethene (TCE)	0.63 U	3.42 U	3.53 U	0.61 U	0.63 U	0.50 U	0.50 U
Trichlorofluoromethane (Freon 11)	1.5	3.58 U	3.69 U	1.2	2.9	0.50 U	0.50 U
Vinyl acetate	6.3 U	2.24 U	2.31 U	6.1 U	6.3 U	5 U	5 U
Vinyl Chloride	0.63 U	1.63 U	1.68 U	0.61 U	0.63 U	0.50 U	0.50 U
Xylene (m&p)	NA	NA	NA	NA	NA	NA	NA
Xylene (m,p)	4.3	5.53 U	5.71 U	2.5	10	1.0 U	1 U
Xylene (o)	1.3	2.76 U	2.85 U	0.73	**3.9**	0.50 U	0.50 U
Total TICs	385.7	NA	NA	55.7	207	143	ND

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	TRIP BLANK	METHOD BLANK	METHOD BLANK	METHOD BLANK	METHOD BLANK	METHOD BLANK
Lab Sample No.	P0904199-007	P091208-MB	P091209-MB	P091210-MB	P091214-MB	P091215-MB
Sampling Date	12/2/2009	12/8/2009	12/9/2009	12/10/2009	12/14/2009	12/15/2009
Dilution Factor	1	1	1	1	1	1
Units µg/m^3						
Volatile Compounds (GC/MS)						
1,1,1-Trichloroethane **	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-chloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethene (cis)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorotetrafluoroethane (Freon 114)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3,5-Trimethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Butadiene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropene (cis)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropene (trans)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dioxane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,2,4-Trimethylpentane	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Acetone (2-propanone)	5 U	5 U	5 U	5 U	5 U	5 U
Acetonitrile	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Acrolein	2 U	2 U	2 U	2 U	2 U	2 U
Acrylonitrile	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
alpha-Pinene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzyl chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoethene	0.50 U	NA	NA	NA	NA	NA
Bromoform	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane (ethyl chloride)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cumene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
d-Limonene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethanol	5 U	5 U	5 U	5 U	5 U	5 U
Ethyl Acetate	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Hexachlorobutadiene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl Alcohol	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Methacrylate	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MTBE (Methyl tert-butyl ether)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Butyl Acetate	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Heptane	2.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Hexane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Nonane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Octane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
n-Propylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Propylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tertiary butyl alcohol (TBA)	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrahydrofuran **	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	0.50	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene (TCE)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (Freon 11)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl acetate	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylene (m&p)	NA	NA	NA	NA	NA	NA
Xylene (m,p)	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (o)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Total TICs	ND	ND	ND	ND	ND	ND

Table 6
2350 Fifth Avenue
New York, NY
Results of Soil Vapor Samples
Volatile Organic Compounds

Sample ID	METHOD BLANK	METHOD BLANK	FIELDBLANK-1
Lab Sample No.	P091211-MB	P091214-MB	678938
Sampling Date	12/11/2009	12/14/2009	8/8/2006
Dilution Factor	1	1	1
Units µg/m^3			
Volatile Compounds (GC/MS)			
1,1,1-Trichloroethane **	0.50 U	0.50 U	1.1 U
1,1,2,2-Tetrachloroethane	0.50 U	0.50 U	1.4 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	0.50 U	0.50 U	1.5 U
1,1,2-Trichloroethane	0.50 U	0.50 U	1.1 U
1,1-Dichloroethane	0.50 U	0.50 U	0.81 U
1,1-Dichloroethene	0.50 U	0.50 U	0.79 U
1,2,4-Trichlorobenzene	0.50 U	0.50 U	3.7 U
1,2,4-Trimethylbenzene	0.50 U	0.50 U	0.98 U
1,2-Dibromo-3-chloropropane	0.50 U	0.50 U	NA
1,2-Dibromoethane	0.50 U	0.50 U	1.5 U
1,2-Dichlorobenzene	0.50 U	0.50 U	1.2 U
1,2-Dichloroethane	0.50 U	0.50 U	0.81 U
1,2-Dichloroethene (cis)	0.50 U	0.50 U	0.79 U
1,2-Dichloroethene (total)	NA	NA	0.79 U
1,2-Dichloroethene (trans)	0.50 U	0.50 U	0.79 U
1,2-Dichloropropane	0.50 U	0.50 U	0.92 U
1,2-Dichlorotetrafluoroethane (Freon 114)	0.50 U	0.50 U	1.4 U
1,3,5-Trimethylbenzene	0.50 U	0.50 U	0.98 U
1,3-Butadiene	0.50 U	0.50 U	1.1 U
1,3-Dichlorobenzene	0.50 U	0.50 U	1.2 U
1,3-Dichloropropene (cis)	0.50 U	0.50 U	0.91 U
1,3-Dichloropropene (trans)	0.50 U	0.50 U	0.91 U
1,4-Dichlorobenzene	0.50 U	0.50 U	1.2 U
1,4-Dioxane	0.50 U	0.50 U	18 U
2,2,4-Trimethylpentane	NA	NA	0.93 U
4-Methyl-2-pentanone (MIBK)	0.50 U	0.50 U	2 U
Acetone (2-propanone)	5 U	5 U	12 U
Acetonitrile	0.50 U	0.50 U	NA
Acrolein	2 U	2 U	NA
Acrylonitrile	0.50 U	0.50 U	NA
alpha-Pinene	0.50 U	0.50 U	NA
Benzene	0.50 U	0.50 U	0.64 U
Benzyl chloride	0.50 U	0.50 U	NA
Bromodichloromethane	0.50 U	0.50 U	1.3 U
Bromoethene	NA	NA	0.87 U
Bromoform	0.50 U	0.50 U	2.1 U
Bromomethane (Methyl bromide)	0.50 U	0.50 U	0.78 U
Carbon disulfide	5 U	5 U	1.6 U
Carbon tetrachloride	0.50 U	0.50 U	1.3 U
Chlorobenzene	0.50 U	0.50 U	0.92 U
Chloroethane (ethyl chloride)	0.50 U	0.50 U	1.3 U
Chloroform	0.50 U	0.50 U	0.98 U
Chloromethane (Methyl chloride)	0.50 U	0.50 U	1.3
Cumene	0.50 U	0.50 U	NA
Cyclohexane	1 U	1 U	0.69 U
Dibromochloromethane	0.50 U	0.50 U	1.7 U
Dichlorodifluoromethane	0.50 U	0.50 U	**2.9**
d-Limonene	0.50 U	0.50 U	NA
Ethanol	5 U	5 U	NA
Ethyl Acetate	1 U	1 U	NA
Ethylbenzene	0.50 U	0.50 U	0.87 U
Hexachlorobutadiene	0.50 U	0.50 U	2.1 U
Isopropyl Alcohol	1 U	1 U	12 U
Methyl Methacrylate	1 U	1 U	NA
Methylene Chloride	0.50 U	0.50 U	1.7 U
MTBE (Methyl tert-butyl ether)	0.50 U	0.50 U	1.8 U
Naphthalene	0.50 U	0.50 U	NA
n-Butyl Acetate	0.50 U	0.50 U	NA
n-Heptane	0.50 U	0.50 U	0.82 U
n-Hexane	0.50 U	0.50 U	1.8 U
n-Nonane	0.50 U	0.50 U	NA
n-Octane	0.50 U	0.50 U	NA
n-Propylbenzene	0.50 U	0.50 U	NA
Propylene	0.50 U	0.50 U	NA
Styrene	0.50 U	0.50 U	0.85 U
Tertiary butyl alcohol (TBA)	NA	NA	15 U
Tetrachloroethene (PCE)	0.50 U	0.50 U	1.4 U
Tetrahydrofuran **	0.50 U	0.50 U	15 U
Toluene	0.50 U	0.50 U	1.7
Trichloroethene (TCE)	0.50 U	0.50 U	1.1 U
Trichlorofluoromethane (Freon 11)	0.50 U	0.50 U	1.5
Vinyl acetate	5 U	5 U	NA
Vinyl Chloride	0.50 U	0.50 U	0.51 U
Xylene (m&p)	NA	NA	0.87 U
Xylene (m,p)	1 U	1 U	2.2 U
Xylene (o)	0.50 U	0.50 U	0.87 U
Total TICs	ND	ND	NA

Table 7a
2350 Fifth Avenue
New York, NY
Results of Historical Indoor Air Samples
Tetrachloroethene and Breakdown Products

Location	Compound µg/m³	Sample Date						
		6/30/1997	7/18/1997	9/13/1997	10/2/1997	8/13/1998	8/23/1999	11/27/2001
Room 112 (P35)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	1.07	ND	ND
	Tetrachloroethene	38.37	30.51	**128.82**	77.97	62.38	66.44	14.92
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	2.1	2.16	2.29	ND	3.1	2.26	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Room 131 (P33)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	15.8	22.92	**113.9**	63.53	40.68	24.41	5.7
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	1.78	1.88	ND	ND	3.11	0.58	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Room 129 (P16)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	DN	ND	ND	ND	ND
	Tetrachloroethene	20.34	20.41	**109.16**	60.34	40	16.95	4.81
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	1.84	2.08	1.8	ND	3	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Corridor outside Room 118	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	42.99	45.77	56.27	23.53	48.14	42.04	2.92
	trans-1,2-Dichloroethene	ND	ND	ND	ND	0.99	1.03	ND
	Trichloroethene	ND	2.24	ND	ND	3.11	1.29	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Cafeteria (Room 122-P10)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	70.51	65.29	52.21	22.37	47.46	37.29	2.51
	trans-1,2-Dichloroethene	ND	ND	ND	ND	0.99	1.23	ND
	Trichloroethene	ND	2.49	ND	ND	3.32	1.23	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND

Table 7a
2350 Fifth Avenue
New York, NY

Results of Historical Indoor Air Samples
Tetrachloroethene and Breakdown Products

Location	Compound μg/m^3	Sample Date						
		4/22/2002	1/13/2003	5/5/2003	8/23/2004	4/21/2005	5/20/2005	8/21/2005
Room 112 (P35)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	2.7
	Tetrachloroethene	12.2	14.92	9.49	14.24	39	15	50
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	1.7	ND	9.3
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Room 131 (P33)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	1.9	6.64	3.39	ND	44	45	ND
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Room 129 (P16)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	1.83	3.86	2.98	ND	69	74.58	ND
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	1.4	1.9	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Corridor outside Room 118	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	2.44	ND	ND	2.98	54	61.02	ND
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	1.4	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Cafeteria (Room 122-P10)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	2.71	ND	2.17	ND	31	37.29	ND
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	2.4	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND

Table 7b
2350 Fifth Avenue
New York, NY
Indoor Air Sampling Analytical Data
Tetrachloroethene and Breakdown Products

Location	Compound µg/m³	Sample Date									
		2/18/2006	8/1/2006	12/15/2006	1/26/2007	10/4/2007	3/11/2008	7/3/2008	10/8/2008	1/23/2009	6/2/2009
Room 112 (P35)	1,1-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	NA	3.5	6.6	3.7	0.72	1.1	ND	ND	1.2
	Tetrachloroethene	19	NA	41	83	65	6.9	21	4.8	8.8	5.3
	trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	NA	4.7	**8.7**	4.7	ND	1.3	ND	ND	1.3
	Vinyl Chloride	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Room 131 (P33)	1,1-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	NA	ND	ND	3.1	ND	ND	ND	ND	ND
	Tetrachloroethene	17	NA	7.1	2	84	7.7	12	3.5	10	2.6
	trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	NA	ND	ND	**5.1**	ND	ND	ND	ND	ND
	Vinyl Chloride	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Room 129 (P16)	1,1-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	NA	ND	ND	1.9	ND	0.82	ND	ND	0.24
	Tetrachloroethene	19	NA	9	2.3	52	ND	19	2.5	11	0.54
	trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	NA	ND	ND	2.6	ND	0.9	ND	ND	0.18
	Vinyl Chloride	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Corridor outside Room 118	1,1-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	23	0.74
	Tetrachloroethene	15	NA	4.3	38	14	3.3	9.3	1.5	9.3	2.3
	trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	1.5	ND
	Trichloroethene	ND	NA	ND	1.8	ND	ND	ND	ND	ND	0.8
	Vinyl Chloride	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Cafeteria (Room 122-P10)	1,1-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Tetrachloroethene	1.5	NA	3.3	26	3.7	2.9	0.91	1.3	6.3	3
	trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Vinyl Chloride	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND

Table 7b
2350 Fifth Avenue
New York, NY

Indoor Air Sampling Analytical Data

Tetrachloroethene and Breakdown Products

Location	Compound µg/m^3	Sample Date									
		9/29/2009	11/24/2009	4/9/2010	7/30/2010	10/26/2010	12/7/2010	1/31/2011	4/29/2011	7/26/2011	10/27/2011
Room 112 (P35)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	1.2	ND	1.1	14	ND	3.1	ND	0.31
	Tetrachloroethene	1.8	1.5	7.8	8.6	**140**	11	1.2	8.4	1.3	6.5
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	1.6	ND	ND	ND	ND	0.42
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Room 131 (P33)	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	2.5	ND	0.75	NA	ND	4.9	ND	ND
	Tetrachloroethene	ND	ND	8.1	ND	ND	NA	1.2	8.7	0.44	8.9
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	**58**	NA	ND	0.98	ND	0.27
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Room 129 (P16)	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	3.6	ND	1.2	NA	ND	6.3	ND	ND
	Tetrachloroethene	ND	ND	12	0.94	26	NA	1.2	9.3	0.49	3.2
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	NA	ND	1.3	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Corridor outside Room 118	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	1.1	ND	ND	NA	1.4	0.83	ND	ND
	Tetrachloroethene	ND	ND	4.4	2.4	18	NA	1.3	5.9	2.5	1.3
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	0.43	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Cafeteria (Room 122-P10)	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	0.78	ND	ND	NA	ND	ND	ND	ND
	Tetrachloroethene	ND	ND	3.5	3.1	1.5	NA	1.2	7.8	1.4	1
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	0.84	ND	NA	ND	ND	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND

Table 7b
2350 Fifth Avenue
New York, NY
Indoor Air Sampling Analytical Data
Tetrachloroethene and Breakdown Products

Location	Compound μg/m³	Sample Date									
		2/18/2006	8/1/2006	12/15/2006	1/26/2007	10/4/2007	3/11/2008	7/3/2008	10/8/2008	1/23/2009	6/2/2009
Old Boiler Room Basement	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	28	140	63	47	39	8.9	7.2	1.4	1.2	10
	Tetrachloroethene	**330**	**2300**	**720**	**620**	**780**	81	**110**	33	24	85
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	**38**	**250**	**92**	**64**	**70**	**8.1**	**8.6**	1.7	1.6	**11**
	Vinyl Chloride	1.9	ND	5.4	ND	ND	1.3	ND	ND	ND	0.88
Old Boiler Room Basement - Duplicate	1,1-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	(Canister compromised - arrived from lab with no vacuum)
	cis-1,2-Dichloroethene	NA	140	65	47	38	8.4	7.3	ND	1.1	
	Tetrachloroethene	NA	**2400**	**820**	**610**	**720**	80	**120**	39	23	
	trans-1,2-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	
	Trichloroethene	NA	**250**	**92**	**65**	**66**	**8**	**9.1**	1.1	1.5	
	Vinyl Chloride	NA	ND	5.6	ND	ND	1.1	ND	ND	ND	
Locker 1454	1,1-Dichloroethene	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	NA	NA	150	5.7	33	22	20	6	3	5.8
	Tetrachloroethene	NA	NA	**3100**	**220**	**980**	**680**	**800**	**320**	30	83
	trans-1,2-Dichloroethene	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	NA	NA	**110**	**6.1**	**36**	**22**	**24**	**7.3**	1.2	**6.1**
	Vinyl Chloride	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Between Lockers 1130 & 1131	1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	ND	2.7	5.2
	Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	34	28	14
	trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
	Trichloroethene	NA	NA	NA	NA	NA	NA	NA	1	1.8	**5.4**
	Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Corridor outside Room 129/130 (P17)	1,1-Dichloroethene	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	NA	NA	ND	2	4.1	ND	ND	ND	0.75	1.5
	Tetrachloroethene	NA	NA	4.3	40	**110**	9.5	12	2.8	12	7.3
	trans-1,2-Dichloroethene	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	NA	NA	ND	2.4	**9.5**	ND	0.75	ND	0.71	1.6
	Vinyl Chloride	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Sales Office (Kitchen)	1,1-Dichloroethene	NA	NA	NA	ND	NA	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	NA	NA	NA	ND	NA	NA	ND	ND	ND	ND
	Tetrachloroethene	NA	NA	NA	14	NA	NA	1.2	1.3	4.8	ND
	trans-1,2-Dichloroethene	NA	NA	NA	ND	NA	NA	ND	ND	ND	ND
	Trichloroethene	NA	NA	NA	ND	NA	NA	ND	ND	ND	ND
	Vinyl Chloride	NA	NA	NA	ND	NA	NA	ND	ND	ND	ND

Table 7b
2350 Fifth Avenue
New York, NY
Indoor Air Sampling Analytical Data
Tetrachloroethene and Breakdown Products

Location	Compound µg/m³	Sample Date									
		9/29/2009	11/24/2009	4/9/2010	7/30/2010	10/26/2010	12/7/2010	1/31/2011	4/29/2011	7/26/2011	10/27/2011
Old Boiler Room Basement	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	0.83	ND	10	ND	0.92	NA	11	5.9	1.3	1.9
	Tetrachloroethene	37	8.2	60	9.4	47	NA	72	44	40	48
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	2	ND	5	ND	2.3	NA	2.2	2.0	1.8	2.8
	Vinyl Chloride	ND	ND	4	ND	ND	NA	1.3	1.3	ND	ND
Old Boiler Room Basement - Duplicate	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	10	ND	0.87	NA	11	6.0	1.5	1.7
	Tetrachloroethene	38	8.2	59	13	35	NA	74	46	46	46
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	2.1	ND	4.9	ND	2.3	NA	2.2	2.0	2.3	2.7
	Vinyl Chloride	ND	ND	3.9	ND	ND	NA	1.2	1.4	ND	ND
Locker 1454	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	4.1	1.8	4.7	ND	9.8	25	15	14	10	8.9
	Tetrachloroethene	**270**	3.7	20	54	**320**	11	14	17	**310**	**260**
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	**6.5**	ND	ND	ND	**9**	ND	ND	2.5	**15**	**7.6**
	Vinyl Chloride	ND	ND	ND	ND	ND	0.79	ND	ND	ND	ND
Between Lockers 1130 & 1131	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	4.4	ND	4.3	NA	9.8	12	2.8	2.6
	Tetrachloroethene	29	1.3	13	25	44	NA	5.8	10	48	48
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	0.93	ND	ND	0.63	ND	NA	ND	2.1	4.3	2.3
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Corridor outside Room 129/130 (P17)	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	1.5	ND	0.85	13	8.6	4.0	ND	ND
	Tetrachloroethene	ND	ND	5.9	2.5	**170**	9.6	5.6	6.3	2.4	3.3
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sales Office (Kitchen)	1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Tetrachloroethene	ND	0.97	ND	ND	ND	NA	1.5	5.3	0.56	0.88
	trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Trichloroethene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
	Vinyl Chloride	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND

Table 8
2350 Fifth Avenue
New York, NY
VOC Concentrations in Sub-Slab Insulation Material Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte µg/Kg	C-30(0.5'-1.5') 220-10848-1 12/1/2009 1 Low	C-30(0.5'-1.5') DUP 220-10848-4 12/1/2009 1 Low	C-32 (1.5-2.5) 220-10830-1 11/30/2009 1 Low	 1 Medium	C-34 (2-3) 220-10860-1 12/2/2009 1 Medium	C-36 (1.5-2.5) 220-10860-2 12/2/2009 5 Low
1,1,1-Trichloroethane	0.59 U	1.7 U	0.81 U	95 U H	230 U H	13 U H
1,1,2,2-Tetrachloroethane	0.58 U	1.7 U	0.79 U	100 U H	250 U H	13 U H
1,1,2-Trichloroethane	0.41 U	1.2 U	0.57 U	100 U H	260 U H	9.2 U H
1,1-Dichloroethane	0.33 U	0.96 U	0.46 U	110 U H	270 U H	7.5 U H
1,1-Dichloroethene	0.64 U	1.8 U	0.89 U	110 U H	280 U H	14 U H
1,2-Dichloroethane	0.64 U	1.8 U	0.89 U	90 U H	220 U H	14 U H
1,2-Dichloropropane	0.74 U	2.1 U	1.0 U	79 U H	200 U H	17 U H
2-Hexanone	1.3 U	3.8 U	1.8 U	200 U H	490 U H	30 U H
Acetone	43	82	210 B	370 U H *	910 U H	320 J H
Benzene	1.8 J	12 J	0.87 U	100 U H	250 U H	22 J H
Bromodichloromethane	0.33 U	0.96 U	0.46 U	110 U H	260 U H	7.5 U H
Bromoform	0.68 U	1.9 U	0.93 U	120 U H	300 U H	15 U H
Bromomethane	2.3 U *	6.6 U *	3.2 U *	140 U H	350 U H	52 U H
Carbon disulfide	0.45 U	1.3 U	0.63 U	100 U H	250 U H	10 U H *
Carbon tetrachloride	1.1 U	3 U	1.5 U	120 U H	290 U H	24 U H
Chlorobenzene	0.65 U	2 J	0.90 U	95 U H	230 U H	15 U H
Chloroethane	1.1 U	3.1 U	1.5 U	120 U H	300 U H	24 U H
Chloroform	0.38 U	1.1 U	1.8 J	95 U H	230 U H	8.5 U H
Chloromethane	0.87 U	2.5 U	1.2 U	98 U H	240 U H	19 U H
cis-1,2-Dichloroethene	0.41 U	1.2 U	0.57 U	92 U H	230 U H	9.2 U H
cis-1,3-Dichloropropene	0.62 U	1.8 U	0.86 U	93 U H	230 U H	14 U H
Dibromochloromethane	0.39 U	1.1 U	0.54 U	120 U H	290 U H	8.7 U H
Ethylbenzene	0.78 U	2.2 U	1.9 J	79 U H	200 U H	17 U H
Methyl Ethyl Ketone	1.8 U	5.1 U	37 *	170 U H	420 U H	40 U H
methyl isobutyl ketone	0.61 U	1.8 U	0.84 U	130 U H	310 U H	14 U H
Methylene Chloride	2.2 J	43 J	6.2 J B	**560** J H B	310 U H	240 J H B
Styrene	0.46 J	0.48 U	8.4	120 U H	300 U H	3.7 U H
Tetrachloroethene	19	130	50	150 J H	**16,000** H	4,700 H
Toluene	3 J B	14 J B	4.4 J	110 U H	270 U H	37 J H B
trans-1,2-Dichloroethene	0.43 U	1.2 U	0.60 U	81 U H	200 U H	9.7 U H
trans-1,3-Dichloropropene	0.30 U	0.86 U	0.41 U	95 U H	230 U H	6.7 U H
Trichloroethene	0.90 U	2.6 U	1.2 U	99 U H	250 U H	20 U H
Vinyl chloride	0.26 U	0.73 U	0.35 U	100 U H	250 U H	5.7 U H
Xylenes, Total	1.5 J	4.2 J	4.5 J	320 U H	790 U H	13 J H

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 8
2350 Fifth Avenue
New York, NY
VOC Concentrations in Sub-Slab Insulation Material Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte µg/Kg	C-37 (1'-2') 220-10873-1 12/3/2009 2 Low	C-39(1.5'-2.5') 220-10910-1 12/4/2009 2 Low	C-40(1.5'-2.5') 220-10910-2 12/4/2009 5 Low	C-41(1.5'-2.5') 220-10910-3 12/4/2009 5 Low	C-42A(2'-2.5') 220-10950-1 12/8/2009 10 Low	 2 Medium
1,1,1-Trichloroethane	470 H	4.5 U H	15 U H	10 U H	5.6 U	1,800 U H
1,1,2,2-Tetrachloroethane	4.8 U H	4.4 U H	14 U H	10 U H	5.5 U	1,900 U H
1,1,2-Trichloroethane	3.4 U H	3.1 U H	10 U H	7.1 U H	3.9 U	1,900 U H
1,1-Dichloroethane	580 H	2.5 U H	8.3 U H	5.7 U H	3.2 U	2,000 U H
1,1-Dichloroethene	5.3 U H	4.9 U H	16 U H	11 U H	6.1 U	2,100 U H
1,2-Dichloroethane	5.3 U H	4.9 U H	16 U H	11 U H	6.1 U	1,700 U H
1,2-Dichloropropane	6.1 U H	5.7 U H	19 U H	13 U H	7 U	1,500 U H
2-Hexanone	11 U H	10 U H	33 U H	23 U H	13 U	3,700 U H
Acetone	140 J H	220 H	62 U H	43 U H	640	6,800 U H *
Benzene	5.2 U H	4.8 U H	16 U H	11 U H	250	1,900 U H
Bromodichloromethane	2.7 U H	2.5 U H	8.3 U H	5.7 U H	3.2 U	2,000 U H
Bromoform	5.6 U H	5.2 U H	17 U H	12 U H	6.4 U	2,300 U H
Bromomethane	19 U H	18 U H	57 U H	40 U H	22 U	2,600 U H
Carbon disulfide	3.7 U H *	3.5 U H	11 U H	7.8 U H	4.3 U	1,900 U H
Carbon tetrachloride	8.7 U H	8 U H	26 U H	18 U H	10 U	2,200 U H
Chlorobenzene	5.4 U H	5 U H	16 U H	11 U H	6.2 U	1,800 U H
Chloroethane	9 U H	8.3 U H	27 U H	19 U H	10 U	2,300 U H *
Chloroform	3.1 U H	3.9 J H	9.4 U H	6.5 U H	3.6 U	1,800 U H
Chloromethane	7.1 U H	6.6 U H	22 U H	15 U H	8.2 U	1,800 U H
cis-1,2-Dichloroethene	3.4 U H	3.1 U H	10 U H	7.1 U H	19 J	1,700 U H
cis-1,3-Dichloropropene	5.1 U H	4.7 U H	15 U H	11 U H	5.9 U	1,700 U H
Dibromochloromethane	3.2 U H	3.0 U H	9.7 U H	6.7 U H	3.7 U	2,200 U H
Ethylbenzene	6.4 U H	5.9 U H	19 U H	13 U H	350	13,000 J H
Methyl Ethyl Ketone	15 U H	13 U H *	44 U H *	30 U H *	350	3,100 U H
methyl isobutyl ketone	5 U H	4.6 U H	15 U H	11 U H	5.8 U	2,300 U H
Methylene Chloride	54 J H B	48 J H B	210 J H B	200 J H B	280 B	8,300 J H B
Styrene	1.4 U H	1.3 U H	4.1 U H	2.9 U H	8,200 E	230,000 H
Tetrachloroethene	1,000 H	920 H	2,800 H	930 H	17,000 E	**560,000** H
Toluene	6.7 J H B	4.2 J H B	13 J H B	18 J H B	730 B	10,000 J H
trans-1,2-Dichloroethene	3.6 U H	3.3 U H	11 U H	7.5 U H	4.1 U	1,500 U H
trans-1,3-Dichloropropene	2.5 U H	2.3 U H	7.5 U H	5.2 U H	2.8 U	1,800 U H
Trichloroethene	7.4 U H	6.8 U H	22 U H	16 U H	59	1,800 U H
Vinyl chloride	2.1 U H	1.9 U H	6.4 U H	4.4 U H	2.4 U	1,900 U H
Xylenes, Total	4.4 U H	4.1 U H	13 U H	9.3 U H	69	6,000 U H

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed out.

Table 8
2350 Fifth Avenue
New York, NY
VOC Concentrations in Sub-Slab Insulation Material Samples

Client ID Lab Sample ID Date Sampled Dilution Analyte µg/Kg	C-42B(2'-2.5') 220-10950-2 12/8/2009 1 Low	C-43 (1-2) 220-10976-1 12/9/2009 5 Low	 1 Medium	C-44 (2-3) 220-10925-1 12/7/2009 1 Low	SB-40 (1.5-3) 220-11210-25 12/29/2009 2 Low	FB-2 220-10848-2 12/1/2009 1 Low µg/L	TB-2 220-10848-3 12/1/2009 1 Low µg/L
1,1,1-Trichloroethane	3.7 U	13 U H	300 U H	2.4 U	4.6 U	0.69 U	0.69 U
1,1,2,2-Tetrachloroethane	3.6 U	13 U H	320 U H	2.4 U	4.5 U	0.81 U	0.81 U
1,1,2-Trichloroethane	2.6 U	9.0 U H	330 U H	1.7 U	3.2 U	0.65 U	0.65 U
1,1-Dichloroethane	2.1 U	7.3 U H	350 U H	1.4 U	2.6 U	1.0 U	1.0 U
1,1-Dichloroethene	4 U	14 U H	360 U H	2.7 U	5 U	0.83 U	0.83 U
1,2-Dichloroethane	4 U	14 U H	290 U H	2.7 U	5 U	0.72 U	0.72 U
1,2-Dichloropropane	4.7 U	16 U H	250 U H	3.1 U	5.8 U	0.71 U	0.71 U
2-Hexanone	8.3 U	29 U H	630 U H	5.5 U	10 U	1.1 U	1.1 U
Acetone	16 U	210 J H B	1,200 U H *	150	72 J *	1 U	1 U
Benzene	4 U	14 U H	320 U H	3.1 J	4.9 U	0.74 U	0.74 U
Bromodichloromethane	2.1 U	7.3 U H	330 U H	1.4 U	2.6 U	0.48 U	0.48 U
Bromoform	4.2 U	15 U H	390 U H	2.8 U	5.3 U	0.46 U	0.46 U
Bromomethane	14 U	50 U H	450 U H	9.5 U	18 U	2.1 U	2.1 U
Carbon disulfide	2.8 U	9.9 U H	320 U H	1.9 U *	3.6 U	0.90 U	0.90 U
Carbon tetrachloride	6.6 U	23 U H	370 U H	4.3 U	8.2 U	1.1 U	1.1 U
Chlorobenzene	4.1 U	14 U H	300 U H	2.7 U	5.1 U	0.72 U	0.72 U
Chloroethane	6.8 U	24 U H	390 U H	4.5 U	8.5 U	1.1 U	1.1 U
Chloroform	2.4 U	8.2 U H	300 U H	1.6 U	2.9 U	0.67 U	0.67 U
Chloromethane	5.4 U	19 U H	310 U H	3.6 U	6.8 U	1.1 U	1.1 U
cis-1,2-Dichloroethene	2.6 U	45 J H	290 U H	29	3.2 U	0.99 U	0.99 U
cis-1,3-Dichloropropene	3.9 U	14 U H	300 U H	2.6 U	4.9 U	0.28 U	0.28 U
Dibromochloromethane	2.4 U	8.5 U H	380 U H	1.6 U	3 U	0.55 U	0.55 U
Ethylbenzene	4.9 U	17 U H	250 U H	3.2 U	6.1 U	0.87 U	0.87 U
Methyl Ethyl Ketone	11 U	39 U H	530 U H	7.3 U	NA	1.1 U	1.1 U
methyl isobutyl ketone	3.8 U	13 U H	400 U H	2.5 U	NA	0.38 U	0.38 U
Methylene Chloride	26 J B	71 J H	390 U H	32 J B	24 J B	0.78 U	0.78 U
Styrene	6 J	3.6 U H	390 U H	0.69 U	1.3 U	0.64 U	0.64 U
Tetrachloroethene	290	5,800 E H	**24,000** H	84	570	0.81 U	0.81 U
Toluene	0.51 U	9.9 J H B	350 U H	4.9 J B	0.64 U	0.72 U	0.72 U
trans-1,2-Dichloroethene	2.7 U	9.5 U H	260 U H	1.8 U	3.4 U	0.76 U	0.76 U
trans-1,3-Dichloropropene	1.9 U	6.5 U H	300 U H	1.2 U	2.3 U	0.57 U	0.57 U
Trichloroethene	11 J	990 H	2,300 J H	3.7 U	23 J	0.62 U	0.62 U
Vinyl chloride	1.6 U	5.6 U H	320 U H	1.1 U	2 U	0.99 U	0.99 U
Xylenes, Total	3.4 U	12 U H	1000 U H	2.2 U	4.2 U	2.3 U	2.3 U

NOTE: Due to multiple extractions during laboratory analysis, reported results shown in black text are more accurate, less accurate results have been grayed

Table 9
2350 Fifth Avenue
New York, NY
Proposed Backfill Analysis/Reuse Criteria

	NYSDEC Part 375 SCO Restricted Residential Use mg/kg
TCL VOCs	
1,1,1-Trichloroethane	100
1,1,2,2-Tetrachloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	26
1,1-Dichloroethene	100
1,2-Dichloroethane	3.1
1,2-Dichloroethene, Total	NS
1,2-Dichloropropane	NS
2-Hexanone	NS
Acetone	100
Benzene	4.8
Bromodichloromethane	NS
Bromoform	NS
Bromomethane	NS
Carbon disulfide	NS
Carbon tetrachloride	2.4
Chlorobenzene	100
Chloroethane	NS
Chloroform	49
Chloromethane	NS
cis-1,2-Dichloroethene	100
cis-1,3-Dichloropropene	NS
Dibromochloromethane	NS
Ethylbenzene	41
m&p-Xylene	100
Methyl Ethyl Ketone	100
methyl isobutyl ketone	NS
Methylene Chloride	100
o-Xylene	100
Styrene	NS
Tetrachloroethene	19
Toluene	100
trans-1,2-Dichloroethene	100
trans-1,3-Dichloropropene	NS
Trichloroethene	21
Vinyl chloride	0.9
Xylenes, Total	100

Table 9
2350 Fifth Avenue
New York, NY
Proposed Backfill Analysis/Reuse Criteria

	NYSDEC Part 375 SCO Restricted Residential Use mg/kg
TCL SVOCs	
1,2,4-Trichlorobenzene	NS
1,2-Dichlorobenzene	100
1,3-Dichlorobenzene	49
1,4-Dichlorobenzene	13
2,2'-oxybis[1-chloropropane]	NS
2,4,5-Trichlorophenol	NS
2,4,6-Trichlorophenol	NS
2,4-Dichlorophenol	NS
2,4-Dimethylphenol	NS
2,4-Dinitrophenol	NS
2,4-Dinitrotoluene	NS
2,6-Dinitrotoluene	NS
2-Chloronaphthalene	NS
2-Chlorophenol	NS
2-Methylnaphthalene	NS
2-Methylphenol	100
2-Nitroaniline	NS
2-Nitrophenol	NS
3,3'-Dichlorobenzidine	NS
3-Nitroaniline	NS
4,6-Dinitro-2-methylphenol	NS
4-Bromophenyl phenyl ether	NS
4-Chloro-3-methylphenol	NS
4-Chloroaniline	NS
4-Chlorophenyl phenyl ether	NS
4-Nitroaniline	NS
4-Nitrophenol	NS
Acenaphthene	100
Acenaphthylene	100
Anthracene	100
Benzo[a]anthracene	1
Benzo[a]pyrene	1
Benzo[b]fluoranthene	1
Benzo[g,h,i]perylene	100
Benzo[k]fluoranthene	3.9
Benzyl alcohol	NS
Bis(2-chloroethoxy)methane	NS
Bis(2-chloroethyl)ether	NS
Bis(2-ethylhexyl) phthalate	NS
Butyl benzyl phthalate	NS
Carbazole	NS
Chrysene	3.9
Dibenz(a,h)anthracene	0.33
Dibenzofuran	59
Diethyl phthalate	NS

Table 9
2350 Fifth Avenue
New York, NY
Proposed Backfill Analysis/Reuse Criteria

	NYSDEC Part 375 SCO Restricted Residential Use mg/kg
TCL SVOCs (continued)	
Dimethyl phthalate	NS
Di-n-butyl phthalate	NS
Di-n-octyl phthalate	NS
Fluoranthene	100
Fluorene	100
Hexachlorobenzene	1.2
Hexachlorobutadiene	NS
Hexachlorocyclopentadiene	NS
Hexachloroethane	NS
Indeno[1,2,3-cd]pyrene	0.5
Isophorone	NS
Methylphenol, 3 & 4	NS
Naphthalene	100
Nitrobenzene	15
N-Nitrosodi-n-propylamine	NS
N-Nitrosodiphenylamine	NS
Pentachlorophenol	6.7
Phenanthrene	100
Phenol	100
Pyrene	100

Table 9
2350 Fifth Avenue
New York, NY
Proposed Backfill Analysis/Reuse Criteria

	NYSDEC Part 375 SCO Restricted Residential Use mg/kg
TCL Pesticides	
4,4'-DDD	13
4,4'-DDE	8.9
4,4'-DDT	7.9
Aldrin	0.097
alpha-BHC	0.48
alpha-Chlordane	4.2
beta-BHC	0.36
Chlordane (technical)	4.2
delta-BHC	100
Dieldrin	0.2
Endosulfan I	See Totals
Endosulfan II	See Totals
Endosulfan sulfate	See Totals
Endrin	11
Endrin aldehyde	NS
Endrin ketone	NS
gamma-BHC (Lindane)	1.3
gamma-Chlordane	NS
Heptachlor	2.1
Heptachlor epoxide	NS
Methoxychlor	NS
Toxaphene	NS

PCBs	
PCB-1016	1
PCB-1221	1
PCB-1232	1
PCB-1242	1
PCB-1248	1
PCB-1254	1
PCB-1260	1

Table 9
2350 Fifth Avenue
New York, NY

Proposed Backfill Analysis/Reuse Criteria

	NYSDEC Part 375 SCO Restricted Residential Use mg/kg
Metals	
Aluminum	NS
Antimony	NS
Arsenic	16
Barium	400
Beryllium	72
Cadmium	4.3
Calcium	NS
Chromium	180
Cobalt	NS
Copper	270
Iron	NS
Lead	400
Magnesium	NS
Manganese	2,000
Mercury	0.81
Nickel	310
Potassium	NS
Selenium	180
Silver	180
Sodium	NS
Thallium	NS
Vanadium	NS
Zinc	10,000

Table 10
2350 Fifth Avenue
New York, NY
Emergency Contact List

Company	Individual Name	Title	Contact Number
AKRF	Marc Godick	Project Director	914-922-2356 (office)
	Kathleen Brunner	Project Manager	646-388-9525 (office) 917-612-3990 (cell)
	Eric Park	Field Team Leader, SSO	646-388-9532 (office) 917-923-9182 (cell)
2350 Fifth Avenue Corporation	Joseph Karten	Client Representative	212-289-4551
NYSDEC	Bryan Wong	Project Manager	718-482-4905
NYSDOH	Dawn Hettrick	Project Manager	518-402-7880
Driller	To Be Determined		
Excavator	To Be Determined		
Ambulance, Fire Department & Police Department			911
NYSDEC Spill Hotline			800-457-7362

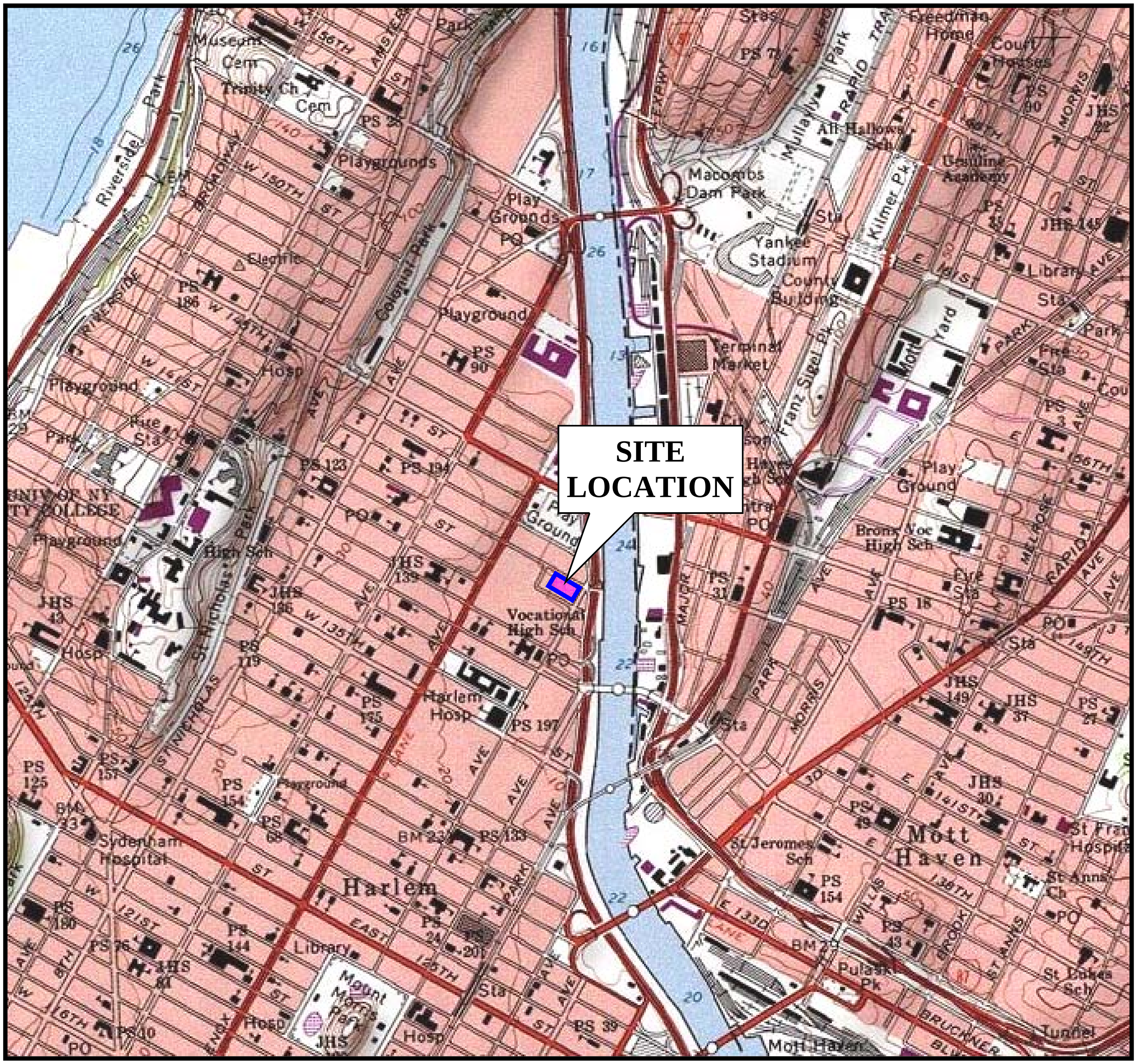
Table 11
2350 Fifth Avenue
New York, NY
Volume, Location, Depth and Concentration of PCE in Sub-Slab Insulation

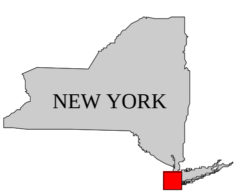
Sample ID	PCE (µg/Kg)	Bulk Density(ρ)		Dimensions (ft)			Area (sq ft)	Total PCE (grams)	% of PCE removed
		g/cm^3	Method	L	W	H			
C-42A(2'-2.5')	**560,000**	**0.275**	**Avg**	**11**	**36**	**0.50**	**396**	**862.92**	**83.61%**
C-43(1-2)	**24,000**	**0.275**	**Avg**	**21**	**17**	**1.04**	**348.5**	**67.81**	**6.57%**
C-6	**100,000**	**0.275**	**Avg**	**8**	**14**	**0.75**	**112**	**65.37**	**6.33%**
C-34(2-3)	**16,000**	**0.275**	**Avg**	**13**	**8**	**0.83**	**104**	**10.79**	**1.05%**
C-42B(2'-2.5')	290	0.275	Avg	12	35	0.79	420	0.75	0.07%
C-9	23	0.275	Avg	22	15	0.92	330	0.05	0.01%
C-30(0.5-1.5')	130	0.275	Avg	22	20	0.83	440	0.37	0.04%
C-31 - No insulation		0	NA	24	35	0.00	840	0.00	0.00%
C-32(1.5-2.5)	150	0.275	Avg	17	35	0.83	595	0.58	0.06%
C-4 - No insulation		0	NA	0	0	0.00	0	0.00	0.00%
C-33 - No insulation		0	NA	0	0	0.00	0	0.00	0.00%
C-39(1.5'-2.5')	920	0.275	Avg	23	35	0.50	805	2.88	0.28%
C-11 - No insulation		0	NA	15	30	0.00	450	0.00	0.00%
C-37(1'-2')	1,000	0.275	Avg	20	30	0.92	600	4.28	0.41%
C-2 - No insulation		0	NA	19	33	0.00	627	0.00	0.00%
C-36(1.5-2.5)	4,700	0.275	Avg	22	30	0.50	660	12.07	1.17%
C-35 - No insulation		0	NA	17	30	0.00	510	0.00	0.00%
C-10 - No insulation		0	NA	0	0	0.00	0	0.00	0.00%
C-41(1.5'-2.5')	930	0.275	Avg	15	22	0.50	330	1.19	0.12%
C-1	61	0.275	Avg	15	27	0.75	405	0.14	0.01%
C-40(1.5'-2.5')	2,800	0.09	Lab	15	35	0.58	525	2.18	0.21%
C-44(2-3)	84	0.46	Lab	23	35	0.79	805	0.70	0.07%

Notes:

The maximum sub-slab insulation removal area is represented by the first four samples: C-42A, C-43, C-6 and C-34.
Thickness of insulation layer (H) is based on observed recovery documented in the boring log.
Samples from 1997 (C-1 to C-29) and 2009 (C-30 to C-44) are given equivalent consideration.
Cores where no insulation material was found are generally given equivalent consideration (in sq. ft.) when surrounded by cores where insulation was present (C-31, C-11 and C-35).
Dimensions are averaged for irregularly shaped areas for a resulting total square footage representative of the polygon.
Contaminant mass and volume presented in the RIR were based on averages, not individually characterized areas as presented he

FIGURES





SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’

N

SOURCE:
7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: CENTRAL PARK, NY 1995

2350 FIFTH AVENUE
NEW YORK, NEW YORK

PROJECT SITE LOCATION

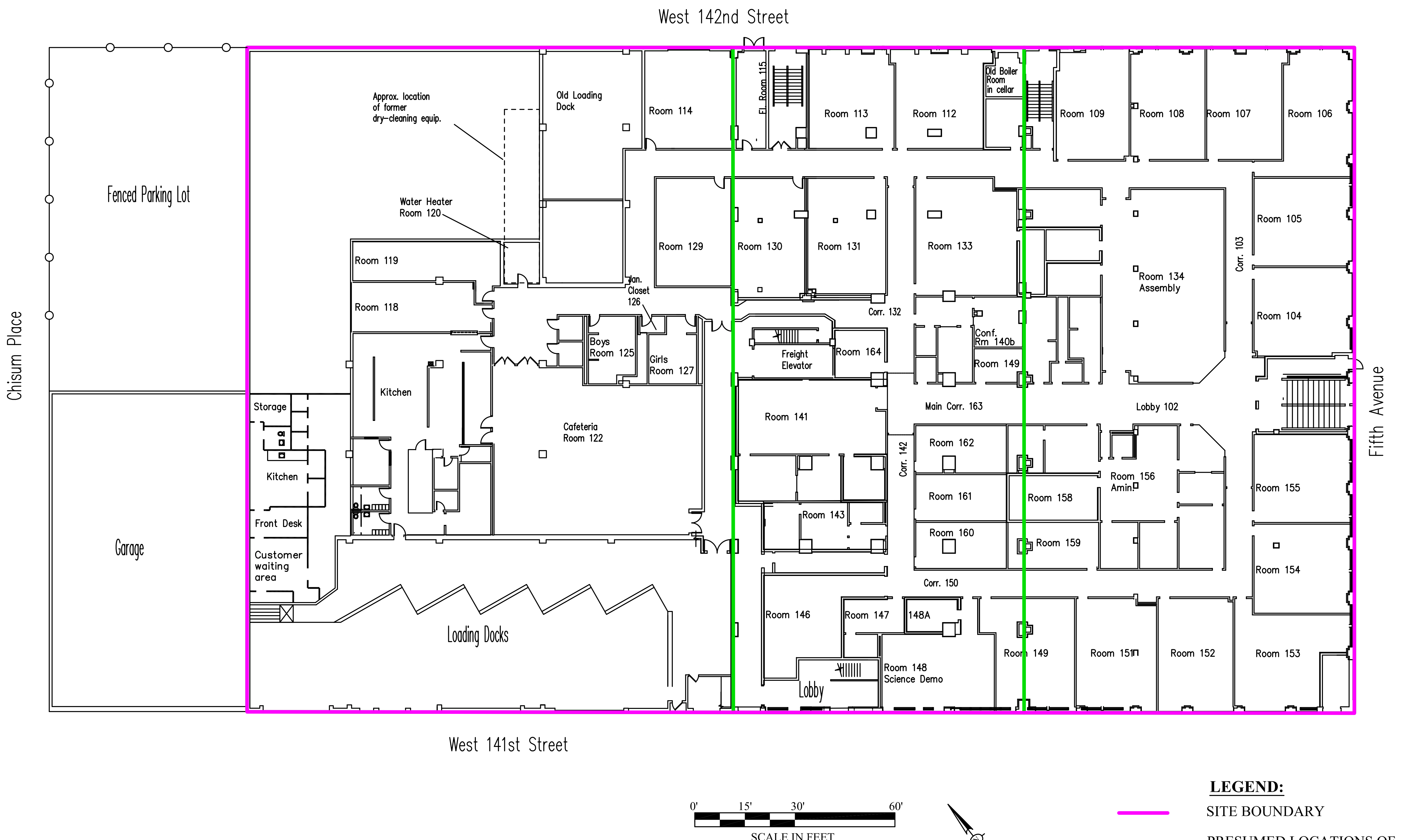
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE **1.20.11**

PROJECT No. **08010**

SCALE **as shown**

FIGURE **1**



LEGEND:

- SITE BOUNDARY
- PRESUMED LOCATIONS OF BUILDING FOUNDATION WALLS
- FENCE

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

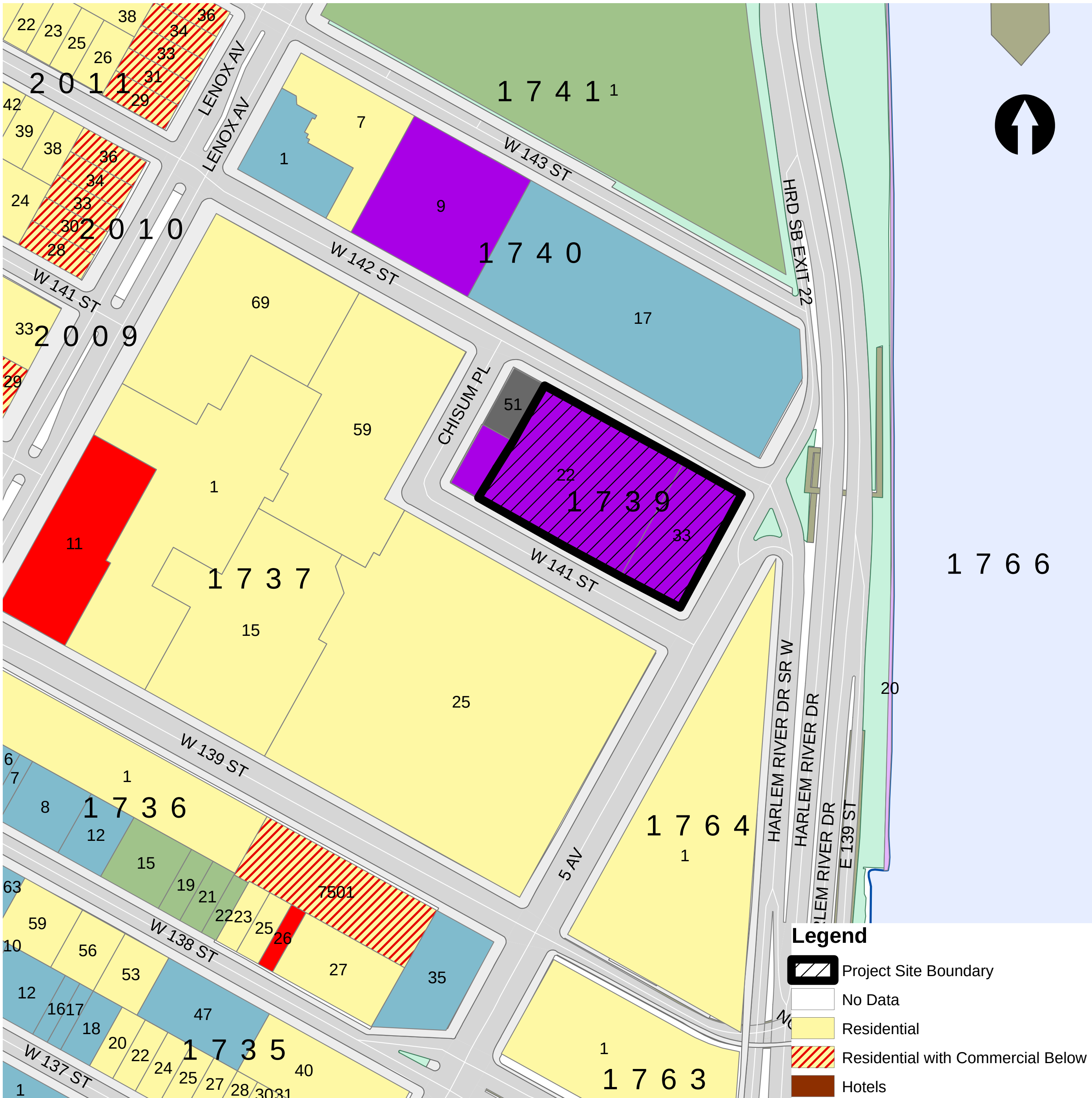
SITE PLAN

DATE
6.27.11

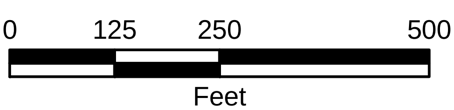
PROJECT NO.
08010

SCALE
1"=30'

FIGURE
2



Source: MapPLUTO TM © 2009 NYC Department of City Planning
(Based on data from Dept. of Finance building classification)



2350 FIFTH AVENUE
NEW YORK, NEW YORK

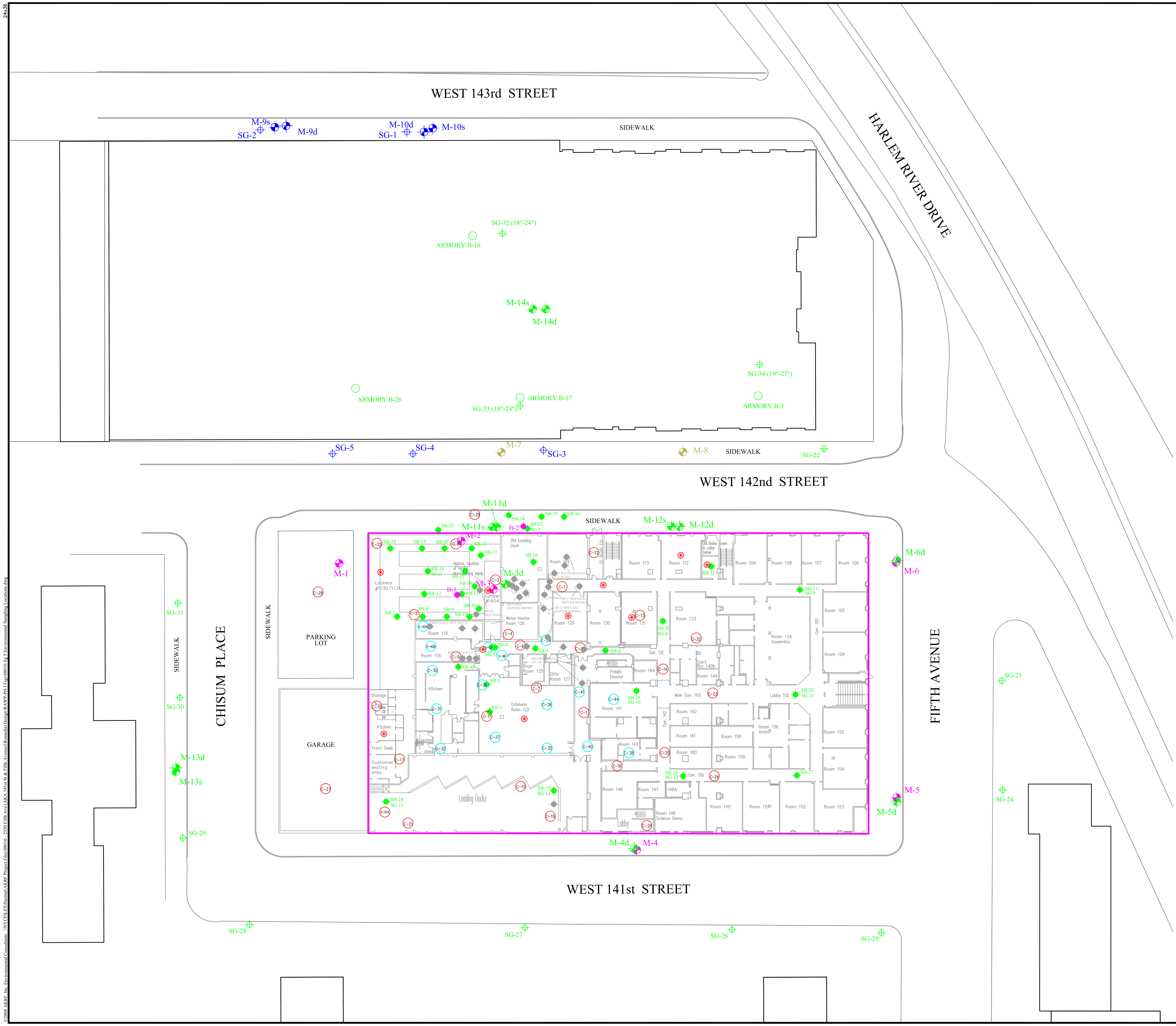
LAND USE MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE 6.18.10

PROJECT No. **08010**

FIGURE **3**



SYMBOL LEGEND:

- SITE BOUNDARY
- M-5 — MONITORING WELL LOCATION
- SG-3 — SOIL VAPOR SAMPLE LOCATION
- SB-27 — SOIL BORING LOCATION
- SB-27 SG-11 — SOIL BORING/SOIL VAPOR SAMPLE LOCATION
- DRILLING REFUSAL LOCATION AND DEPTH
- SHALLOW (SUB-SLAB) CORE DRILLING LOCATION (1997)
- SHALLOW (SUB-SLAB) CORE DRILLING LOCATION (2009)
- ARMORY B-5 — INDOOR AIR SAMPLE (2009)
- INDOOR AIR SAMPLE (2008 - 2011)

COLOR LEGEND:

- INITIAL INVESTIGATION CONDUCTED BY RIVERPOINT - 1997
- PRELIMINARY SITE ASSESSMENT CONDUCTED BY AKRF - JANUARY/FEBRUARY 1998
- REMEDIAL INVESTIGATION PHASE I CONDUCTED BY AKRF - APRIL 2002
- SUPPLEMENTAL OFF-SITE INVESTIGATION CONDUCTED BY AKRF - AUGUST/OCTOBER 2006
- REMEDIAL INVESTIGATION CONDUCTED BY AKRF - OCTOBER 2007 THROUGH DECEMBER 2009

GENERAL NOTES:

1. BASE MAPS PROVIDED BY MONTROSE WITH LOCATIONS SURVEYED IN DEC 2006, JAN 2008 AND DEC 2009 OR MEASURED IN FIELD WITH TAPE MEASURE.

2. INDOOR SAMPLES HAVE BEEN COLLECTED AT THE SITE FROM FIVE LOCATIONS IN 1997, WHICH GRADUALLY INCREASED TO TEN LOCATIONS WHICH HAVE BEEN SAMPLED SINCE 2008 (PLUS A DUPLICATE SAMPLE FROM THE BOILER ROOM/BASEMENT).

0' 15' 30' 60'
SCALE IN FEET

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

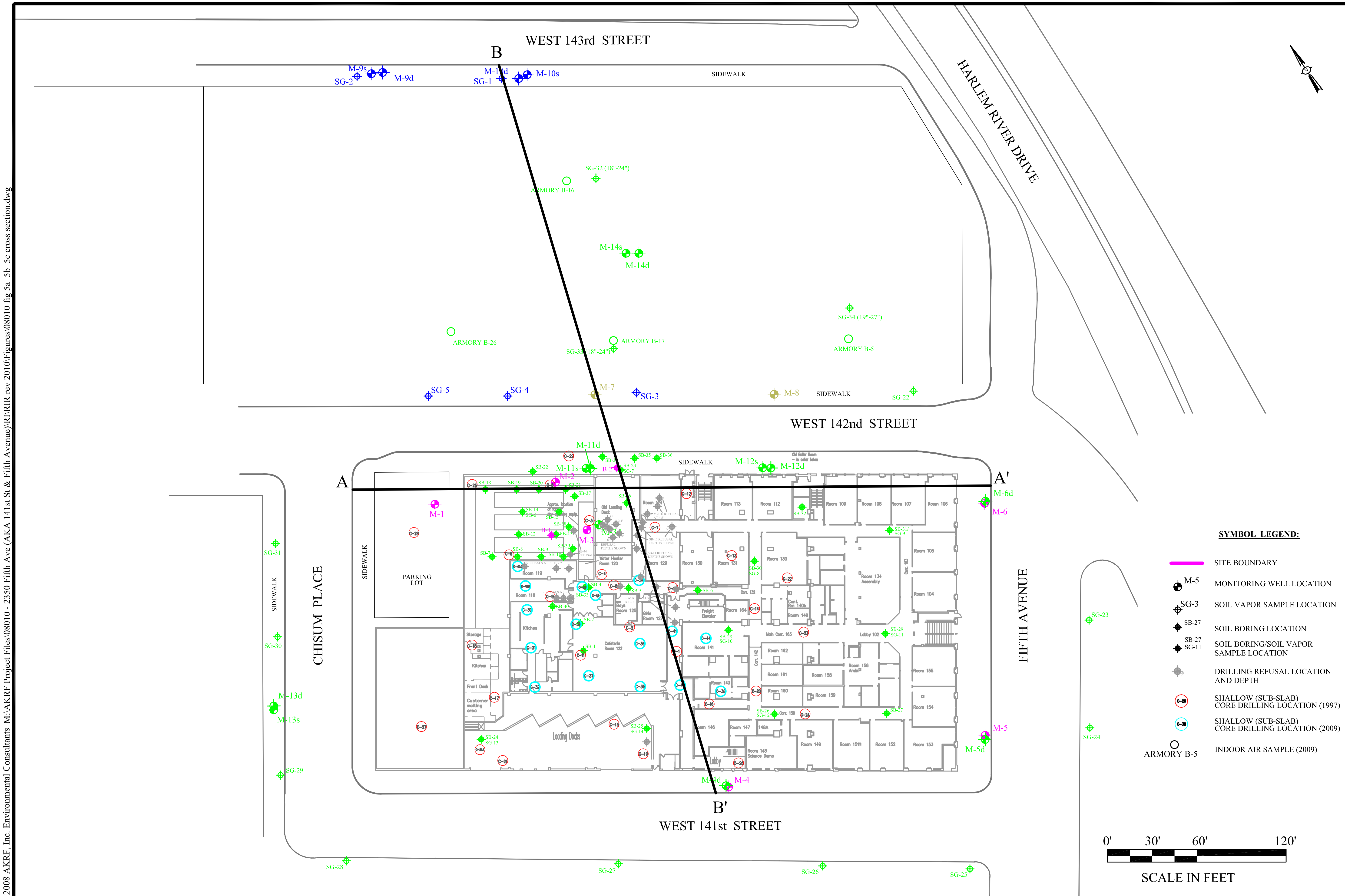
ENVIRONMENTAL SAMPLING LOCATIONS

DATE
6.20.11

SCALE
as shown

PROJECT No.
08010

FIGURE
4



AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

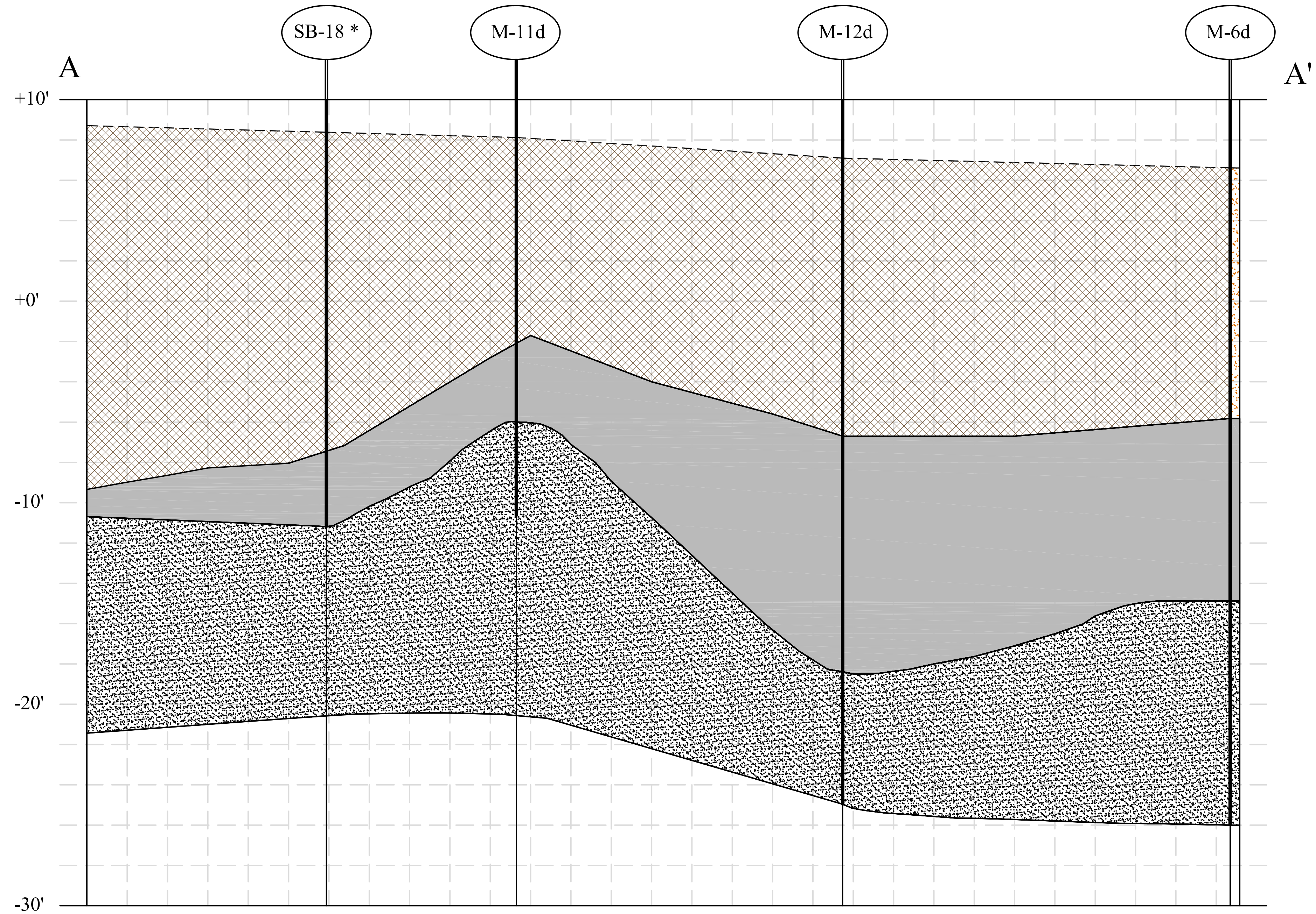
GEOLOGIC CROSS-SECTION PLAN VIEW

DATE 4.16.10

PROJECT NO. 08010

SCALE as shown

FIGURE 5a



SECTION A - A'

VERTICAL SCALE: 0' 1.67' 3.33' 6.66'
SCALE IN FEET (1"=6.66')

HORIZONTAL SCALE: 0' 12.5' 25' 50'
SCALE IN FEET (1"=50')

LEGEND:

- BROWN FINE TO MEDIUM SAND AND SILT (URBAN FILL)
- GREY CLAY
- BROWN SAND AND SILT
- M-6d — MONITORING WELL LOCATION
- SB-18 * — SOIL BORING LOCATION (Completed within the site building; therefore, the elevation along the cross-section line is estimated)

GENERAL NOTES:

1. BASE MAP PROVIDED BY MONTROSE. LOCATIONS SURVEYED IN DEC 2006 & JAN 2008.

2. ELEVATIONS AND ESTABLISHED GRADES SHOWN HEREIN REFER TO THE BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU DATUM, WHICH IS 2.75 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK N.J. AS ESTABLISHED BY THE U.S COAST AND GEODETIC SURVEY IN 1929.

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

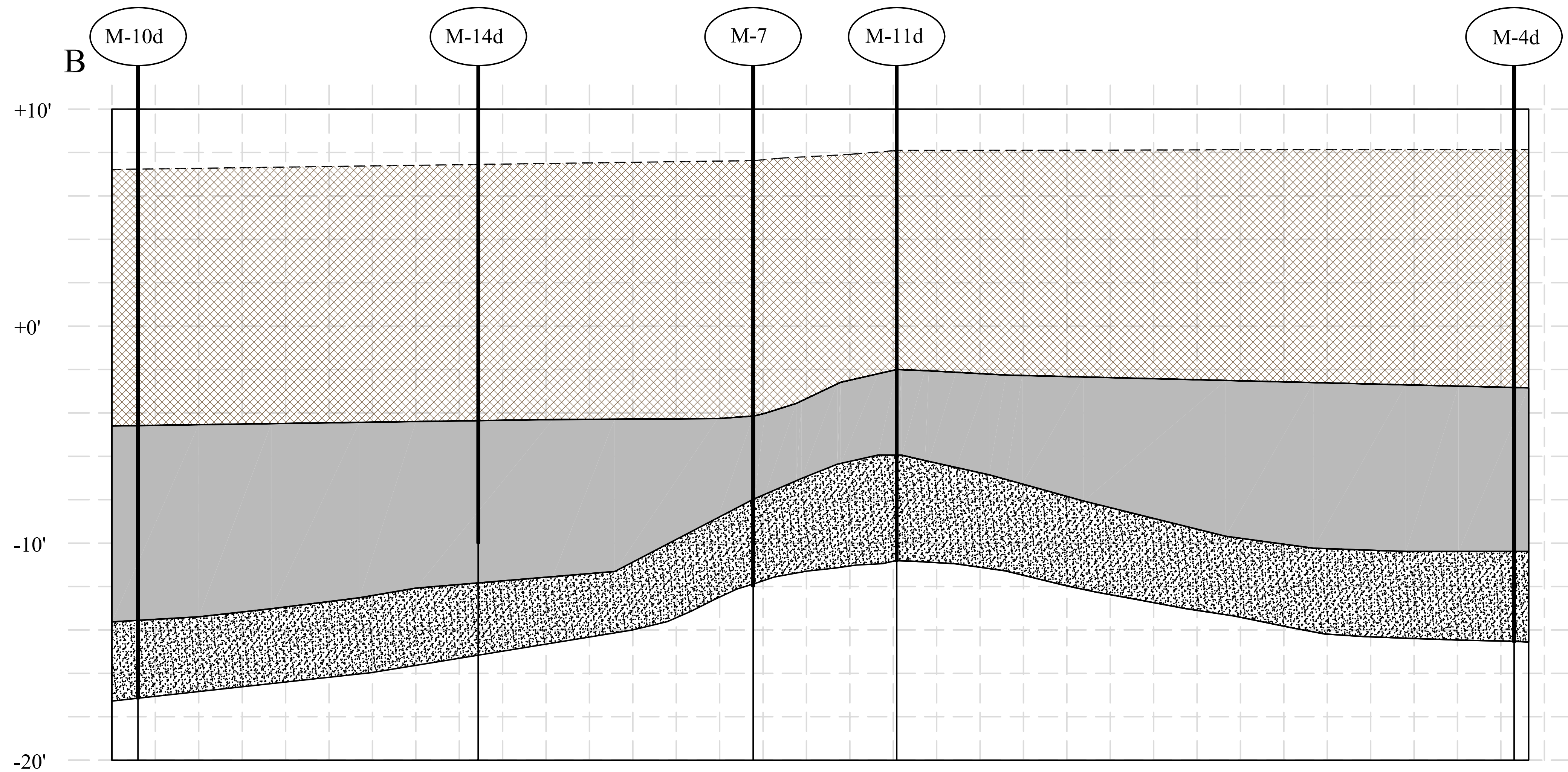
GEOLOGIC CROSS-SECTION OF SUBSURFACE CONDITIONS A-A'

DATE
4.16.10

PROJECT NO.
08010

SCALE
as shown

FIGURE
5b



SECTION B - B'

LEGEND:

BROWN FINE TO MEDIUM SAND AND SILT (URBAN FILL)

GREY CLAY

BROWN SAND AND SILT

M-6d MONITORING WELL LOCATION

GENERAL NOTES:

1. BASE MAP PROVIDED BY MONTROSE. LOCATIONS SURVEYED IN DEC 2006, JAN 2008 & DEC 2009.

2. ELEVATIONS AND ESTABLISHED GRADES SHOWN HEREIN REFER TO THE BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU DATUM, WHICH IS 2.75 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK N.J. AS ESTABLISHED BY THE U.S COAST AND GEODETIC SURVEY IN 1929.

VERTICAL SCALE: 0' 1.67' 3.33' 6.66' SCALE IN FEET (1"=6.66')

HORIZONTAL SCALE: 0' 12.5' 25' 50' SCALE IN FEET (1"=50')

AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

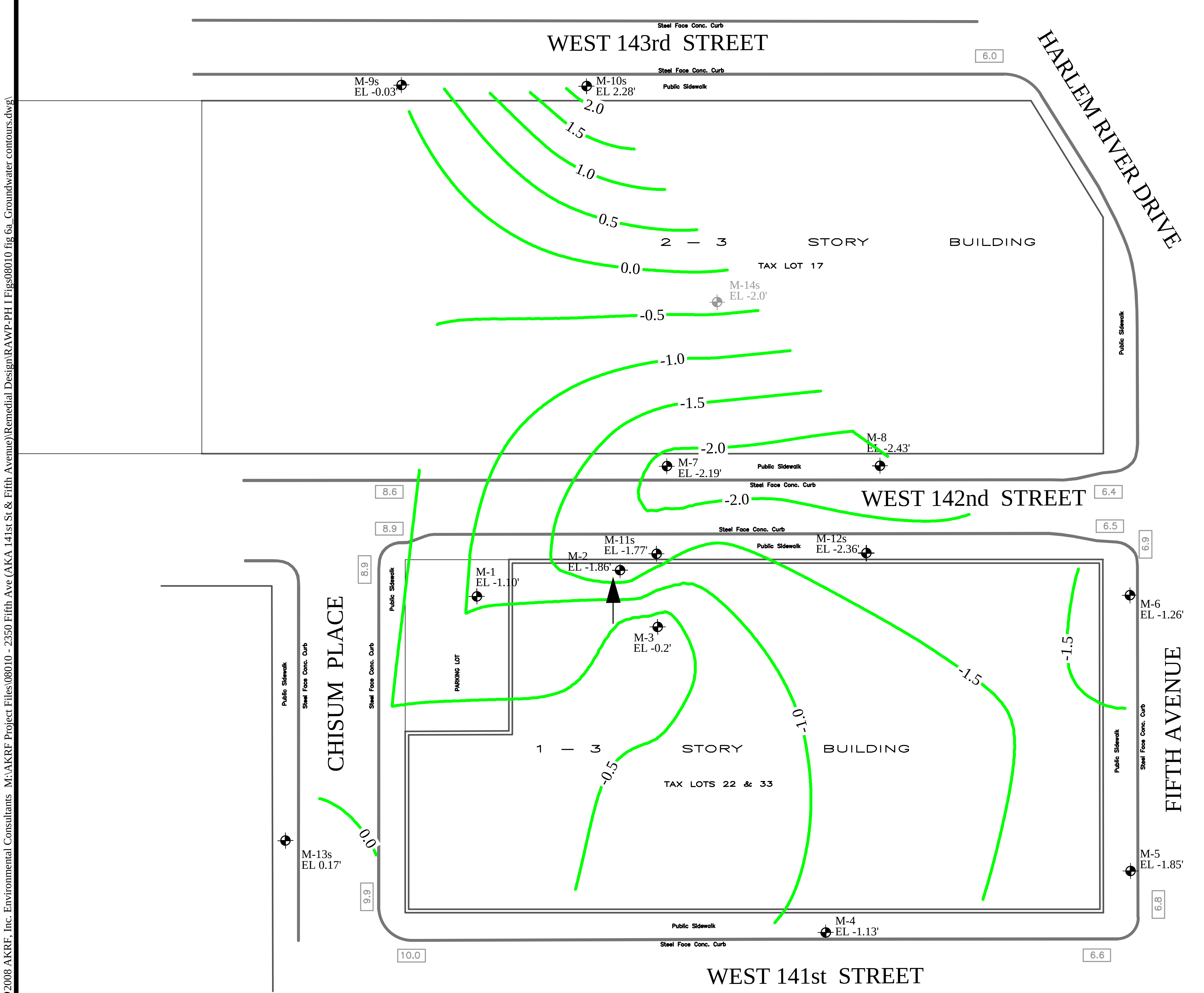
GEOLOGIC CROSS-SECTION OF SUBSURFACE CONDITIONS B-B'

DATE **4.16.10**

PROJECT NO. **08010**

SCALE **as shown**

FIGURE **5c**



GENERAL NOTES:

1. BASE MAP PROVIDED BY MONTROSE ADDITIONAL LOCATIONS SURVEYED IN JANUARY 2008 & NOVEMBER 2009.

2. WATER TABLE DEPTHS MEASURED BY AKRF ON 11/6/09 & 12/7/09

3. GROUNDWATER ELEVATION CONTOURS SHOWN INCLUDE DATA FROM 11/6/09 ONLY.

4. ELEVATIONS AND ESTABLISHED GRADES SHOWN HEREON REFER TO THE BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU DATUM WHICH IS 2.75 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK N.J. AS ESTABLISHED BY THE U.S COAST AND GEODETIC SURVEY IN 1929.

LEGEND:

M-4 EL -1.13' — MONITORING WELL WITH GROUNDWATER ELEVATION LEVEL MEASUREMENT ON 11/06/09

M-14s EL -2.0' — MONITORING WELL WITH GROUNDWATER ELEVATION LEVEL MEASUREMENT ON 12/07/09

6.0 — LEGAL GRADE

GROUNDWATER ELEVATION CONTOURS FOR 11/06/09

ANTICIPATED GROUNDWATER FLOW DIRECTION

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 Fifth Avenue
NEW YORK, NEW YORK

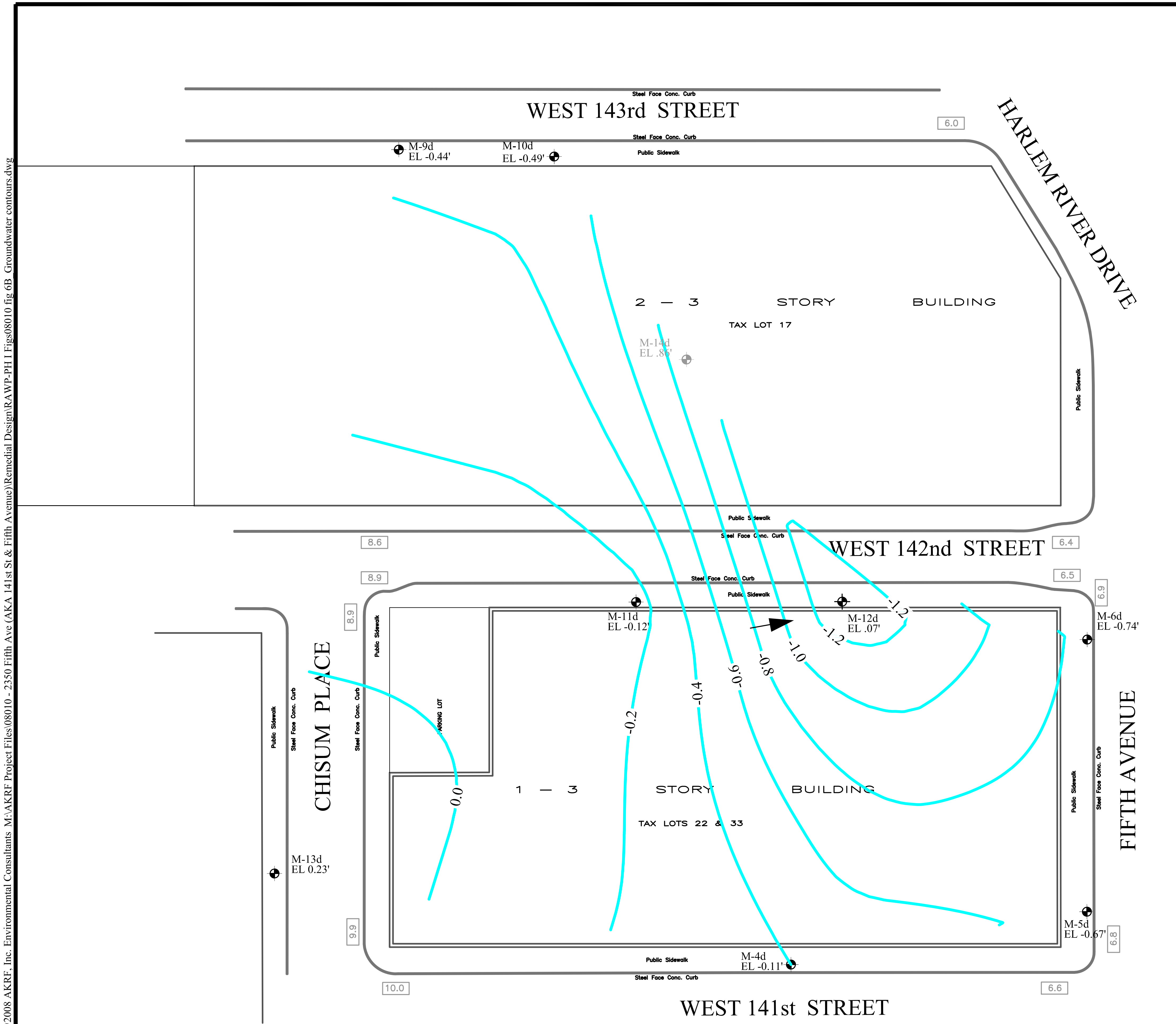
SHALLOW MONITOR WELL GROUNDWATER ELEVATION CONTOURS

DATE 7.05.11

PROJECT NO. 08010

SCALE 1"=60'

FIGURE 6a



GENERAL NOTES:

1. BASE MAP PROVIDED BY MONTROSE ADDITIONAL LOCATIONS SURVEYED IN JANUARY 2008 & NOVEMBER 2009.

2. WATER TABLE DEPTHS MEASURED BY AKRF ON 11/6/09.

3. GROUNDWATER ELEVATION CONTOURS SHOWN INCLUDE DATA FROM 11/6/09 ONLY.

4. ELEVATIONS AND ESTABLISHED GRADES SHOWN HEREON REFER TO THE BOROUGH OF MANHATTAN TOPOGRAPHICAL BUREAU DATUM WHICH IS 2.75 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK N.J. AS ESTABLISHED BY THE U.S COAST AND GEODETIC SURVEY IN 1929.

LEGEND:

M-4 EL -1.13' — MONITORING WELL WITH GROUNDWATER ELEVATION LEVEL MEASUREMENT ON 11/06/09

M-14d EL .86' — MONITORING WELL WITH GROUNDWATER ELEVATION LEVEL MEASUREMENT ON 12/07/09

6.0 — LEGAL GRADE

GROUNDWATER ELEVATION CONTOURS FOR 11/06/09

ANTICIPATED GROUNDWATER FLOW DIRECTION

AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

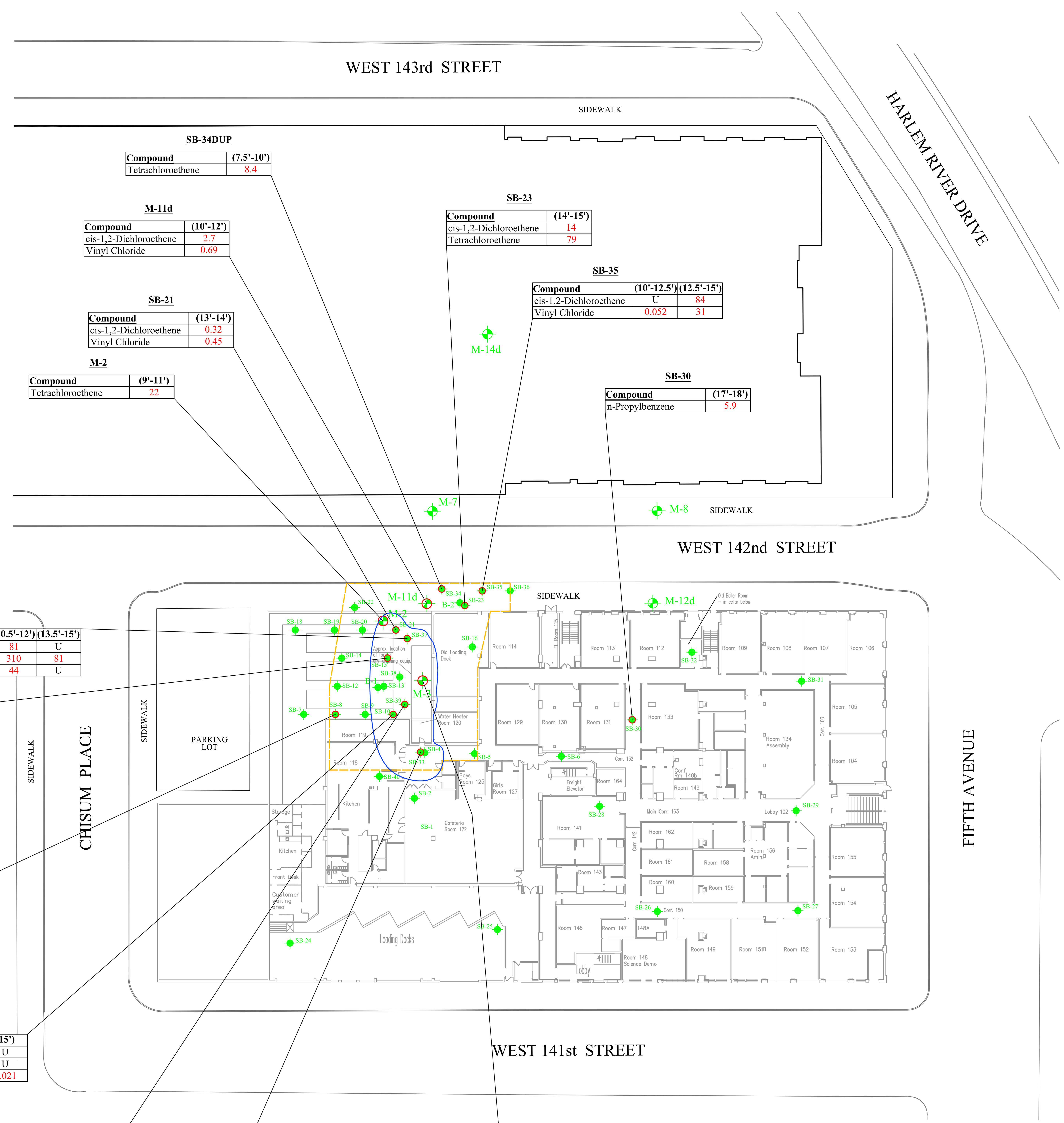
DEEP MONITOR WELL GROUNDWATER ELEVATION CONTOURS

DATE 7.05.11

PROJECT NO. 08010

SCALE 1"=60'

FIGURE 6b



SB-34DUP

Compound	(7.5'-10')
Tetrachloroethene	8.4

M-11d

Compound	(10'-12')
cis-1,2-Dichloroethene	2.7
Vinyl Chloride	0.69

SB-21

Compound	(13'-14')
cis-1,2-Dichloroethene	0.32
Vinyl Chloride	0.45

M-2

Compound	(9'-11')
Tetrachloroethene	22

SB-23

Compound	(14'-15')
cis-1,2-Dichloroethene	14
Tetrachloroethene	79

SB-35

Compound	(10'-12.5')	(12.5'-15')
cis-1,2-Dichloroethene	U	84
Vinyl Chloride	0.052	31

SB-30

Compound	(17'-18')
n-Propylbenzene	5.9

SB-37

Compound	(4.5'-6')	(10.5'-12')	(13.5'-15')
cis-1,2-Dichloroethene	U	81	U
Tetrachloroethene	89	310	81
Trichloroethene	U	44	U

SB-15

Compound	(18')
cis-1,2-Dichloroethene	0.35
Vinyl Chloride	0.15

SB-8

Compound	(15'-16')
2-Butanone	0.13

SB-10

Compound	(8')	(15')
cis-1,2-Dichloroethene	0.3	U
Tetrachloroethene	27	U
Vinyl Chloride	U	0.021

SB-39

Compound	(10.5'-12')	(13.5'-15')
2-Butanone	U	0.12
Vinyl Chloride	0.021	U

SB-33

Compound	(6'-8')
Tetrachloroethene	920

M-3

Compound	(0.5'-2')	(3'-5')	(6'-8')	(8'-10')	(10'-12')
Tetrachloroethene	20	6.3	10	84	11
Vinyl Chloride	U	U	U	U	0.51

SYMBOL LEGEND:

M-8 MONITORING WELL LOCATION - COMPOUNDS NOT DETECTED ABOVE SCO

M-3 MONITORING WELL LOCATION - COMPOUNDS DETECTED ABOVE SCO

SB-16 SOIL BORING LOCATION - COMPOUNDS NOT DETECTED ABOVE SCO

SB-35 SOIL BORING LOCATION - COMPOUNDS DETECTED ABOVE SCO

10 COMPOUND DETECTED EXCEEDS SCO FOR UNRESTRICTED USE

U COMPOUND NOT DETECTED ABOVE LABORATORY REPORTING LIMIT

TARGETED CHEMICAL OXIDATION AND SOIL TREATMENT AREA

TARGETED SOIL VAPOR EXTRACTION TREATMENT AREA

GENERAL NOTES:

1. BASE MAPS PROVIDED BY MONTROSE WITH LOCATIONS SURVEYED IN DEC 2006, JAN 2008 AND DEC 2009 OR MEASURED IN FIELD WITH TAPE MEASURE.

2. SOIL SAMPLES COLLECTED AS PART OF REMEDIAL INVESTIGATION ACTIVITIES PERFORMED IN JANUARY/FEBRUARY 1998, APRIL 2002, AUGUST/OCTOBER 2006, AND OCTOBER 2007 THROUGH DECEMBER 2009.

3. DATA ONLY SHOWN FOR SAMPLES AND DEPTHS WITH COMPOUNDS IN EXCEEDANCE OF NYSDEC PART 375 SOIL CLEANUP OBJECTIVES FOR UNRESTRICTED USE.

4. CONCENTRATIONS SHOWN IN MILLIGRAMS PER KILOGRAM (mg/Kg).

5. EXCEEDANCES FOR ACETONE AND METHYLENE CHLORIDE ARE NOT SHOWN. DETECTIONS WITHIN METHOD BLANKS INDICATED THAT THESE COMPOUNDS ARE ATTRIBUTED TO SAMPLE PREPARATION IN THE LABORATORY, AND ARE NOT REPRESENTATIVE OF THE SITE SOIL.

0' 15' 30' 60'
SCALE IN FEET

AKRF Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

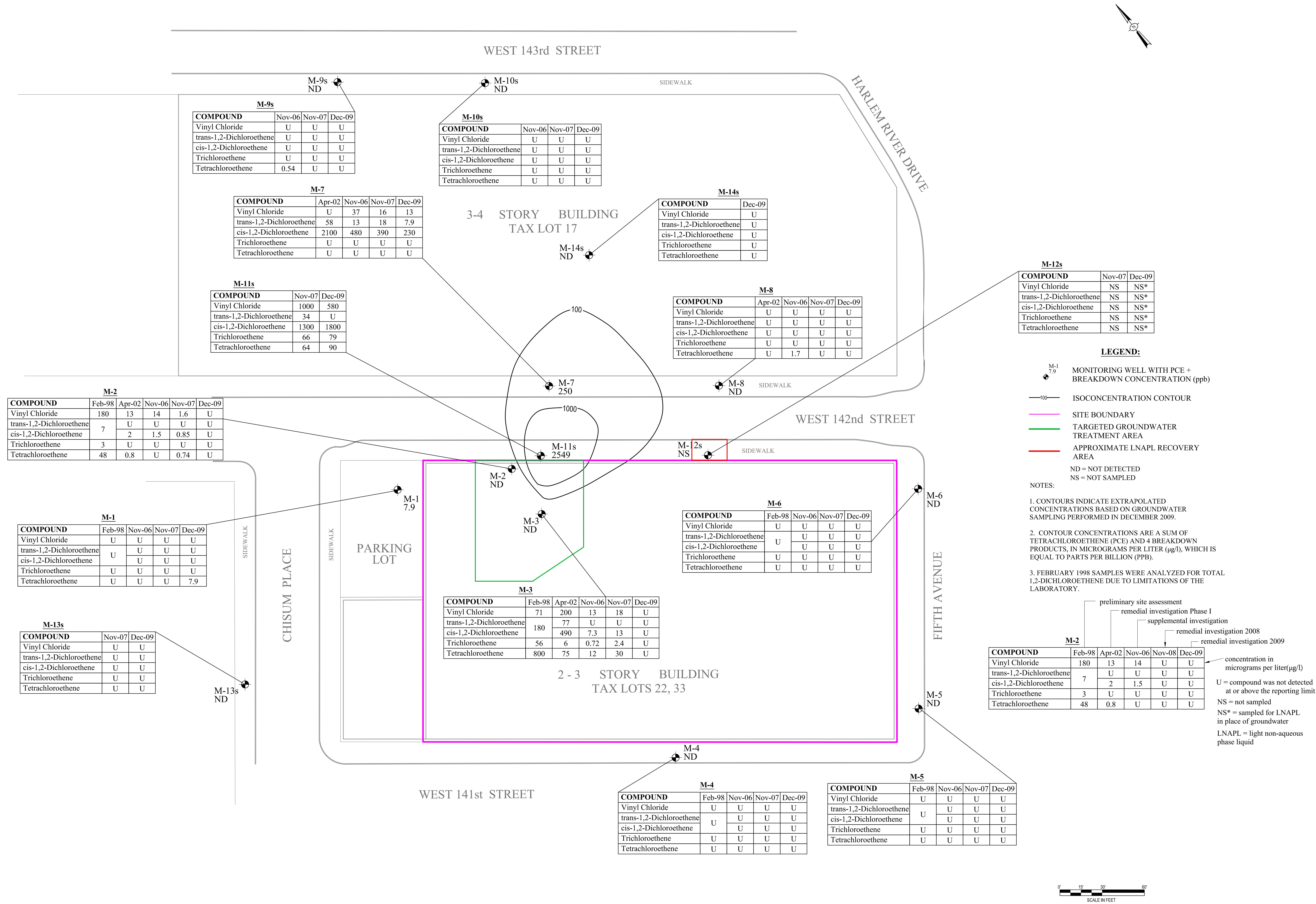
CONCENTRATIONS OF PCE AND BREAKDOWN PRODUCTS IN SOIL SAMPLES

DATE 6.22.11

SCALE as shown

PROJECT No. 08010

FIGURE 7



M-9s

COMPOUND	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U
trans-1,2-Dichloroethene	U	U	U
cis-1,2-Dichloroethene	U	U	U
Trichloroethene	U	U	U
Tetrachloroethene	0.54	U	U

M-10s

COMPOUND	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U
trans-1,2-Dichloroethene	U	U	U
cis-1,2-Dichloroethene	U	U	U
Trichloroethene	U	U	U
Tetrachloroethene	U	U	U

M-7

COMPOUND	Apr-02	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	37	16	13
trans-1,2-Dichloroethene	58	13	18	7.9
cis-1,2-Dichloroethene	2100	480	390	230
Trichloroethene	U	U	U	U
Tetrachloroethene	U	U	U	U

M-14s

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	U

M-11s

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	1000	580
trans-1,2-Dichloroethene	34	U
cis-1,2-Dichloroethene	1300	1800
Trichloroethene	66	79
Tetrachloroethene	64	90

M-8

COMPOUND	Apr-02	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U
cis-1,2-Dichloroethene	U	U	U	U
Trichloroethene	U	U	U	U
Tetrachloroethene	U	1.7	U	U

M-12s

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	NS	NS*
trans-1,2-Dichloroethene	NS	NS*
cis-1,2-Dichloroethene	NS	NS*
Trichloroethene	NS	NS*
Tetrachloroethene	NS	NS*

M-2

COMPOUND	Feb-98	Apr-02	Nov-06	Nov-07	Dec-09
Vinyl Chloride	180	13	14	1.6	U
trans-1,2-Dichloroethene	7	U	U	U	U
cis-1,2-Dichloroethene		2	1.5	0.85	U
Trichloroethene	3	U	U	U	U
Tetrachloroethene	48	0.8	U	0.74	U

M-1

COMPOUND	Feb-98	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U
cis-1,2-Dichloroethene		U	U	U
Trichloroethene	U	U	U	U
Tetrachloroethene	U	U	U	7.9

M-13s

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-3

COMPOUND	Feb-98	Apr-02	Nov-06	Nov-07	Dec-09
Vinyl Chloride	71	200	13	18	U
trans-1,2-Dichloroethene	180	77	U	U	U
cis-1,2-Dichloroethene		490	7.3	13	U
Trichloroethene	56	6	0.72	2.4	U
Tetrachloroethene	800	75	12	30	U

M-6

COMPOUND	Feb-98	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U
cis-1,2-Dichloroethene		U	U	U
Trichloroethene	U	U	U	U
Tetrachloroethene	U	U	U	U

M-4

COMPOUND	Feb-98	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U
cis-1,2-Dichloroethene		U	U	U
Trichloroethene	U	U	U	U
Tetrachloroethene	U	U	U	U

M-5

COMPOUND	Feb-98	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U
cis-1,2-Dichloroethene		U	U	U
Trichloroethene	U	U	U	U
Tetrachloroethene	U	U	U	U

LEGEND:

- M-1 7.9 — MONITORING WELL WITH PCE + BREAKDOWN CONCENTRATION (ppb)
- 100 — ISOCONCENTRATION CONTOUR
- SITE BOUNDARY
- TARGETED GROUNDWATER TREATMENT AREA
- APPROXIMATE LNAPL RECOVERY AREA

ND = NOT DETECTED
NS = NOT SAMPLED

NOTES:

1. CONTOURS INDICATE EXTRAPOLATED CONCENTRATIONS BASED ON GROUNDWATER SAMPLING PERFORMED IN DECEMBER 2009.

2. CONTOUR CONCENTRATIONS ARE A SUM OF TETRACHLOROETHENE (PCE) AND 4 BREAKDOWN PRODUCTS, IN MICROGRAMS PER LITER (µg/l), WHICH IS EQUAL TO PARTS PER BILLION (PPB).

3. FEBRUARY 1998 SAMPLES WERE ANALYZED FOR TOTAL 1,2-DICHLOROETHENE DUE TO LIMITATIONS OF THE LABORATORY.

Feb-98 — preliminary site assessment; Apr-02 — remedial investigation Phase I; Nov-06 — supplemental investigation; Nov-08 — remedial investigation 2008; Dec-09 — remedial investigation 2009

M-2

COMPOUND	Feb-98	Apr-02	Nov-06	Nov-08	Dec-09
Vinyl Chloride	180	13	14	U	U
trans-1,2-Dichloroethene	7	U	U	U	U
cis-1,2-Dichloroethene		2	1.5	U	U
Trichloroethene	3	U	U	U	U
Tetrachloroethene	48	0.8	U	U	U

concentration in micrograms per liter(µg/l)

U = compound was not detected at or above the reporting limit

NS = not sampled

NS* = sampled for LNAPL in place of groundwater

LNAPL = light non-aqueous phase liquid

AKRF Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

GROUNDWATER CONCENTRATION MAP (SHALLOW AQUIFER)

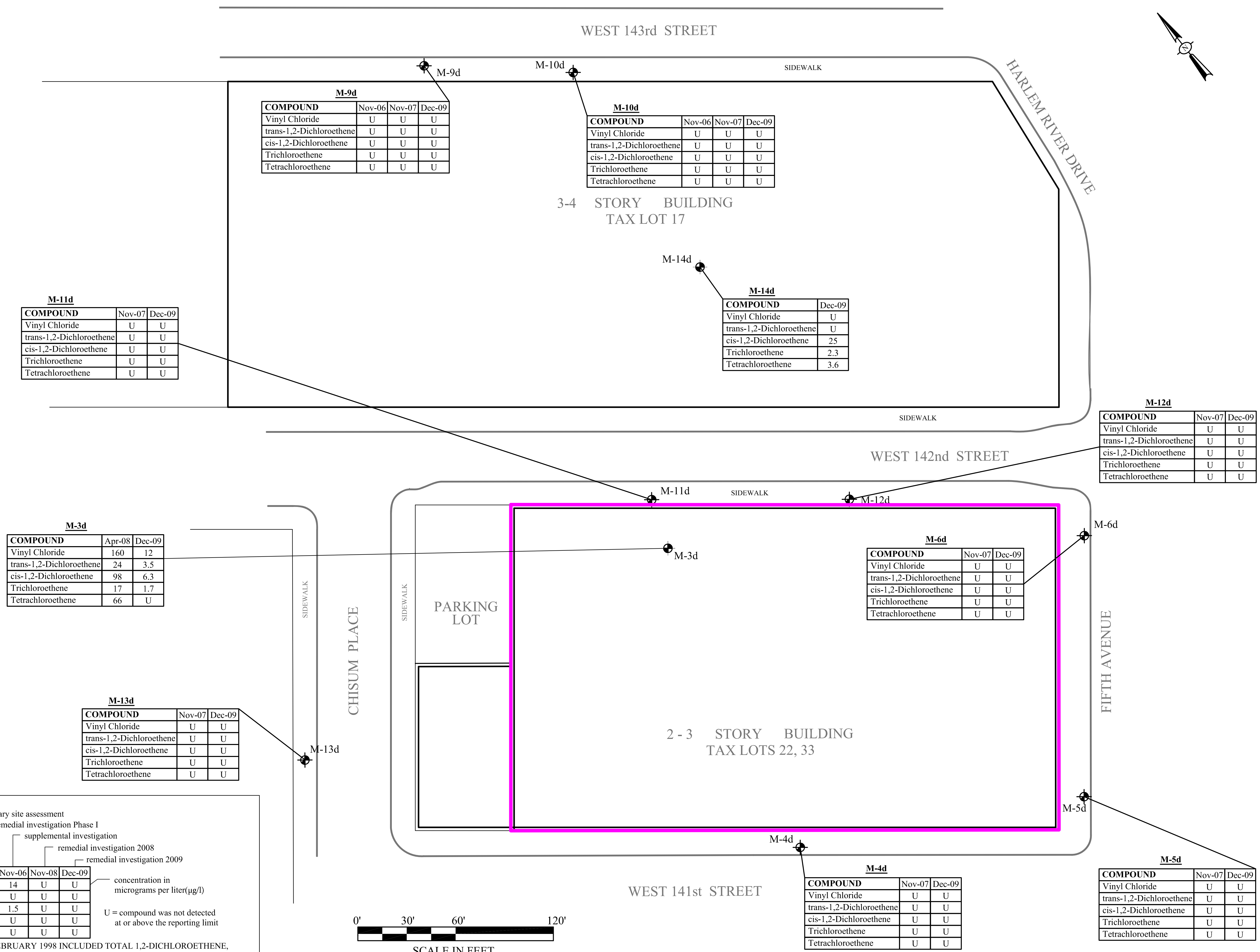
2350 FIFTH AVENUE
NEW YORK, NEW YORK

DATE 4.16.10

SCALE as shown

PROJECT No. 08010

FIGURE 8a



M-9d

COMPOUND	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U
trans-1,2-Dichloroethene	U	U	U
cis-1,2-Dichloroethene	U	U	U
Trichloroethene	U	U	U
Tetrachloroethene	U	U	U

M-10d

COMPOUND	Nov-06	Nov-07	Dec-09
Vinyl Chloride	U	U	U
trans-1,2-Dichloroethene	U	U	U
cis-1,2-Dichloroethene	U	U	U
Trichloroethene	U	U	U
Tetrachloroethene	U	U	U

M-11d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-14d

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	25
Trichloroethene	2.3
Tetrachloroethene	3.6

M-12d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-3d

COMPOUND	Apr-08	Dec-09
Vinyl Chloride	160	12
trans-1,2-Dichloroethene	24	3.5
cis-1,2-Dichloroethene	98	6.3
Trichloroethene	17	1.7
Tetrachloroethene	66	U

M-6d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-13d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-4d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

M-5d

COMPOUND	Nov-07	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	U	U

LEGEND:

M-2 — well location

Feb-98 — preliminary site assessment; Apr-02 — remedial investigation Phase I; Nov-06 — supplemental investigation; Nov-08 — remedial investigation 2008; Dec-09 — remedial investigation 2009

COMPOUND	Feb-98	Apr-02	Nov-06	Nov-08	Dec-09
Vinyl Chloride	180	13	14	U	U
trans-1,2-Dichloroethene	7	U	U	U	U
cis-1,2-Dichloroethene		2	1.5	U	U
Trichloroethene	3	U	U	U	U
Tetrachloroethene	48	0.8	U	U	U

concentration in micrograms per liter(μg/l)

U = compound was not detected at or above the reporting limit

NOTE: ANALYSES UNDER THE PSA IN FEBRUARY 1998 INCLUDED TOTAL 1,2-DICHLOROETHENE, ANALYSIS FOR SEPARATE ISOMERS OF 1,2-DICHLOROETHENE WAS PERFORMED SUBSEQUENTLY.

AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

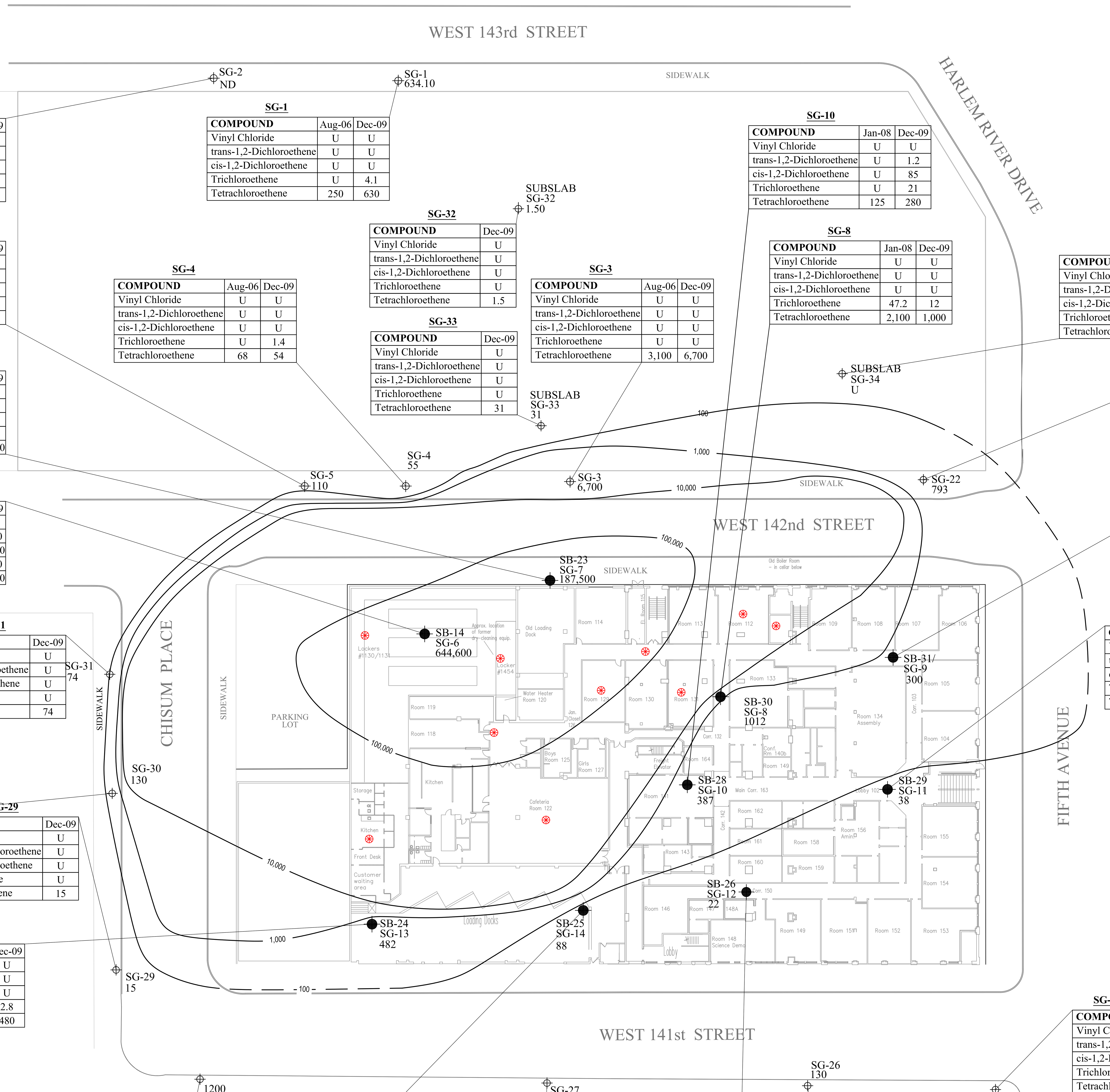
GROUNDWATER CONCENTRATION MAP (DEEP AQUIFER)

DATE **4.16.10**

PROJECT NO. **08010**

SCALE **as shown**

FIGURE **8b**



SG-2

COMPOUND	Aug-06	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	750	88

SG-1

COMPOUND	Aug-06	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	4.1
Tetrachloroethene	250	630

SG-10

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	1.2
cis-1,2-Dichloroethene	U	85
Trichloroethene	U	21
Tetrachloroethene	125	280

SG-5

COMPOUND	Aug-06	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	58	110

SG-32

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	1.5

SG-4

COMPOUND	Aug-06	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	1.4
Tetrachloroethene	68	54

SG-33

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	31

SG-3

COMPOUND	Aug-06	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	3,100	6,700

SG-8

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	47.2	12
Tetrachloroethene	2,100	1,000

SG-34

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	U

SG-7

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	3,400	1,500
Trichloroethene	9,310	6,000
Tetrachloroethene	332,000	180,000

SG-22

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	13
Tetrachloroethene	780

SG-6

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	2,600
trans-1,2-Dichloroethene	U	11,000
cis-1,2-Dichloroethene	U	370,000
Trichloroethene	279	81,000
Tetrachloroethene	3,240	180,000

SG-9

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	0.94
Tetrachloroethene	150	300

SG-31

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	74

SG-11

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	4
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	163	34

SG-30

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	130

SG-23

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	27

SG-29

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	15

SG-24

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	3.9
Tetrachloroethene	7

SG-13

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	2.8
Tetrachloroethene	2,150	480

SG-25

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	140

SG-28

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	1,200

SG-14

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	70.6	88

SG-27

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	16

SG-12

COMPOUND	Jan-08	Dec-09
Vinyl Chloride	U	U
trans-1,2-Dichloroethene	U	U
cis-1,2-Dichloroethene	U	U
Trichloroethene	U	U
Tetrachloroethene	29.6	22

SG-26

COMPOUND	Dec-09
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	130

LEGEND:

SB-24 SG-13 0.66 — SOIL BORING/SOIL VAPOR SAMPLE LOCATION

SG-30 1012.00 — SOIL VAPOR SAMPLE LOCATION

TOTAL PCE AND BREAKDOWN PRODUCTS (µg/m³)

100 — ISOCONCENTRATION CONTOUR (µg/m³) DASHED WHERE INFERRED

INDOOR AIR SAMPLE LOCATION (2008-2011)

ND — NOT DETECTED

NOTES:
1. CONTOURS INDICATE EXTRAPOLATED CONCENTRATIONS BASED ON SOIL VAPOR SAMPLING PERFORMED IN DECEMBER 2009.

2. SOIL VAPOR SAMPLES WERE SUBSLAB AT SG-32, 33, AND 34. ALL OTHER SAMPLES TAKEN FROM PERMANENT SOIL GAS MONITORING POINTS SCREENED FROM 5 TO 6 FEET BELOW GRADE.

3. INDOOR AIR SAMPLES HAVE BEEN COLLECTED AT THE SITE FROM FIVE LOCATIONS SINCE 1997, WHICH GRADUALLY INCREASED TO 10 LOCATIONS WHICH HAVE BEEN SAMPLED SINCE OCTOBER 2008 (PLUS A DUPLICATE SAMPLE COLLECTED FROM THE BOILER ROOM/BASEMENT).

SG-2 — remedial investigation

COMPOUND	Jan-08
Vinyl Chloride	U
trans-1,2-Dichloroethene	U
cis-1,2-Dichloroethene	U
Trichloroethene	U
Tetrachloroethene	U

concentration in micrograms per cubic meter (µg/m³)

U = compound was not detected at or above the reporting limit

AKRF Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

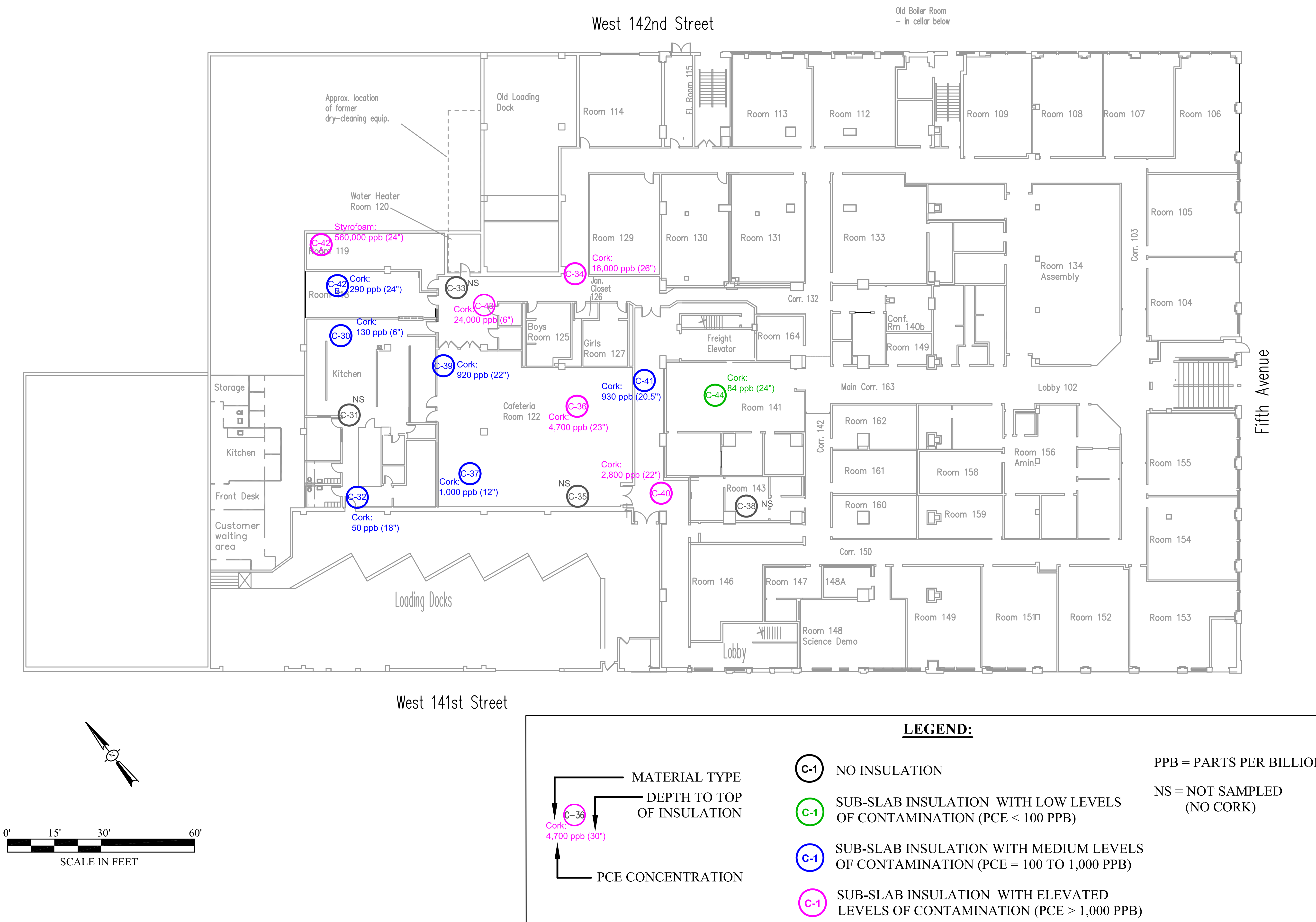
CONCENTRATIONS OF PCE AND BREAKDOWN PRODUCTS IN SOIL VAPOR

DATE 6.22.11

SCALE as shown

PROJECT No. 08010

FIGURE 9

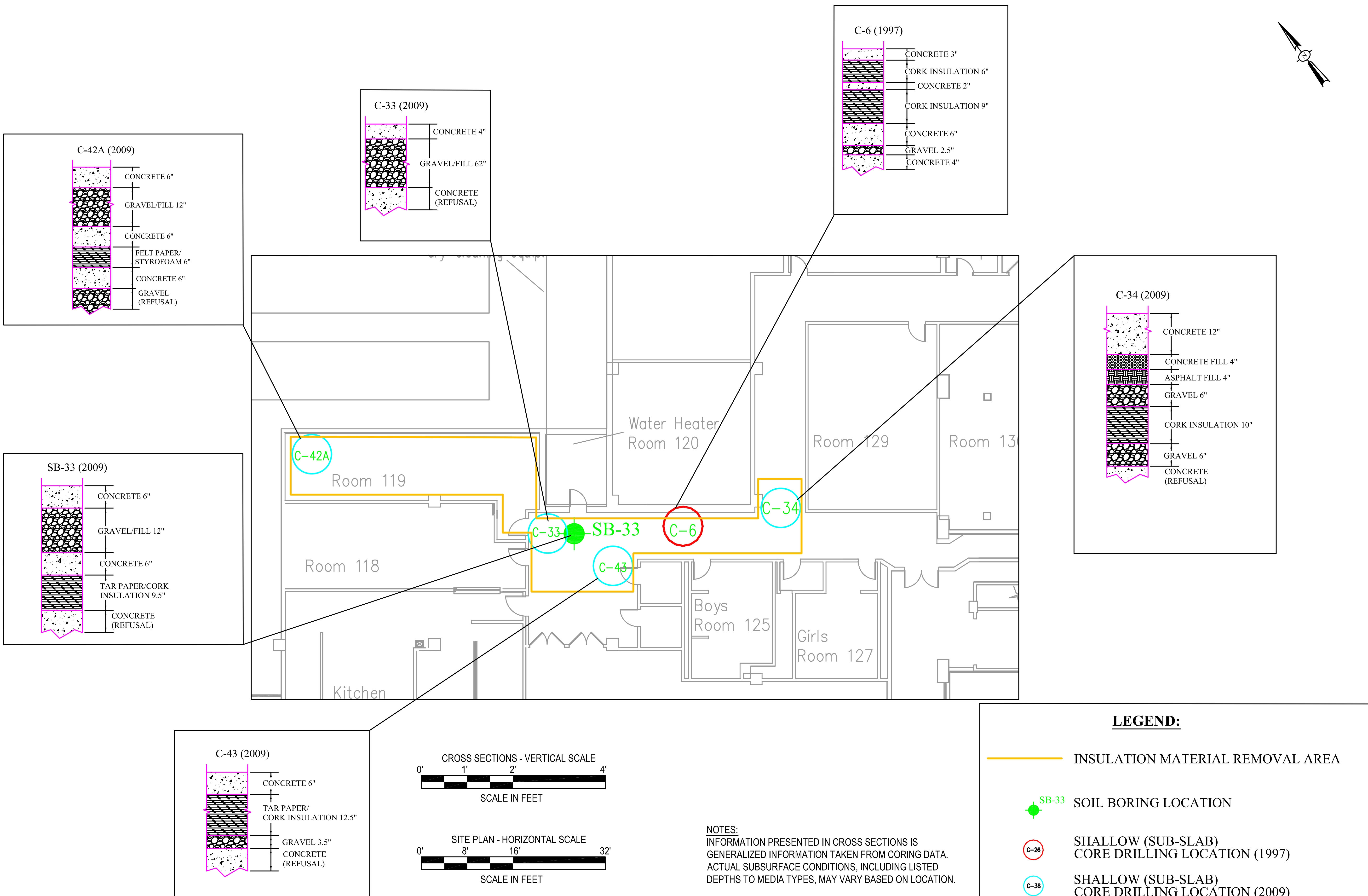


AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE, NEW YORK, NY

2009 CORE SAMPLES - PCE LEVELS IN SUB-SLAB INSULATION

DATE	4.16.10
PROJECT NO.	08010
SCALE	1"=30'
FIGURE	10



NOTES:
INFORMATION PRESENTED IN CROSS SECTIONS IS GENERALIZED INFORMATION TAKEN FROM CORING DATA. ACTUAL SUBSURFACE CONDITIONS, INCLUDING LISTED DEPTHS TO MEDIA TYPES, MAY VARY BASED ON LOCATION.

LEGEND:

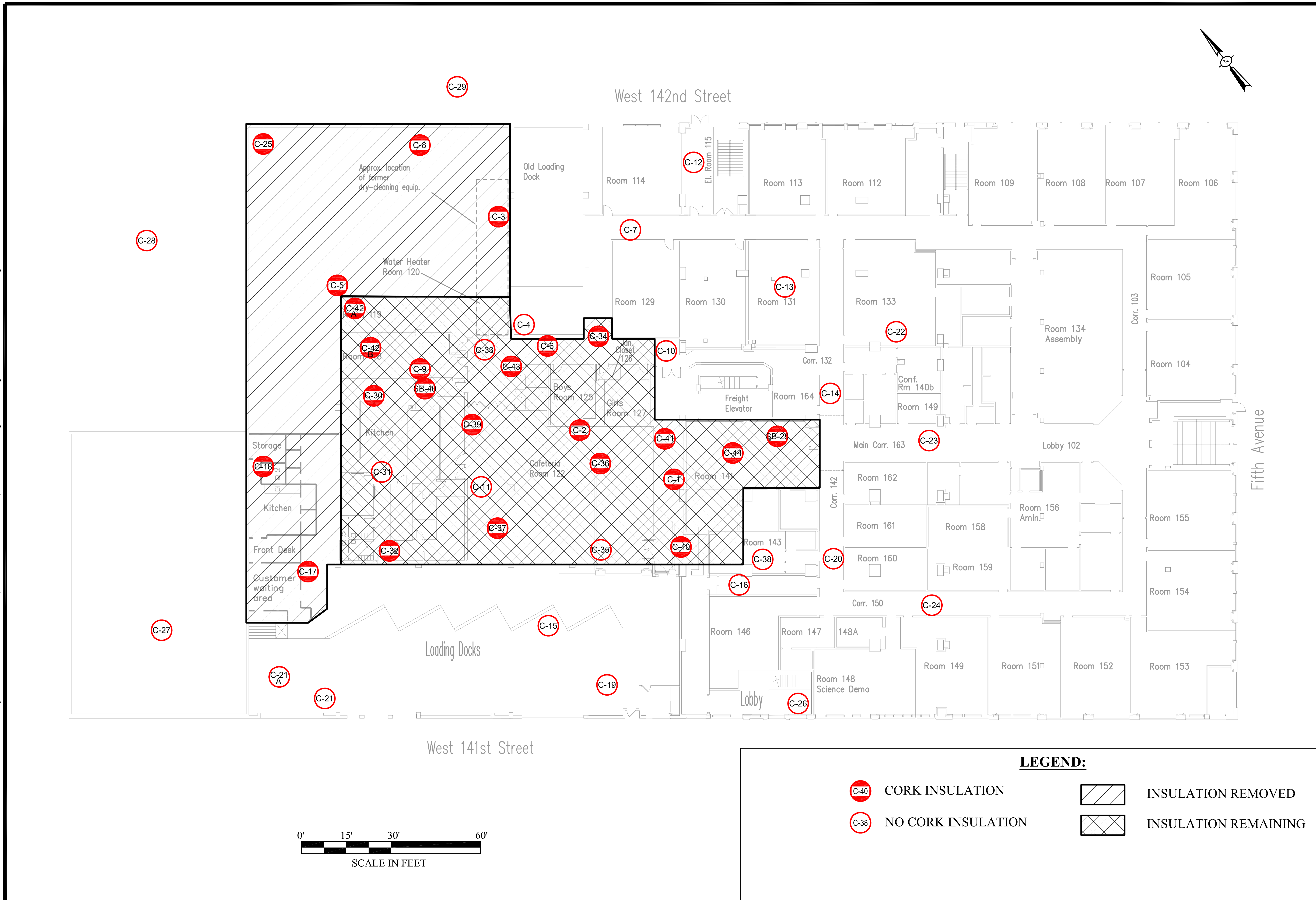
- INSULATION MATERIAL REMOVAL AREA
- SB-33 SOIL BORING LOCATION
- C-26 SHALLOW (SUB-SLAB) CORE DRILLING LOCATION (1997)
- C-38 SHALLOW (SUB-SLAB) CORE DRILLING LOCATION (2009)

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

CROSS SECTION OF INSULATED FLOORS

DATE 6.3.11
PROJECT NO. 08010
SCALE as shown
FIGURE 11



AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE NEW YORK, NEW YORK

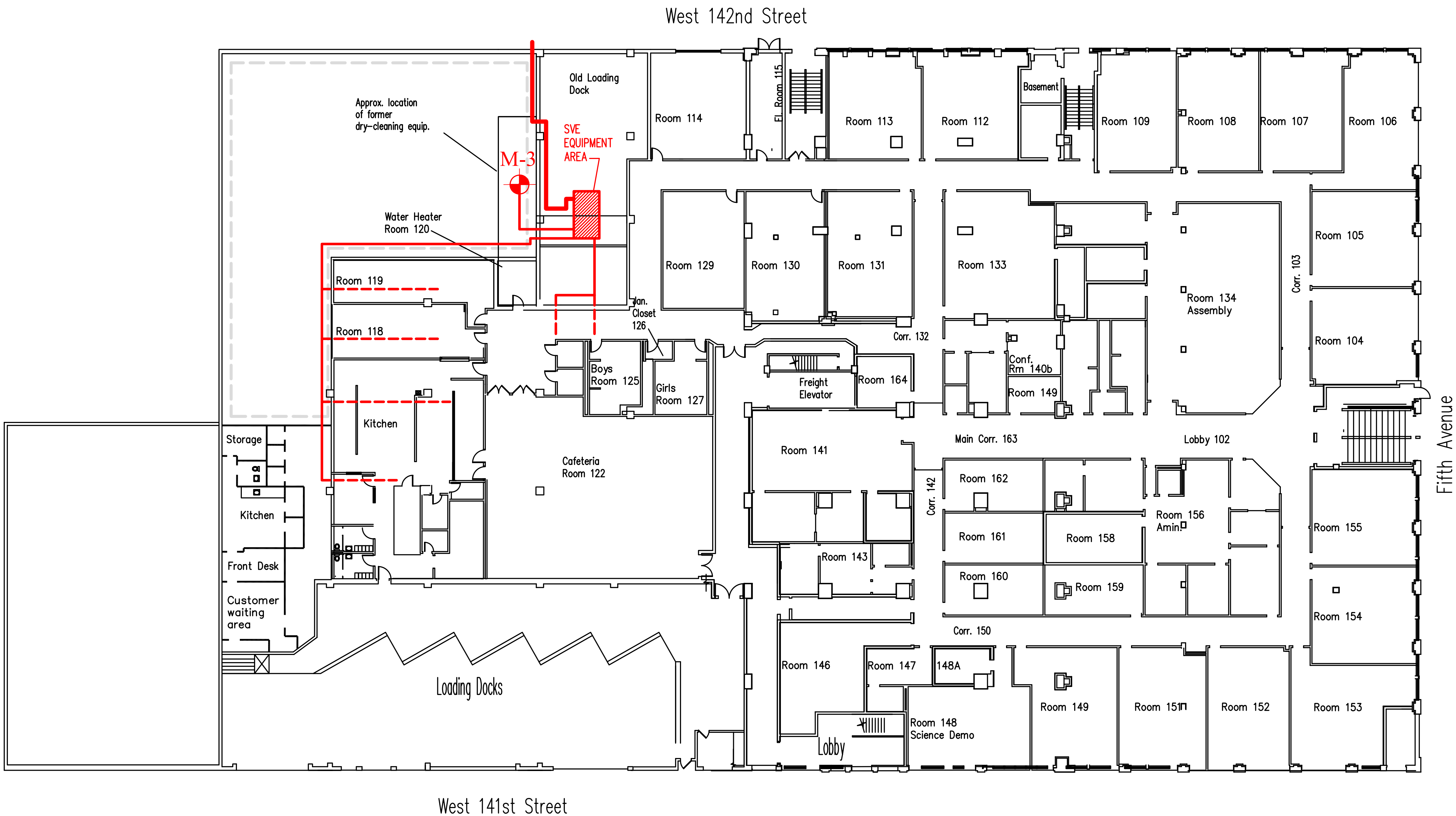
AREAS OF SUB-SLAB INSULATION

DATE 4.16.10

PROJECT NO. 08010

SCALE 1"30'

FIGURE 12



0' 15' 30' 60'

SCALE IN FEET

LEGEND:

2" DIAM. PERFORATED SCH 80 PVC PIPE INSTALLED IN THE FILL LAYER UNDER THE TOP CONCRETE SLAB

3" DIAM. SCH 40 PVC PIPE

4" DIAM. ALUMINUM DUCT - EFFLUENT

M-3 2" DIAM. GROUNDWATER MONITORING WELL CONNECTED TO SVE SYSTEM

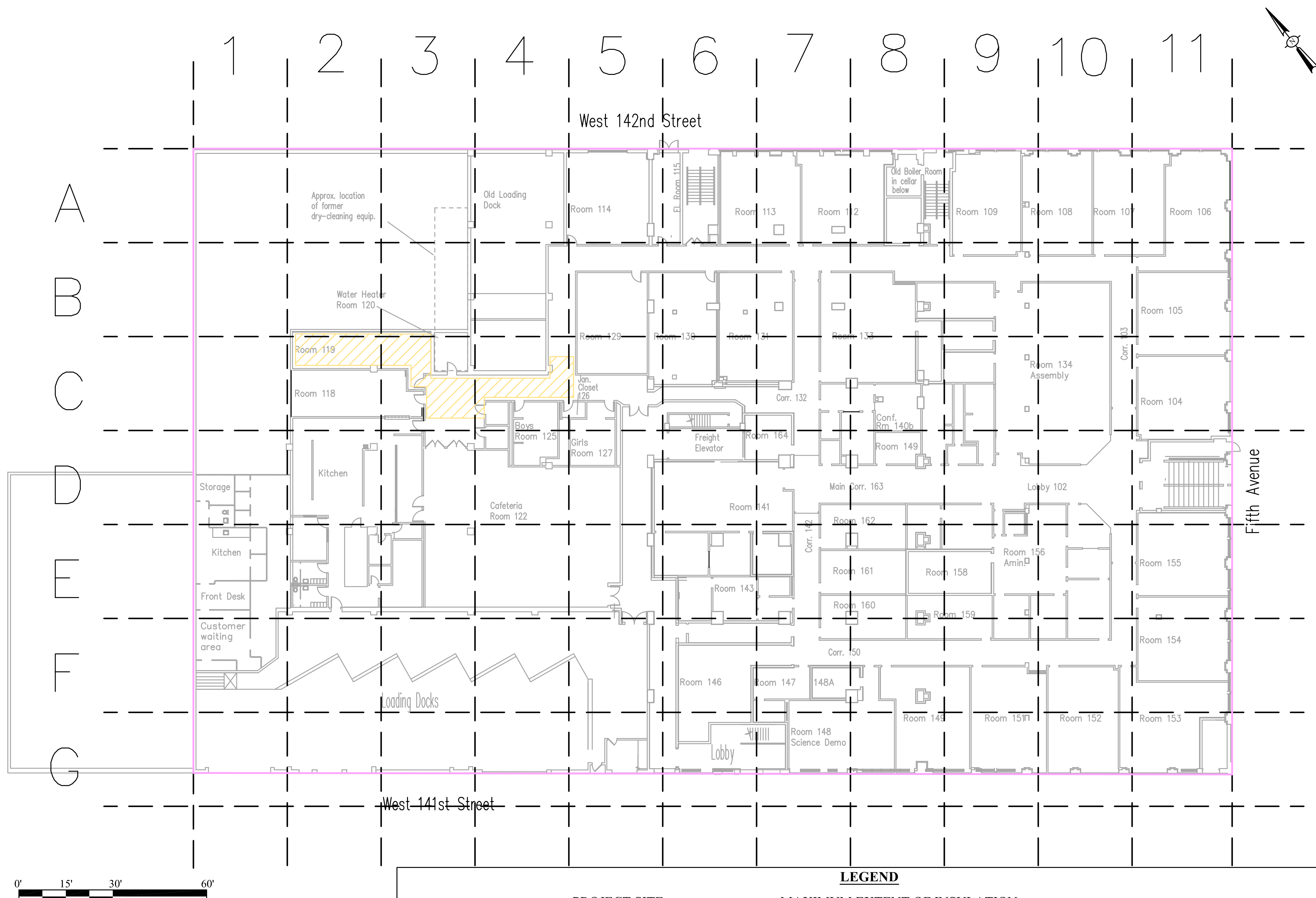
EXTENT OF STORAGE LOCKER AREA

AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE NEW YORK, NEW YORK

EXISTING VAPOR EXTRACTION SYSTEM

DATE	6.2.11
PROJECT NO.	08010
SCALE	1"30'
FIGURE	13



LEGEND

PROJECT SITE BOUNDARY

MAXIMUM EXTENT OF INSULATION REMOVAL AREA

AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE, NEW YORK, NY

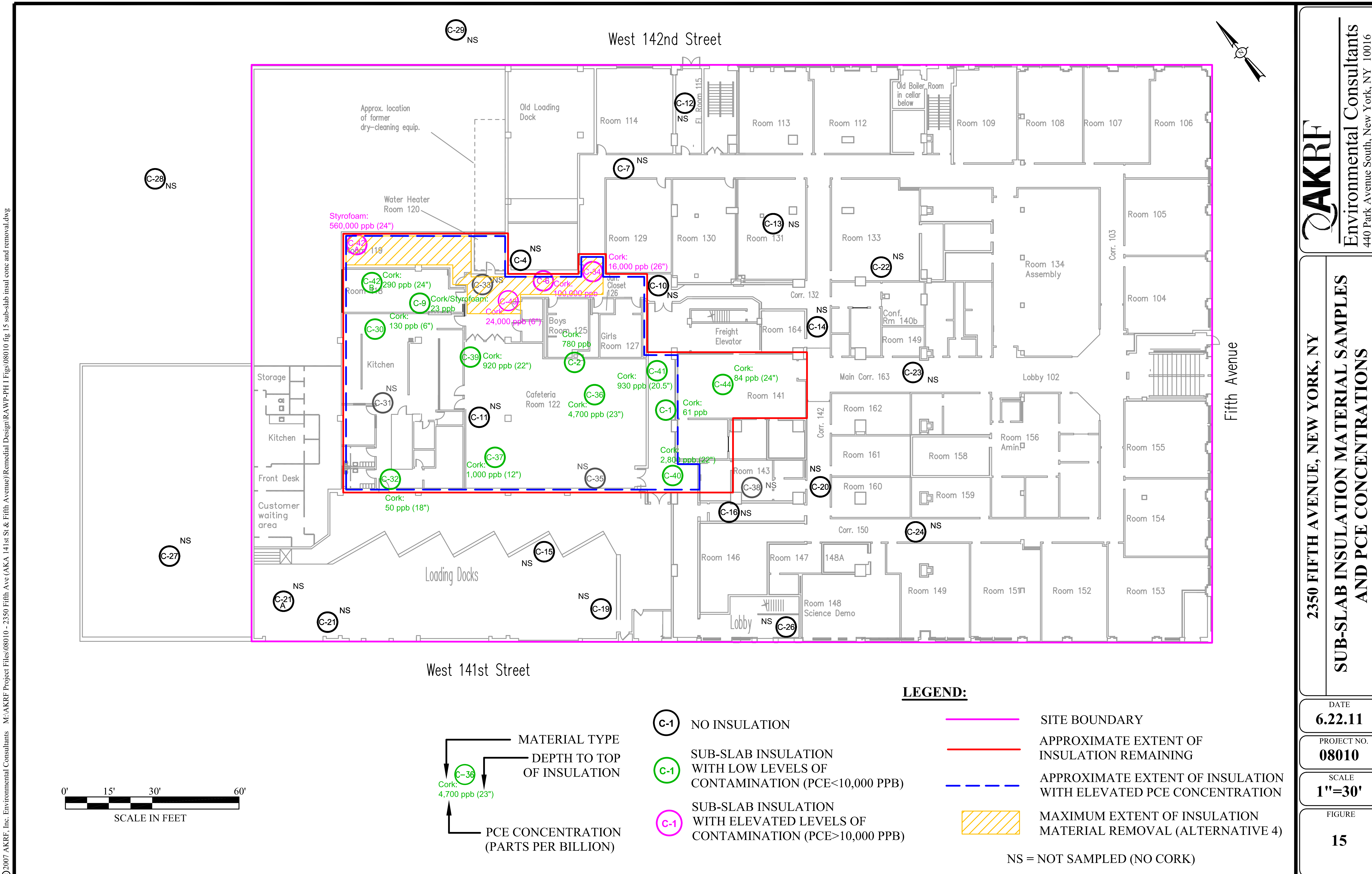
ALPHANUMERIC GRID MAP

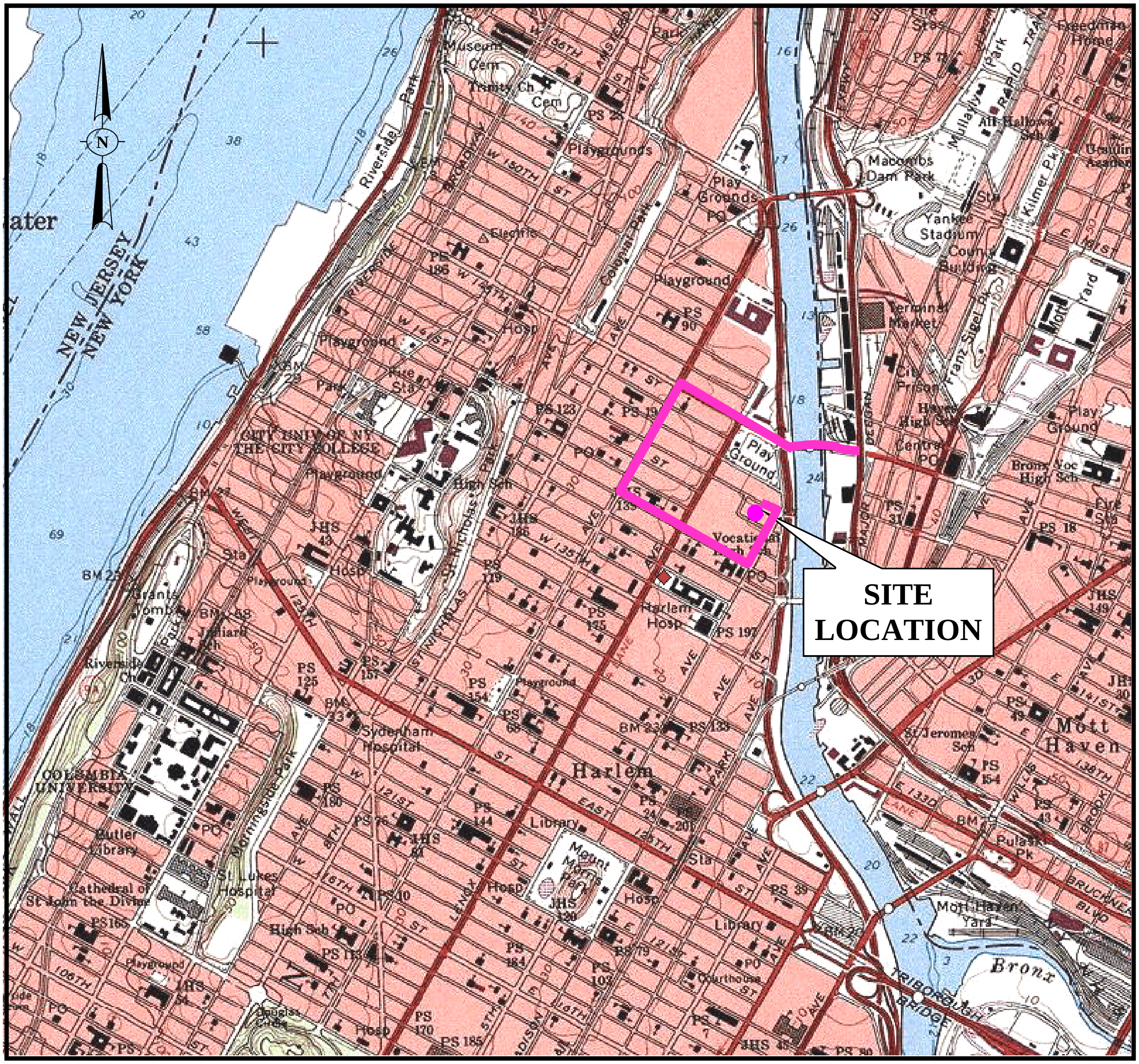
DATE 6.22.11

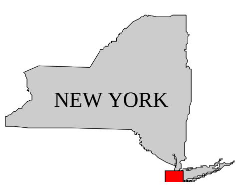
PROJECT NO. 08010

SCALE 1"=30'

FIGURE 14


West 142nd Street
West 141st Street
Fifth Avenue
Approx. location of former dry-cleaning equip.
Old Loading Dock
Water Heater Room 120
Styrofoam: 560,000 ppb (24")
Cork: 16,000 ppb (26")
Cork: 290 ppb (24")
Cork/Styrofoam: 23 ppb
Cork: 100,000 ppb
Cork: 24,000 ppb (6")
Cork: 130 ppb (6")
Cork: 780 ppb
Cork: 920 ppb (22")
Cork: 930 ppb (20.5")
Cork: 84 ppb (24")
Cork: 4,700 ppb (23")
Cork: 61 ppb
Cork: 2,800 ppb (22")
Cork: 1,000 ppb (12")
Cork: 50 ppb (18")
Kitchen
Cafeteria Room 122
Boys Room 125
Girls Room 127
Jan. Closet 126
Freight Elevator
Storage
Front Desk
Customer waiting area
Loading Docks
Lobby
Main Corr. 163
Lobby 102
Room 134 Assembly
Room 148 Science Demo
Old Boiler Room in cellar below
LEGEND:
NO INSULATION
SUB-SLAB INSULATION WITH LOW LEVELS OF CONTAMINATION (PCE<10,000 PPB)
SUB-SLAB INSULATION WITH ELEVATED LEVELS OF CONTAMINATION (PCE>10,000 PPB)
SITE BOUNDARY
APPROXIMATE EXTENT OF INSULATION REMAINING
APPROXIMATE EXTENT OF INSULATION WITH ELEVATED PCE CONCENTRATION
MAXIMUM EXTENT OF INSULATION MATERIAL REMOVAL (ALTERNATIVE 4)
NS = NOT SAMPLED (NO CORK)
MATERIAL TYPE
DEPTH TO TOP OF INSULATION
PCE CONCENTRATION (PARTS PER BILLION)
0' 15' 30' 60'
SCALE IN FEET
AKRF Environmental Consultants
440 Park Avenue South, New York, NY 10016
2350 FIFTH AVENUE, NEW YORK, NY
SUB-SLAB INSULATION MATERIAL SAMPLES AND PCE CONCENTRATIONS
DATE 6.22.11
PROJECT NO. 08010
SCALE 1"=30'
FIGURE 15
© 2007 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\08010 - 2350 Fifth Ave (AKA 141st St & Fifth Avenue)\Remedial Design\RAWP-PH I Figs\08010 fig 15 sub-slab insul conc and removal.dwg





SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

TRUCK ROUTE (TO MAJOR DEEGAN EXPRESSWAY)

NOTE:
SUBJECT TO CHANGE BASED ON AVAILABLE ROUTES AT THE TIME OF WORK AND CONTRACTOR INPUT AS TO CITY-MAPPED TRUCK ROUTES.

SOURCE:
7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP QUADRANGLE: CENTRAL PARK, NY 1995

2350 FIFTH AVENUE
NEW YORK, NEW YORK

TRUCK ROUTE MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE **6.22.11**

PROJECT No. **08010**

SCALE **AS SHOWN**

FIGURE **16**

APPENDIX A

METES AND BOUNDS

MONTROSE SURVEYING CO., LLP.	CITY & LAND SURVEYORS

116-20 METROPOLITAN AVE • RICHMOND HILL, NY 11418-1090
PHONE (718) 849-0600 • FAX (718) 849-0401 • EMAIL INFO @MONTROSESURVEYING.COM

Legal Description
Tax Block 1739 Tax Lot 33 & part of lot 22
MSC. Survey No. 58564-2

ALL that certain plot, piece or parcel of land situate, lying and being in the Borough of Manhattan, County, City and State of New York, bounded and described as follows;

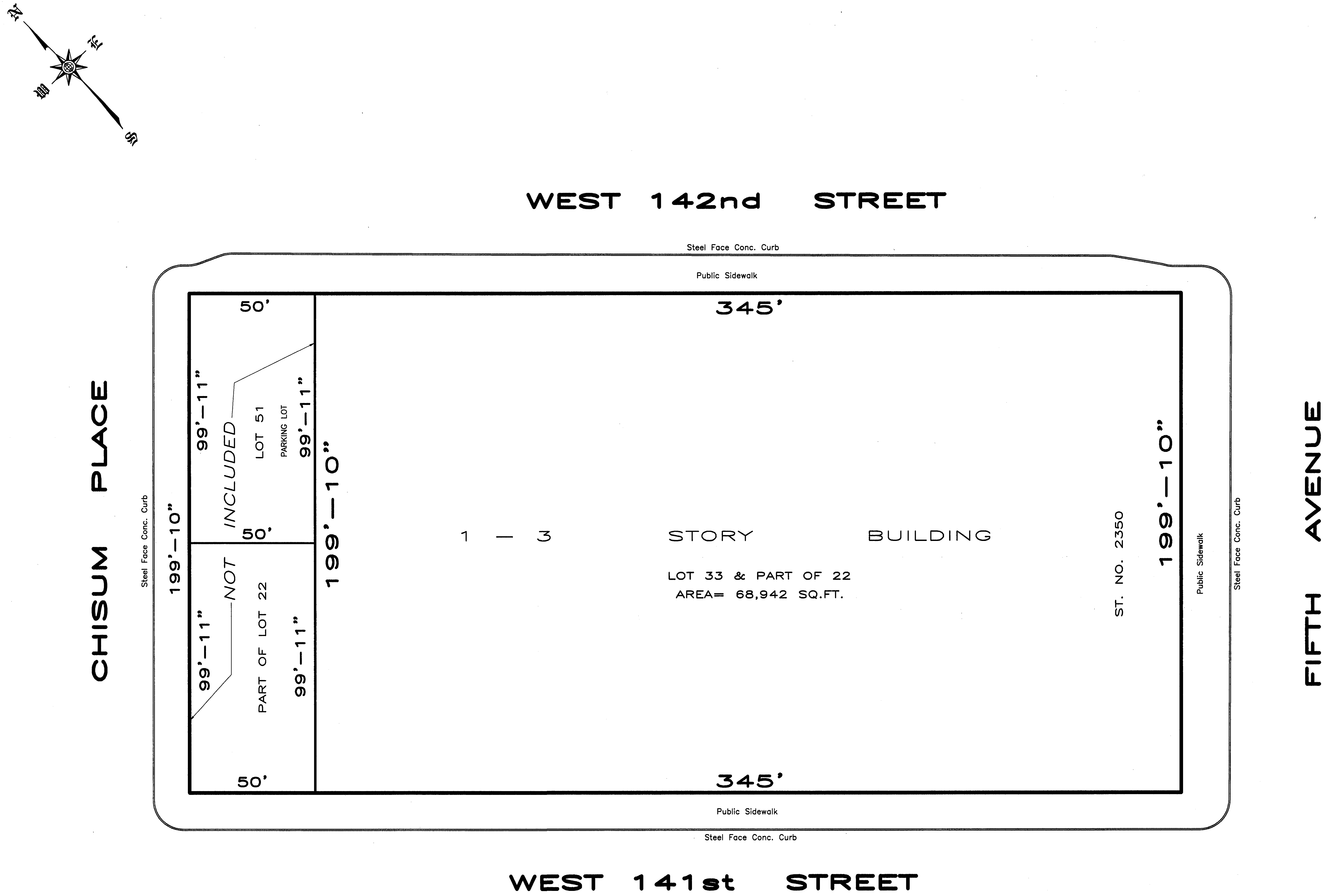
BEGINNING at the corner formed by the intersection of the westerly side of 5th Avenue, with the northerly side of West 141st Street;

RUNNING THENCE northerly, along the westerly side of 5th Avenue, 199 feet 10 inches to the corner formed by the intersection of the westerly side of 5th Avenue, with the southerly side of West 142nd Street;

RUNNING THENCE westerly, along the southerly side of West 142nd Street, 345 feet to a point;

RUNNING THENCE southerly, parallel with the westerly side of 5th Avenue, 199 feet 10 inches to the northerly side of West 141st Street;

RUNNING THENCE easterly, along the northerly side of West 141st Street, 345 feet to the corner, the point or place of BEGINNING.



ESTABLISHED 1876 * SUCCESSOR TO:

B.G. MEINIKHEIM C.S.*C.U. POWELL C.E.,C.S.*L.C.L. SMITH C.S.*NATHAN CAMPBELL C.E.,C.S.*A.U. WHITSON C.E.,C.S.* WILLIAM L. SAVACOOL C.E.,L.S.,C.S.*A.U. WHITSON INC. C.E.,C.S.*G. WEBER L.S.,C.S.*C. STIDOLPH R.A.,L.S.*WHITSON & POWELL INC. P.E.,L.S.,C.S.*KELLER & POWELL P.E.,L.S.,C.S.*LOUIS MONTROSE C.E.,L.S.,C.S.*FRED J. POWELL P.E.,L.S.,C.S.*

SURVEY NO. 58564-2

58564-2.DWG

REV	DATE	DESCRIPTION	ck
—	3-15-11	PARCEL DIAGRAM	

COUNTY : NEW YORK — SCALE 1" = 30'

TAX BLOCK 1739

TAX LOT 22 & 33 — STANDARD U.S.

DRN: M.S.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW

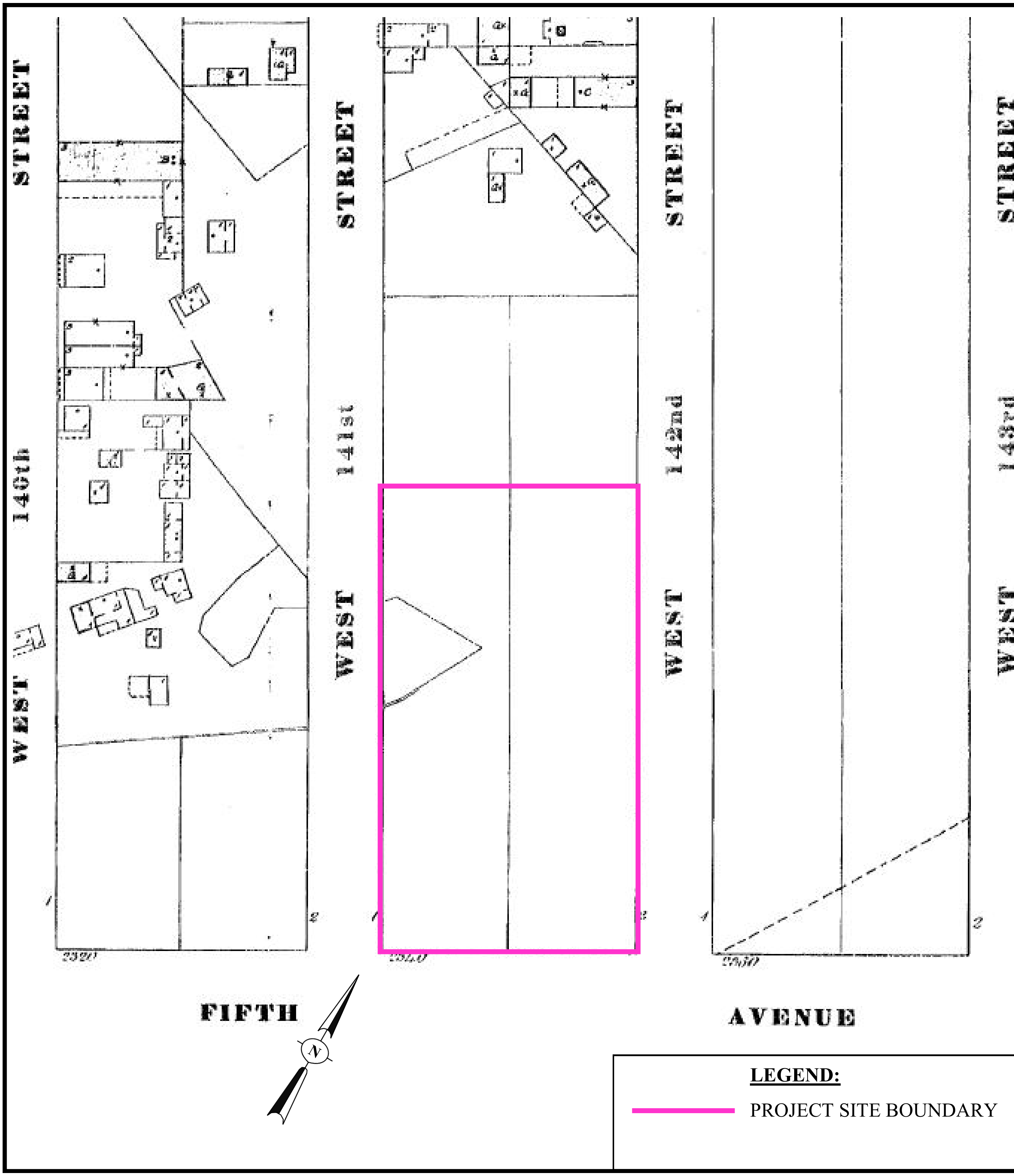
ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES

CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED AND ON HIS BEHALF TO THE TITLE COMPANY. GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION, CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS

MONTROSE
SURVEYING CO., LLP.
CITY & LAND SURVEYORS
116 20 METROPOLITAN AVE * RICHMOND HILL NY 11418-1090 * (718) 849-0600

APPENDIX B

SANBORN MAPS

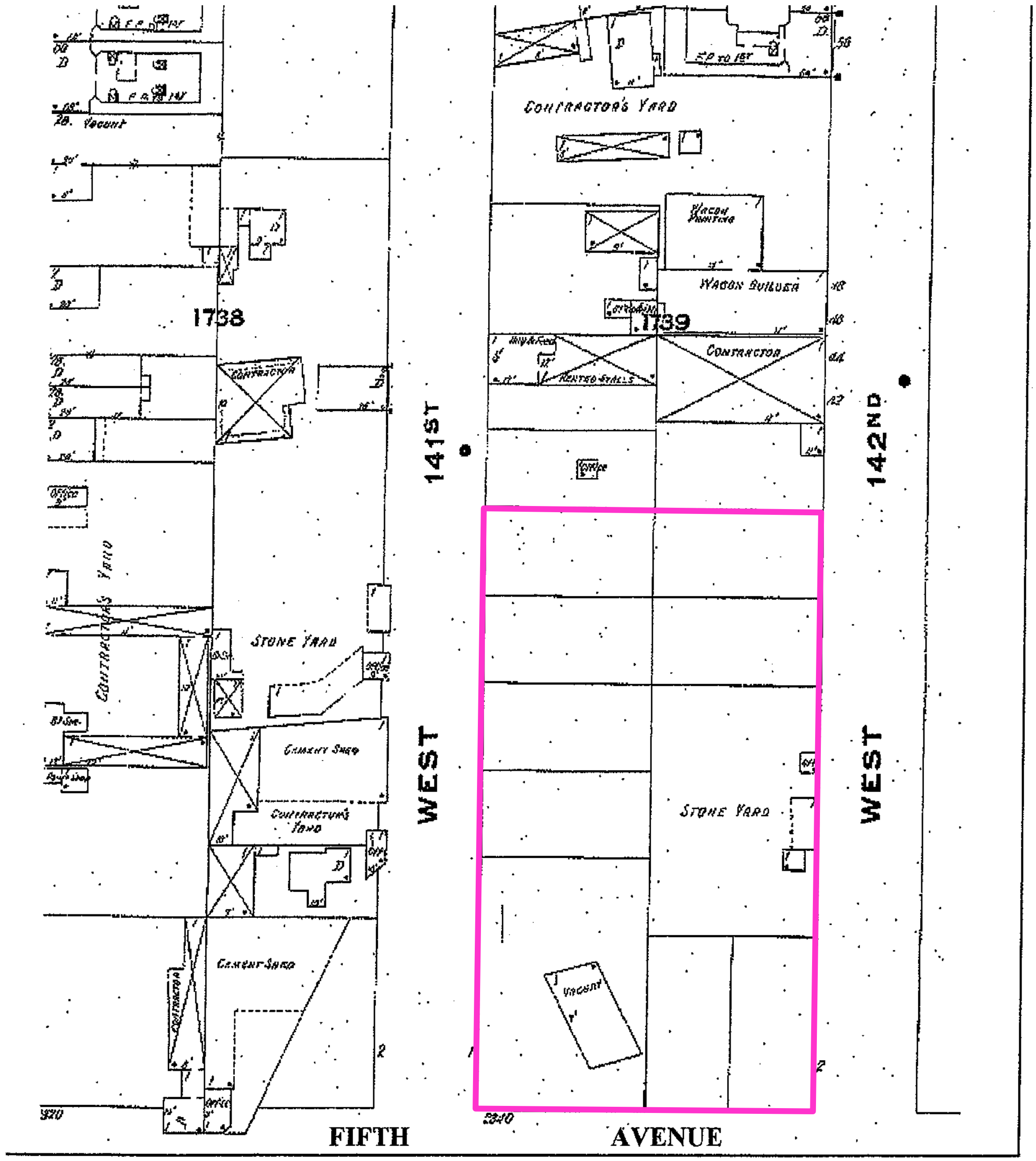


2350 FIFTH AVENUE
NEW YORK, NEW YORK

1893 SANBORN MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**4.16.10**
PROJECT No.	**08010**
SCALE	**NTS**
FIGURE	**Appx b**



LEGEND:

PROJECT SITE BOUNDARY

2350 FIFTH AVENUE
NEW YORK, NEW YORK

1909 SANBORN MAP

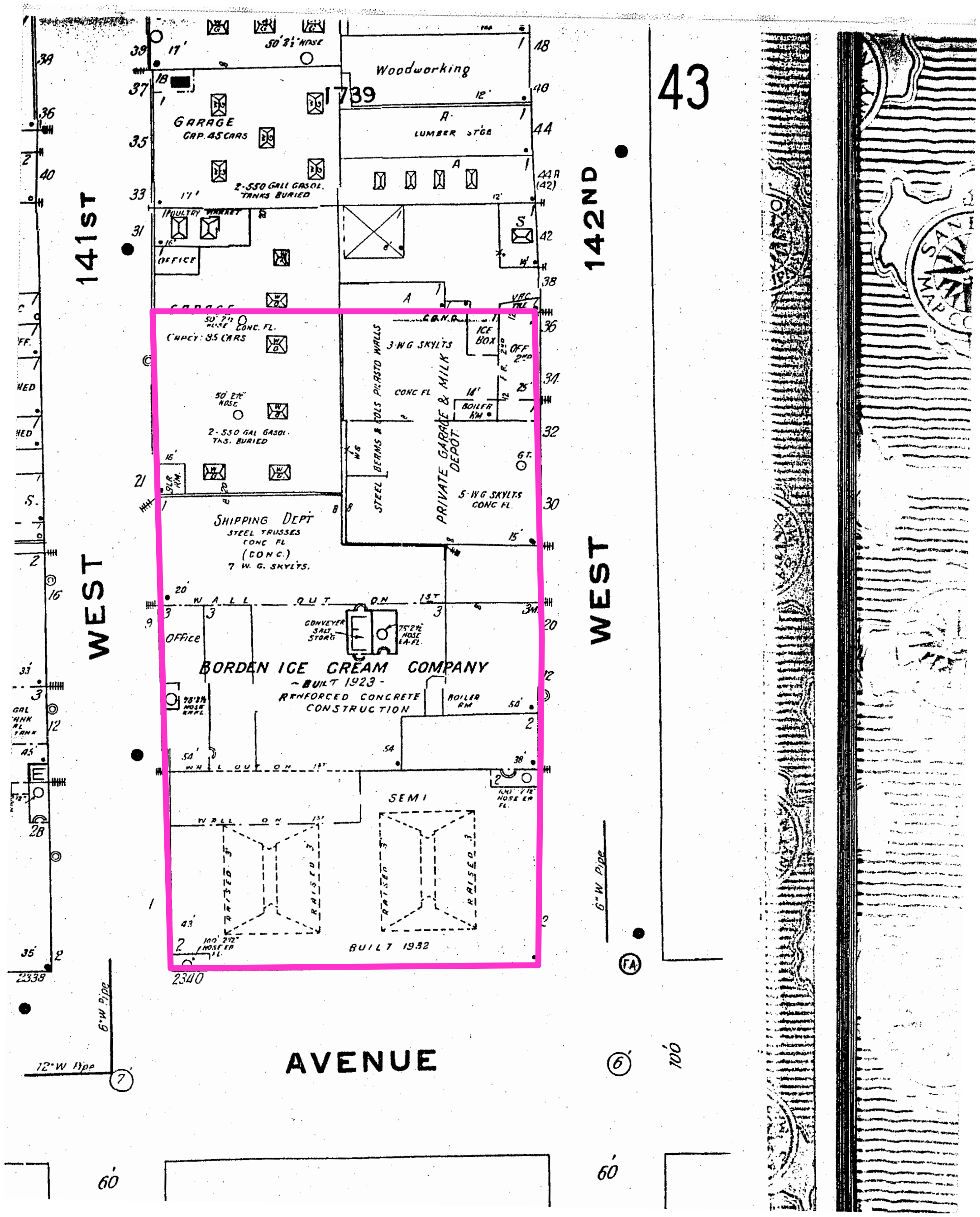
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE **4.16.10**

PROJECT No. **08010**

SCALE **NTS**

FIGURE **Appx b**



LEGEND:

PROJECT SITE BOUNDARY

2350 FIFTH AVENUE
NEW YORK, NEW YORK

1939 SANBORN MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**4.16.10**
PROJECT No.	**08010**
SCALE	**NTS**
FIGURE	**Appx b**

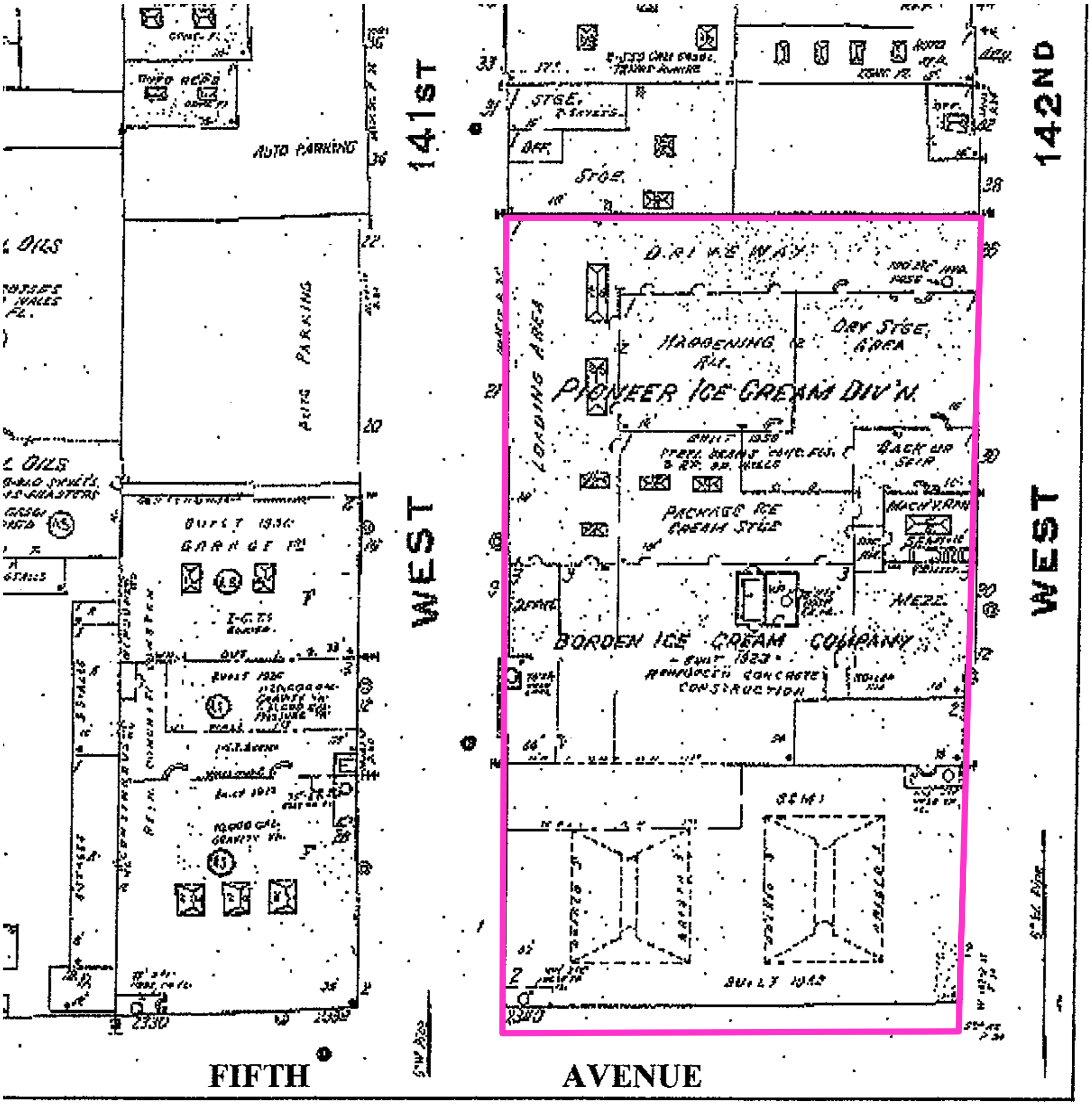


FIGURE II-4
1951 SANBORN MAP

LEGEND:

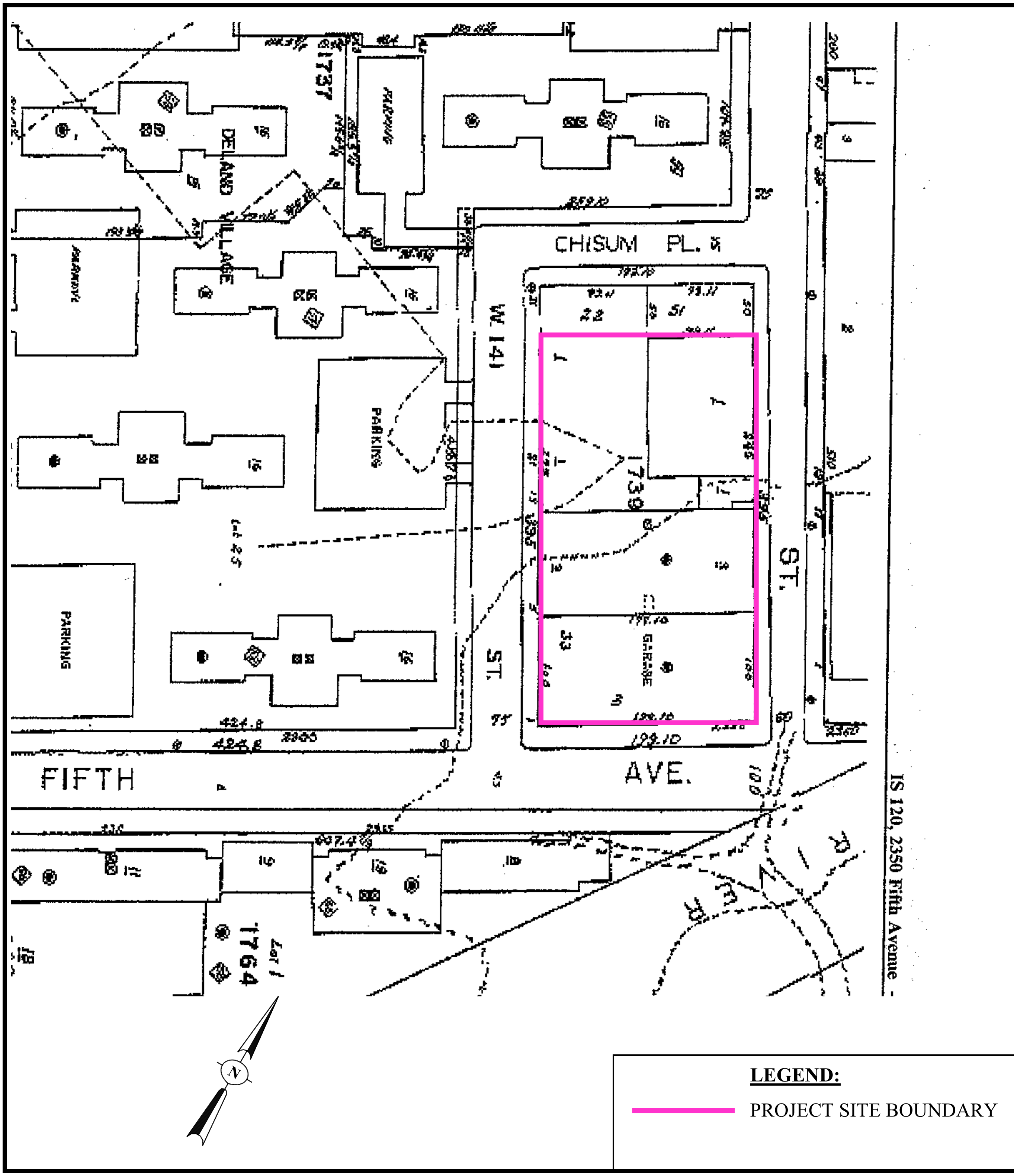
PROJECT SITE BOUNDARY

2350 FIFTH AVENUE
NEW YORK, NEW YORK

1951 SANBORN MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**4.16.10**
PROJECT No.	**08010**
SCALE	**NTS**
FIGURE	**Appx b**



2350 FIFTH AVENUE
NEW YORK, NEW YORK

1976 SANBORN MAP

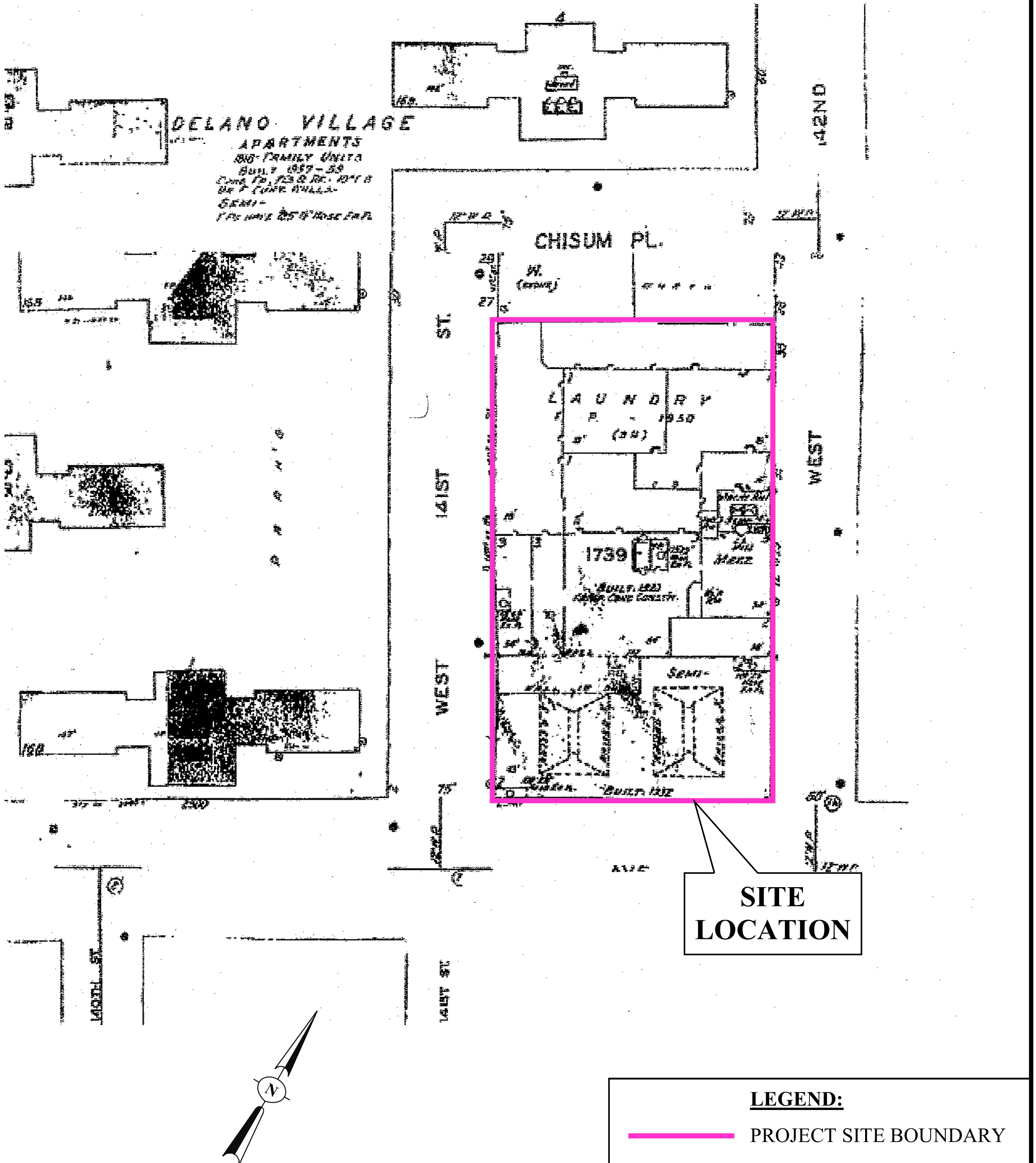
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
4.16.10

PROJECT No.
08010

SCALE
NTS

FIGURE
Appx b



LEGEND:
PROJECT SITE BOUNDARY

2350 FIFTH AVENUE
NEW YORK, NEW YORK

1996 SANBORN MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	4.16.10
PROJECT No.	08010
SCALE	NTS
FIGURE	Appx b

APPENDIX C

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

2350 Fifth Avenue

New York, New York

AKRF Project Number: 08010

NYSDEC Site #2-31-004

Prepared by:

AKRF Engineering, P.C.

440 Park Avenue South, 7th Floor
New York, NY 10016
(212) 696-0670

Prepared for:

2350 Fifth Avenue Corporation
309 East 94th Street, Ground Floor
New York, New York 10128

FEBRUARY 2012

APPROVALS

By their signature, the undersigned hereby certify that this HASP has been reviewed and approved for use at the 2350 Fifth Avenue, New York, New York Site.

Marc Godick, LEP – AKRF	DATE
Kathleen Brunner - AKRF	DATE

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope 1
1.3 Application 2
2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES 2
2.1 Project Manager (PM) 2
2.2 Site Manager (SM) 2
2.3 Project Environmental and Safety Manager (PESM) 3
2.4 Site Supervisor 3
2.5 Site Personnel 4
3.0 SITE HISTORY AND BACKGROUND 4
4.0 POTENTIAL HAZARDS AT THE SITE 5
4.1 Properties of Chemical Contamination 5
4.1.1 Chemical Hazards in Subslab Insulation Material, Soil and/or Groundwater 5
4.1.2 Other Chemical Hazards 5
4.2 Physical Hazards 5
4.2.1 Cold Stress 5
4.2.2 Heat Stress 6
4.2.3 Noise 6
4.2.4 Hand and Power Tools 6
4.2.5 Slips, Trips, and Falls 6
4.2.6 Fire and Explosion 6
4.2.7 Manual Lifting 6
4.2.8 Steam, Heat, Splashing 7
4.2.9 Utilities (Electrocution and Fire Hazards) 7
4.3 Task Hazard Analysis 7
5.0 PROCESS SAFETY MANAGEMENT 8
6.0 PERSONAL PROTECTIVE EQUIPMENT 8
6.1 OSHA Requirements for Personal Protective Equipment 9
7.0 MONITORING 9
7.1 Monitoring Requirements 9
7.1.1 Work Zone Monitoring 9
7.2 Noise Monitoring 12
8.0 ZONES, PROTECTION, AND COMMUNICATION 12
8.1 Site Control 12
8.2 Contamination Control 12
8.2.1 Personnel Decontamination Station 12
8.2.2 Minimization of Contact With Contaminants 13
8.2.3 Personnel Decontamination Sequence 13
8.2.4 Emergency Decontamination 13
8.2.5 Heavy Equipment Decontamination 13
8.3 Communications 13
9.0 MEDICAL SURVEILLANCE PROCEDURES 14
9.1 Medical Surveillance Requirements 14
10.0 SAFETY CONSIDERATIONS 14
10.1 High Loss Potential Hazards 14
10.1.1 Lockout-Tagout 14

10.1.2 Heavy Equipment Operation ... 15
10.1.3 Excavation and Trenching ... 16
11.0 DISPOSAL PROCEDURES ... 16
12.0 EMERGENCY RESPONSE / CONTINGENCY PLAN ... 16
12.1 Responsibilities ... 17
12.1.1 Project Environmental and Safety Manager (PESM) ... 17
12.1.2 Site Manager (SM) ... 17
12.1.3 Emergency Coordinator ... 17
12.1.4 Site Personnel ... 17
12.2 Communications ... 17
12.2.1 Telephone Communications ... 17
12.2.2 Hand Signals ... 18
12.3 Pre-Emergency Planning ... 18
12.4 Emergency Medical Treatment ... 18
12.5 Emergency Site Evacuation Routes and Procedures ... 18
12.6 Fire Prevention and Protection ... 19
12.7 Overt Chemical Exposure ... 19
12.8 Personal Injury ... 20
12.9 Decontamination During Medical Emergencies ... 20
12.10 Accident/Incident Reporting ... 20
12.11 Spill Control and Response ... 21
12.12 Emergency Equipment ... 21
12.13 Postings ... 21
12.14 Restoration and Salvage ... 22
12.15 Hospital Directions ... 22
12.16 Emergency Contacts ... 23
13.0 TRAINING ... 23
13.1 General Health and Safety Training ... 23
13.2 Annual Eight-Hour Refresher Training ... 23
13.3 Supervisor Training ... 23
13.4 Site-Specific Training ... 24
13.5 On-Site Safety Briefings ... 24
13.6 First Aid and CPR ... 24
14.0 LOGS, REPORTS, AND RECORD KEEPING ... 25
14.1 Medical and Training Records ... 25
14.2 On-Site Log ... 25
14.3 Exposure Records ... 25
14.4 Accident/Incident Reports ... 25
14.5 OSHA Form 300 ... 25
14.6 Hazard Communication Program/MSDS ... 25
14.7 Work Permits ... 25
15.0 FIELD PERSONNEL REVIEW ... 26

LIST OF FIGURES

Figure 1 – Site Plan
Figure 2 – Hospital Route Map

LIST OF TABLES

Table 1 – Chemical Data
Table 2 – Personal Protective Equipment Selection (in text)
Table 3 – Work Zone Air Monitoring Action Levels (in text)

LIST OF APPENDICES

Appendix A – ASTDR Chemical Fact Sheets
Appendix B – Cold Stress Program
Appendix C – Heat Stress Program
Appendix D – Monitoring Instruments: Use, Care, and Calibration
Appendix E – Lockout/Tagout
Appendix F – Incident Report Form

1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan was prepared for pre-remedial design investigation and remediation activities at the 2350 Fifth Avenue Site in the Borough of Manhattan, New York, New York. The Site is bounded by Fifth Avenue on the east, West 141st Street on the south, a garage and paved parking area on the west, and West 142nd Street on the north. (See Figure 1 for the project Site location.) The western boundary of the Site is about 50 feet east of Chisum Place. The Site extends about 200 feet north-south and about 345 feet east-west. The Harlem River is 100 to 200 feet to the east of the Site.

The surrounding area consists of high-rise residential buildings on the blocks to the west, south, and southeast of the Site. The Harlem River Drive is to the northeast, and a National Guard Armory occupies the block to the north, between West 142nd and West 143rd Streets. The Site is owned by 2350 Fifth Avenue Corporation and managed under the oversight of the New York State Department of Environmental Conservation (NYSDEC) under Order on Consent Index No. W2-0792-97-05.

This Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by workers participating in investigation and remediation activities at the Site by AKRF Engineering, P.C. (AKRF) and a licensed contractor (the 'Contractor') specified and retained by the property owner. The HASP takes into account the specific hazards inherent to the Site, and presents procedures to be followed by AKRF, the Contractor, and all Site visitors in order to avoid and if necessary, protect against health and/or safety hazards. Activities performed under this HASP will comply with applicable parts of OSHA Regulations, primarily 29 CFR Parts 1910 and 1926. A copy this HASP will be maintained on-Site for the duration of remedial work.

All workers who may participate in activities at the Site that are under the direction of AKRF or the Contractor are required to comply with the provisions specified in this HASP. All Site visitors who enter designated work zones must also comply with this HASP. Refusal or failure to comply with the HASP or violation of any safety procedures by field personnel and/or subcontractors performing work covered by this HASP may result in immediate removal from the Site following consultation with the Owner's Representative. No personnel are permitted to enter permit confined spaces under this HASP.

1.2 Scope

This HASP has been developed to address the health and safety concerns during Site investigation and remedial actions at the Site that are under the direction of AKRF and the Contractor as specified in the Remedial Action Work Plan (RAWP) - Phase 1 dated February 2012. Although the HASP addresses all activities listed herein, work at the individual locations may include all, or only some of these tasks. Work anticipated under the RAWP - Phase 1 includes the following remedial tasks:

- Construct an environmental enclosure equipped with negative air units for protection of remediation workers and building occupants over the excavation zone.
- Establish stockpiling/staging areas for excavated material classified as hazardous, non-hazardous to be removed, or non-hazardous to be reused, as determined by the Owner's Environmental Consultant, and in accordance with the RAWP - Phase 1.

- Remove the existing concrete floor around the perimeter of the designated removal area via saw cut.
- Remove sub-slab insulation material and overlying fill material from the removal area within the environmental enclosure. All removed material will be either reused as backfill material or disposed of/recycled off-Site in accordance with the RAWP – Phase 1.
- Restore the disturbed section of flooring to pre-excavation conditions.

1.3 Application

The HASP applies to all personnel involved in the above tasks, that are under the direction of the Contractor or AKRF, who wish to gain access to active work areas, including but not limited to:

- Owner's representatives, contractors, and subcontractors performing tasks under the direction of AKRF or the Contractor;
- Federal, State or local representatives;
- AKRF or the Contractor's employees; and
- AKRF or the Contractor's subcontractors.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

This section specifies the project team's Project Organization:

2.1 Project Manager (PM)

The Project Manager is anticipated to be Kate Brunner of AKRF. The PM responsibilities include the following:

- Plans, schedules, and manages implementation of remediation activities;
- Coordinates with the Site Manager (SM), Site Supervisor, and Project Environmental Safety Manager (PESM) to ensure that health and safety requirements are met;
- Ensures that field work is scheduled with adequate personnel and equipment resources to complete the job safely and enforce Site health and safety rules;
- Conducts periodic inspections;
- Participates in incident investigations;
- Ensures the HASP has all of the required approvals before any Site work is conducted;
- Ensures that the Site Manager is informed of project changes that require modifications of the HASP; and
- Has overall project responsibility for Project Health and Safety.

2.2 Site Manager (SM)

The Site Manager is anticipated to be Matt Oleske of AKRF. The SM responsibilities include the following:

- Manages day-to-day implementation of the Site safety measures specified in the HASP;

- Ensures that adequate communication between field crews, health and safety monitoring personnel, and emergency response personnel is maintained;
- Confirms that field Site personnel are adequately trained and qualified to work at the Site and that proper personal protective equipment is utilized by field teams;
- Investigates and report all accidents/incidents to the PM and Project Environmental Safety Manager (PESM);
- Conducts and documents periodic safety briefings;
- Stops work if necessary based on health and safety monitoring;
- Acts as the primary point of contact for Site-related activities and coordination with non project-related Site operations;
- Identifies operational changes that require potential modifications to health and safety procedures and Site safety plans, and reports such changes to the PM and PESM;
- Conducts health and safety monitoring activities;
- Determines upgrades or downgrades of personal protective equipment (PPE) based on Site conditions and/or real-time monitoring results;
- Ensures that monitoring instruments are calibrated; and
- Reports to the PM and PESM to provide summaries of field operations and progress.

2.3 Project Environmental and Safety Manager (PESM)

The PESM is a qualified health and safety professional with experience in hazardous waste Site remediation activities. The PESM is anticipated to be Marc Godick of AKRF. The PESM responsibilities include the following:

- Provides for the development and approval of the HASP;
- Serves as the primary contact to review health and safety matters that may arise;
- Approves revised or new safety protocols for field operations;
- Coordinates revisions of this HASP with field personnel;
- Coordinates upgrading or downgrading of personal protective equipment with the SM;
- Assists in the investigation of all accidents/incidents; and
- Enforces work stoppage following reporting of on-site activities from the PM and SM.

2.4 Site Supervisor

The Site Supervisor will be appointed from the Owner's Contractor. The Site Supervisor responsibilities include the following:

- Provide for the necessary training of field crews in accordance with OSHA regulations and provides proof of training to the SM prior to entering the Site;
- Conduct routine safety inspections of their work areas;
- Conduct incident investigations and together with the SM, prepares appropriate reports;

- Enforces health and safety rules and compliance with the HASP; and
- Plans field work using appropriate safe procedures and equipment.

2.5 Site Personnel

The Site Personnel responsibilities include the following:

- Report any unsafe or potentially hazardous conditions to the SM;
- Maintain knowledge of the information, instructions and emergency response actions contained in the HASP;
- Comply with rules, regulations and procedures as set forth in this HASP and any revisions;
- Prevent admittance to work Sites by unauthorized personnel; and
- Inspect all tools and equipment, including PPE, prior to use.

3.0 SITE HISTORY AND BACKGROUND

The existing building was originally constructed in segments as an ice cream factory by the Bordens Ice Cream Company. The three-story section was built in 1923; the two-story section was built in 1932; and the one-story section was built in 1950. The floor slab at the western end of the building (the one-story section built in 1950) was constructed with various layers of insulating materials related to the original use of the building as a refrigerated ice cream plant. At the westernmost section of the building, there was most typically a layer of tar paper directly under the slab (now buried), with a thin (two inches or less) layer of cork underneath. Under the cork was a layer of styrofoam eight to ten inches thick. Under the styrofoam was a layer of fill, more tar paper, and another concrete slab about four inches thick. There was fill beneath this slab, and at some locations brick and/or other concrete slabs were encountered within the fill. These were probably remains of earlier structures. An area just east of the section with the cork/styrofoam insulation (the location of the current insulation removal) had a thicker layer of cork four to ten inches thick under the slab, but no styrofoam. The insulation material was identified only beneath the western portion of the building used for refrigeration.

Following its use as an ice cream factory, the building was occupied by a commercial laundry from 1970 to 1994. The laundry operated under a variety of names including Budge-Wood Service, Bluebird Laundry, and Swiss-American Laundry. The facility included a dry cleaning operation utilizing tetrachloroethene (PCE) as a cleaning solvent. The dry cleaning operation was located near the northern side of the one-story portion of the building, in the former refrigerated portion of the building just west of the 142nd Street loading dock. PCE was stored in the same area. The operations initially used first-generation machines with separate washers and dryers. Around 1984, these were replaced by second-generation machines, which were single units that perform all of the washing, extraction, and drying operations. It was likely that most of the on-Site leaks and spills of PCE were associated with the use of the first generation machines, which involved more handling of PCE that the later machines. The facility had an U.S. Environmental Protection Agency (EPA) ID number as a generator of hazardous waste (NYD071026173).

One out-of-service underground fuel oil tank on the Site is located under the West 142nd Street loading dock, immediately east of the former dry cleaning area.

A preliminary Site assessment and remedial investigation, consisting of several phases of groundwater, soil, soil vapor and indoor air sampling, were performed on the subject Site from 1996 to 2009. The major contaminant of concern identified on the Site was PCE and its breakdown products (trichloroethene, dichloroethene, and vinyl chloride), which appear to be largely limited to the northwestern portion of the Site in and around the area of the former dry cleaning activities. Some evidence of petroleum contamination was also detected.

4.0 POTENTIAL HAZARDS AT THE SITE

This section presents an assessment of the chemical, biological, and physical hazards that may be encountered during the tasks specified under HASP Section 1.2.

4.1 Properties of Chemical Contamination

4.1.1 Chemical Hazards in Subslab Insulation Material, Soil and/or Groundwater

Potential chemical issues related to work at this Site include but are not limited to: dermal contact and/or ingestion hazards associated with the handling of PCE contaminated material; vapor phase volatile organic compounds encountered during soil and insulation disturbance; and dissolved phase PCE, its breakdown products, and petroleum related contamination in on Site groundwater.

- Volatile organic chemicals (VOCs), such as PCE, trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride may be present as soil, insulation, and groundwater contaminants. These compounds generally have a depressant effect on the central nervous system (CNS), may cause chronic liver and kidney damage, and some are suspected human carcinogens. PCE is a known human carcinogen. Acute exposure may include headache, dizziness, nausea, and skin and eye irritation.
- The Site potentially contains asbestos-containing materials (ACM) in the forms of ACM pipe insulation, caulks, mastics, and other building materials. The primary route of exposure for asbestos is inhalation. Chronic exposure to asbestos may cause asbestosis and mesothelioma.

The potential health effects from on-Site contamination are summarized in Table 1 and detailed in the U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry (ATSDR) fact sheets attached in Appendix A.

4.1.2 Other Chemical Hazards

Chemicals not identified in this HASP may be used during investigation and remediation activities. Prior to the initiation of these tasks, Material Safety Data Sheets (MSDSs) will be obtained for each of the chemicals to be used and all Site workers and visitors who may potentially be exposed will be made aware of these hazards.

4.2 Physical Hazards

Physical hazards will be addressed as necessary. More detailed safety procedures are provided as appendices to this HASP, where applicable.

4.2.1 Cold Stress

At certain times of the year, workers may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia as well as slippery surfaces, brittle equipment, poor judgment and unauthorized procedural changes. The procedures to be followed as part of the cold stress program are included in Appendix B.

4.2.2 Heat Stress

Heat stress is a significant potential hazard, which is greatly exacerbated with the use of PPE in hot environments. The potential hazards of working in hot environments include dehydration, cramps, heat rash, heat exhaustion, and heat stroke. A heat stress prevention program will be implemented when ambient temperatures exceed 70ºF for personnel wearing impermeable clothing. The procedures to be followed as part of the heat stress program are found in Appendix C.

4.2.3 Noise

Noise is a potential hazard associated with the operation of heavy equipment, power tools, pumps and generators. Operations that require the use of hearing protection include operation of heavy equipment, generators, jackhammers, chain saws, sheetpile drivers, dewatering equipment, and pressure washers. Site workers who will perform suspected high noise tasks and operations will be provided with earplugs. Workers not performing those tasks but working in close proximity to that equipment will also be required to wear hearing protection. If deemed necessary by the SM, the PESM will be consulted on the need for additional hearing protection and the need to monitor sound levels for Site activities.

4.2.4 Hand and Power Tools

In order to complete the various tasks for the project, personnel will utilize hand and power tools. The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. Work gloves, safety glasses, and hard hats will be worn by the operating personnel at all times when utilizing hand and power tools, and GFI-equipped circuits will be used for all power tools.

4.2.5 Slips, Trips, and Falls

Working in and around the Site will pose slip, trip and fall hazards due to slippery surfaces that may be oil covered, or from surfaces that are wet from rain or ice. Excavation at the Sites will cause uneven footing in the trenches and around the spoil piles. Care should be exercised when walking at the Site, especially when carrying equipment.

4.2.6 Fire and Explosion

When conducting excavating activities, the opportunity of encountering fire and explosion hazards exists from contamination in the soil and the possibility of free product in the underground pipelines. This will be especially hazardous if pipelines are sawed or broken to grout the ends. Additionally, the use of a diesel engine on excavating equipment could present the possibility of encountering fire and explosion hazards.

4.2.7 Manual Lifting

Manual lifting of heavy objects such as sections of pipe may be required. Failure to follow proper lifting technique can result in back injuries and strains. Site workers will be instructed to use power equipment to lift heavy loads whenever possible and to evaluate loads before trying to lift them (i.e., they should be able to easily tip the load and then return it to its original position). Heavy loads should be carried with a buddy and the following proper lifting techniques will be stressed: 1) make sure footing is solid, 2) make back straight with no curving or slouching, 3) center body over feet, 4) grasp the object firmly and as close to your body as possible, 5) lift with legs, and 6) turn with your feet, don't twist. Back injuries are a serious concern as they are the most common workplace injury, often resulting in lost or restricted work time, and long treatment and recovery periods. In addition, hand digging for pipes may present lifting/ergonomic hazards.

4.2.8 Steam, Heat, Splashing

Exposure to steam/heat/splashing hazards can occur during steam cleaning activities. Exposure to steam/heat/splashing can result in scalding/burns, eye injury, and puncture wounds. Proper PPE will be worn during all steam cleaning activities such as rain gear or Tyvek, hardhat equipped with splashguard, and water resistant gloves and boots.

4.2.9 Utilities (Electrocution and Fire Hazards)

Underground utilities at the Site pose fire, explosion, and electrocution hazards. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death. Underground utilities, facilities, equipment, and structures will be located prior to start of remedial excavation activities. The Underground Utilities Call Center will be notified a minimum of three (3) days before any subsurface disturbance. Care shall be exercised to avoid damage to utilities beneath the surface slab.

4.3 Task Hazard Analysis

The scope of work described in Section 1.2 will be accomplished with the following tasks:

1. Mobilization/Demobilization: mobilize equipment; establish Site security, work zones, and staging areas.
2. Site Preparation/Construction Activities: locate utilities; construct decontamination pad; construct negative pressure environmental enclosure around excavation area.
3. Soil Excavation and Loading: remove floor slab in designated removal area; excavate and segregate shallow overburden materials; remove any subgrade slabs encountered above the insulation material; excavate subsurface contaminated soil (within environmental enclosure); load dump trucks; decontaminate heavy equipment; backfill excavations.
4. Site Restoration Activities: restore flooring in excavation area and any damaged adjacent floors/walls to original condition.

All of these tasks include the potential for the chemical and physical hazards, and care should be taken within the work zone to avoid these hazards as described above. There is a higher potential for chemical hazards to occur during activities that involve the removal and handling of contaminated material; however, exposure to vapors may occur to a lesser degree as soon as the top concrete slab is removed. Protection of building occupants and visitors would be accomplished through excavation within a negative pressure environmental enclosure, which would involve additional hazards including the buildup of combustible gases and carbon monoxide. Levels of carbon monoxide (CO) and breathable oxygen (O_2) will be monitored within the enclosure to maintain O_2 levels above 19.5% and CO levels below 5 ppm. All tasks should be conducted using the appropriate Personal Protective Equipment (PPE) for the associated exposure, as described in Section 6.0.

5.0 PROCESS SAFETY MANAGEMENT

Process Safety Management is a systematic way of identifying the potential health and safety hazards associated with major phases of work on the project and the methods to avoid, control and mitigate those hazards. Process Safety Management guidelines will be developed for all activities as necessary, prior to start-up. Process Safety Management will be used to train work crews in proper safety procedures during phase preparatory meetings.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The personal protection equipment required for various remediation tasks are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, Appendix B, "General Description and Discussion of the Levels of Protection and Protective Gear." All on-Site Site personnel shall wear, at a minimum, Level D personal protective equipment. When work is conducted in areas where potential NAPL contamination is present, workers shall wear, at a minimum, Level D modified personal protective equipment. The protection will be based on the air monitoring described in Section 7.0. Table 2 lists the required PPE for the anticipated remediation tasks:

TABLE 2
PERSONAL PROTECTIVE EQUIPMENT SELECTION

LEVEL OF PROTECTION & PPE		WORK ACTIVITY/CONDITIONS
Level D (x) Steel Toe Boots (x) Hard Hat (x) Leather Work Gloves (as needed) (x) Reflective Vest	(x) Safety Glasses -or- (x) Face Shield (x) Ear Plugs (as needed) (x) Latex Gloves (as needed)	• All activities except those noted under Levels D modified and C
Level D – Modified ***(in addition to Level D)*** (x) Nitrile Gloves (x) Overboots	(x) Tyvek Coveralls (as needed) -or- (x) Saranex/Polyethylene-coated Tyvek Coveralls (as needed)	• Excavation/removal and trenching • Dewatering • Backfilling • Heavy equipment decontamination • Other activities with potential for contact with PCE contaminated material
Level C – ***(in addition to Level D – Modified)*** (x) Half-Face Respirator ( ) Full Face Respirator ( ) Full-Face PAPR	( ) Particulate Cartridge (P100) ( ) Organic Cartridge (x) Dual Organic/Particulate Cartridge	• If PID > 10 ppm and/or • If PM10 > 1.8 mg/m^3
Level C - Modified ***(in addition to Level D – Modified)*** ( ) Half-Face Respirator (x) Full Face Respirator ( ) Full-Face PAPR	( ) Particulate Cartridge (P100) ( ) Organic Cartridge (x) Dual Organic/Particulate Cartridge	• If PID >50 ppm; or • Eye irritation occurs
Notes: Vapor (PID) and particulate (PM_{10}) measurements are work zone action levels sustained for >15 minutes		

The personal protective equipment (PPE) specified in Table 2 reflects the hazard analysis presented in Section 4.0 and PPE selection required by 29 CFR 1910.132. For the purposes of PPE selection, the PESM and SM are considered competent persons. The signatures on the front of the HASP constitute certification of the hazard assessment. For activities not covered by Table 2, the SM will conduct the hazard assessment and select the PPE in consultation with the PESM.

6.1 OSHA Requirements for Personal Protective Equipment

All personal protective equipment used during the course of this field investigation must meet the following OSHA standards:

Type of Protection	Regulation	Source
Eye and Face	29 CFR 1910.133	ANSI Z87.1 1968
Respiratory	29 CFR 1910.134	ANSI Z88.1 1980
Head	29 CFR 1910.135	ANSI Z89.1 1969
Foot	29 CFR 1910.136	ANSI Z41.1 1967

ANSI = American National Standards Institute

Any on-Site personnel who have the potential to don a respirator must have a valid fit test certification and documentation of medical clearance. The PESM will maintain such information on file for on-Site personnel. The SM will obtain such information from the subcontractor's Site supervisor prior to the initiation of any such work. Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134). Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency;
- IDLH concentrations; and
- If contaminant levels exceed designated use concentrations.

When work is conducted in areas where exposed sub-slab insulation material is anticipated, workers shall wear, at a minimum, Level D modified personal protective equipment. The level of respiratory protection will be based on the air monitoring described in Section 7.0.

7.0 MONITORING

7.1 Monitoring Requirements

Environmental Health and Safety Monitoring will be performed during all soil disturbance activities in accordance with this section.

7.1.1 Work Zone Monitoring

The following monitoring instruments will be available for use during field operation as necessary:

- Photoionization detector (PID), Thermo 580B with 10.6 eV lamp or equivalent;
- Dust meter, TSI DustTrak or equivalent;
- Combustible gas indicator (CGI) (minimum %LEL and O_2), QRAE or equivalent;

- Sound Level Meter if deemed necessary by the SM and PESM, type to be appropriate to the activities performed; and
- QRAE or equivalent (CO monitoring).

All air monitoring equipment will be calibrated and maintained in accordance with manufacturer's requirements and the Monitoring Instruments: Use, Care, and Calibration program included in Appendix D. All calibrations will be recorded by the SM in the daily log.

Organic vapor concentrations shall be measured using the PID during excavating and other intrusive activities. During intrusive operations, organic vapor concentrations shall be taken at least once every hour. Organic vapor concentrations shall be measured upwind of the work Site(s) to determine background concentrations at least twice a day, (once in the morning and once in the afternoon). The SM will interpret monitoring results using professional judgment.

A dust meter will be used to measure airborne particulate matter during intrusive activities. Monitoring will be at least once per hour and readings will be averaged over a 15-minute period for comparison with the action levels. Monitoring personnel will make a best effort to collect dust monitoring data from downwind of the intrusive activity. If off-Site sources are considered to be the source of the measured dust, upwind readings will also be collected.

A CGI/O_2 meter will be used to monitor for combustible gases (%LEL) and oxygen (O_2) content within the environmental enclosure surrounding the insulation removal area, and elsewhere as necessary. The CGI will also be equipped with a carbon monoxide (CO) meter. Percent LEL, O_2, and CO will be monitored in the enclosure continuously during removal activities.

All trenches and excavations will be monitored before potential entry at the beginning of each shift. Trenches are not expected to be entered on a regular basis during the remediation.

Guidelines have been established by the National Institute for Occupational Safety and Health (NIOSH) concerning the action levels for work in a potentially explosive environment. These guidelines are as follows: 10% LEL - Limit all activities to those which do not generate sparks, 20% LEL - Cease all activities in order to allow time for the combustible gases to vent.

Measurements will be taken prior to commencement of work and periodically or continuously during the work, depending on the contaminant being monitored, as outlined in Table 3 below. Measurements will be made as close to the workers as practicable and at the breathing height of the workers.

The SM shall set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end of work. The action levels and required responses are listed in the following table:

TABLE 3
WORK ZONE AIR MONITOING ACTION LEVELS

Air Monitoring Instrument	Monitoring Location	Action Level (sustained for >15 min)	Site Action
PID	Breathing Zone	0 - 10 ppm	No respiratory protection is required
		10 – 500 ppm	Upgrade to Level C PPE. OR Stop work, withdraw from work area.
		> 500 ppm	Stop Work. Resume work when readings are less than 500 ppm.
Dust Meter	Excavation	< 5 mg/m^3	No respiratory protection is required Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water
		Between 5 mg/m^3 and 125 mg/m^3	Upgrade to Level C PPE. Apply additional dust suppression measures. If < 2.5 mg/m^3 resume work using level D. Otherwise, use level C.
		> 125 mg/m^3	Stop Work. Apply additional dust suppression measures. Resume work when less than 125 mg/m^3.
Oxygen Meter	Breathing Zone	> 19.5%	Continue work
		< 19.5%	Stop work; withdraw from work area; notify PESM.
CGI	Excavation	< 10 % LEL	Continue work.
		Between 10% LEL and 20% LEL	Mitigate to 10% LEL. Stop Work if necessary.
		>20% LEL	STOP WORK AND EVACUATE CONTAINMENT STRUCTURE.
CO Meter	Breathing Zone	CO < 200 ppm	Continue work.
		CO > 200 ppm	Stop work. Continue monitoring, resume work when less than 200 ppm

7.2 Noise Monitoring

Work areas or tasks that pose an exposure risk greater than 85 dBA will require hearing protection. If there is a reasonable possibility that workers may be exposed to an 8-hour time-weighted average exceeding 85 dBA, noise monitoring will be conducted.

8.0 ZONES, PROTECTION, AND COMMUNICATION

8.1 Site Control

Site zones are intended to control the potential spread of contamination and to assure that only authorized individuals are permitted into potentially hazardous areas. A three-zone approach will be utilized. It will include an Exclusion Zone (EZ), Contamination Reduction Zone (CRZ) and a Support Zone (SZ). Specific zones will be established on the work Site when operations begin for each task requiring such delineation (i.e., slab cutting, excavation, trenching in impacted areas of the Site, materials staging, etc.). Maps delineating the various work zones will be available at the Site and used during initial Site-specific training.

This project is being conducted under the requirements of 29 CFR 1910.120, and any personnel working in an area where the potential for exposure to Site contaminants exists, will only be allowed access after proper training and medical documentation is provided to the SM. These records will be maintained by the SM and copies should be provided to the SM prior to mobilization for project activities.

The following will be used for guidance in revising these preliminary zone designations, if necessary:

- Support Zone (SZ) - The SZ is an uncontaminated area that will be the field support area for most operations. The SZ provides for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel/materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.
- Contamination Reduction Zone (CRZ) - The CRZ is established between the EZ and the SZ. The CRZ contains the contamination reduction corridor and provides an area for decontamination of personnel and portable hand-held equipment, tools and heavy equipment. A personnel decontamination area will be prepared at each exclusion zone. The CRZ will be used for Exclusion Zone entry and egress in addition to access for heavy equipment and emergency support services.
- Exclusion Zone (EZ) - All activities that may involve exposure to Site contaminants, hazardous materials and/or conditions should be considered an exclusion zone. This zone will be clearly delineated by cones, tapes or other means. The SM may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the Site SM allowing adequate space for the activity to be completed, field members and emergency equipment.

8.2 Contamination Control

8.2.1 Personnel Decontamination Station

Personnel hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure.

8.2.2 Minimization of Contact With Contaminants

During completion of all Site activities, personnel should attempt to minimize the degree of contact with contaminated materials. This involves a conscientious effort to keep "clean" during Site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination. This may ultimately minimize the degree of decontamination required and the generation of waste materials from Site operations.

Field procedures will be developed to control over spray and runoff and to ensure that unprotected personnel working nearby are not affected.

8.2.3 Personnel Decontamination Sequence

Consideration will be given to prevailing wind directions so that the decontamination line, the support zone, and contamination reduction zone exit is upwind from the exclusion zone and the first station of the decontamination line. Decontamination will be performed by removing all PPE used in EZ and placing in drums/trash cans within the CRZ. Baby wipes will be available for washing hands and face after PPE removal. In addition, brushes will be available for removing mud/soil from boots.

8.2.4 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination, wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment.

If the injured person can be moved, he/she will be moved to the EZ boundary and decontaminated by Site personnel as described above before emergency responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury) provisions shall be made to ensure that emergency response personnel will be able to respond to victim without being exposed to potentially hazardous atmospheric conditions. If the potential for inhalation hazards exist, such as with open excavation, this area will be covered with poly to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent chemical data.

8.2.5 Heavy Equipment Decontamination

Decontamination of chemically contaminated heavy equipment will be accomplished using high-pressure steam or dry decontamination with brushes and shovels. Decontamination shall take place on a decontamination pad and all liquids used in the decontamination procedure will be collected. Vehicles or equipment brought into an exclusion zone will be treated as contaminated, and will be decontaminated prior to removal. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE as prescribed in Table 2.

8.3 Communications

The following communications equipment shall be specified as appropriate:

- Telephones - A cellular telephone will be located in the SZ for communication with emergency support services/facilities and the home office. Personnel in the EZ can carry cellular telephones for communication as well if Level D PPE has been determined to be appropriate.

- Hand Signals - Hand signals shall be used by field teams along with the buddy system. They shall be known by the entire field team before operations commence and their use covered during Site-specific training. Typical hand signals are the following:

Signal	Meaning
Hand gripping throat	Out of air, can't breathe
Grip on a partner's wrist or placement of both hands around a partner's waist	Leave area immediately, no debate
Hands on top of head	Need assistance
Thumbs up	Okay, I'm all right, I understand
Thumbs down	No, negative

9.0 MEDICAL SURVEILLANCE PROCEDURES

All personnel performing field work where potential exposure to contaminants exists at the Site are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120(f) and, where applicable, expanded health standards.

9.1 Medical Surveillance Requirements

A physician's medical release for work will be confirmed by the SM before a worker can enter the exclusion zone. The medical release shall consider the type of work to be performed and the required PPE. The examination will be conducted annually at a minimum. Additional medical testing may be required by the PESM in consultation with the SM if an over-exposure or accident occurs, if an employee exhibits symptoms of exposure, or if other Site conditions warrant further medical surveillance.

10.0 SAFETY CONSIDERATIONS

10.1 High Loss Potential Hazards

Activities to be conducted at the Site may involve operations that have the potential for a serious injury to occur, to include the following:

- Lockout/Tagout
- Heavy Equipment Operation
- Excavation and Trenching
- Line Breaking

10.1.1 Lockout-Tagout

Site personnel will assume that all electrical equipment at surface and overhead locations is energized, until the equipment has been designated as de-energized by a qualified representative of the remedial contractor. If the equipment cannot de-energized, work will stop and the SM will consult with the PM, PESM, and Contractor. All applications of lockout devices shall be accomplished using procedures equivalent to those shown in The Control of Hazardous Energy Program "Lockout/Tagout" included in Appendix E.

All power lines which have been de-energized must be locked out, such that the lines cannot be energized when personnel are working near them. The lines shall not be unlocked and re-energized until both AKRF and the Contractor confirm that work is completed work in the area and that all personnel are clear of the area. The lockout procedures must be equivalent in effectiveness to those found in Appendix E.

If power lines cannot be de-energized, the SM will consult with ConEd to determine the safe working distance from the energized line. Work tasks will only commence after determination that a safe working distance can be maintained and all personnel working in the area have been informed of the limitation. Caution tape, other warning devices or physical barriers will be placed at the perimeter to the safe zone.

10.1.2 Heavy Equipment Operation

Working with large motor vehicles and heavy equipment (e.g., drill rig, excavator) could be a major hazard at this Site. Injuries can result from equipment hitting or running over personnel, impacts from flying objects, or overturning of vehicles. Vehicle and heavy equipment design and operation will be in accordance with 29 CFR, Subpart O, 1926.600 through 1926.602. In particular, the following precautions will be utilized to help prevent injuries/accidents:

- Brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, tires, horn, and other safety devices will be checked at the beginning of each shift
- The operation of heavy equipment will be limited to authorized personnel specifically trained in its operation. The contractor must provide this information to the SM.
- The operator will use the safety devices provided with the equipment, including seat belts. Backup warning indicates and horns will be operable at all times.
- While in operation, all personnel not directly required in the area will keep a safe distance from the equipment.
- A large construction motor vehicle will not be backed up unless it has a reverse signal alarm audible above the surrounding noise level; or it is backed up only when an observer signals that it is safe to do so.
- Personnel directly involved in activity will avoid moving in the path of operating equipment or any portion thereof. Areas blinded from the operator's vision will be avoided. Spotters will be used when personnel may be in areas where the operator’s view is obstructed.
- Heavy equipment cabs or motor vehicles will be kept free of all nonessential items, and all loose items will be secured.
- Large construction motor vehicles and heavy equipment will be provided with necessary safety equipment (such as seat belts, roll-over protection, emergency shut-off in case of roll-over, backup warning lights and audible alarms).
- Additional riders will not be allowed on equipment unless it is specifically designed for that purpose.

10.1.3 Excavation and Trenching

The safety requirements for each excavation must be determined by a competent person who is capable of identifying existing and predictable hazards and work conditions that are unsanitary, hazardous, or dangerous to employees. The competent person must also have the authorization to take prompt corrective measures to eliminate unsatisfactory conditions.

The following are general requirements for work activities in and around excavations:

- Prior to initiation of any excavation activity, the location of underground installations will be determined. The New York State one-call center will be contacted by the excavation subcontractor a minimum of 72 hours prior to excavation activities.
- All excavations will be inspected daily and after each period of rain by the competent person prior to commencement of work activities. Evidence of cave-ins, slides, sloughing, or surface cracks or excavations will be cause for work to cease until necessary precautions are taken to safeguard employees.
- Excavated and other materials or equipment that could fall or roll into the excavation shall be placed at least 5 feet from the edge of the excavation.
- Spoils and heavy equipment will be kept at least 5 feet from the edge to prevent cave-in.
- Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with CFR 1926.652 (b) or (c) except when excavations are less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in or excavation is made entirely in stable rock.
- Ladders will be positioned no further than 25 feet from the furthest individual working in the trench.

11.0 DISPOSAL PROCEDURES

All discarded materials, waste materials or other objects shall be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard or causing litter to be left on Site. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary, labeled and segregated for disposal. All non-contaminated materials shall be collected and bagged for appropriate disposal. The waste management procedures as specified in the applicable specifications and RAWP-Phase 1 for activities being performed, shall be complied with.

12.0 EMERGENCY RESPONSE / CONTINGENCY PLAN

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff are essential. Specific elements of emergency support procedures addressed in the following subsections include communications, local emergency support units, preparation for medical emergencies, first aid for injuries incurred on-Site, record keeping, and emergency Site evacuation procedures.

12.1 Responsibilities

12.1.1 Project Environmental and Safety Manager (PESM)

The PESM oversees and approves the Emergency Response/Contingency Plan and performs audits to determine that the plan is in effect and that all pre-emergency requirements are met. The PESM acts as a liaison to applicable regulatory agencies and notifies OSHA of reportable accidents.

12.1.2 Site Manager (SM)

The SM is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The SM is required to immediately notify the PM and PESM of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the PESM can notify OSHA within the required time frame. The PESM will be notified of all OSHA recordable injuries, fires, spills, releases or equipment damage in excess of $500 within 24 hours. The SM also serves as the Alternate Emergency Coordinator.

12.1.3 Emergency Coordinator

In the event of an emergency, the Emergency Coordinator, shall make contact with Local Emergency Response personnel. In these contacts, the Emergency Coordinator will inform response personnel about the nature of work on the Site, the type of contaminants and associated health or safety effects, and the nature of the emergency, particularly if it is related to exposure to contaminants.

The Emergency Coordinator shall review this plan and verify emergency phone numbers and identify hospital routes prior to beginning work on Site. The Emergency Coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator shall implement the Emergency Response/Contingency Plan whenever conditions at the Site warrant such action.

12.1.4 Site Personnel

Site personnel are responsible for knowing the Emergency Response/Contingency Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a Site emergency.

12.2 Communications

A variety of communication systems may be utilized during emergency situations. These are discussed in the following sections.

The primary form of communication during an emergency between field groups in the exclusion zone and the Emergency Coordinator will be verbal communications. During an emergency situation, the lines will be kept clear so that instructions can be received by all field teams.

12.2.1 Telephone Communications

A cellular telephone will be available on-Site.

12.2.2 Hand Signals

Hand signals will be employed by downrange field teams where necessary for communication during emergency situations. Hand signals are found in Section 8.3.

12.3 Pre-Emergency Planning

Before the field activities begin, the local emergency response personnel may be notified by the Owner's Representative or Owner's Contractor of the schedule for field activities and about the materials that are thought to exist on the Site so that they will be able to respond quickly and effectively in the event of a fire, explosion, or other emergency.

In order to be able to deal with any emergency that might occur during remedial activities at the Site, emergency telephone numbers will be readily available in the SM vehicle or the Site office. These telephone numbers are presented Section 12.16. The Emergency phone numbers listed are preliminary and will be updated as needed prior to the start of work. Immediately prior to mobilization the SM shall verify all numbers, and document any changes in the Site Logbook. Hospital route maps will also be readily available in the SM vehicle and/or Site office.

12.4 Emergency Medical Treatment

The procedures and rules in this HASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the SM immediately. First-aid equipment such as a first aid kit and disposable eye washes will be available on-Site.

During the Site safety briefing, project personnel will be informed of the location of the first aid station(s) that have been set up. In the case of a medical emergency, the SM will determine the nature of the emergency and he/she will have someone call for an ambulance, if needed. If the nature of the injury is not serious, i.e., the person can be moved without expert emergency medical personnel, he/she should be driven to a hospital by on-Site personnel. Directions to the hospital with a hospital route map are provided in Section 12.15. Unless they are in immediate danger, severely injured persons will not be moved until paramedics can attend to them. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the Site or before the injured person can be transported to the hospital, will be followed closely.

12.5 Emergency Site Evacuation Routes and Procedures

In the event of a Site Emergency that would require the evacuation of personnel, the Emergency Coordinator will immediately contact the Owner's Representative (this person may or may not be on-Site). All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial Site safety meeting. If an emergency occurs at the work area, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, immediate evacuation of all personnel is necessary due to an immediate or impending danger. The following evacuation procedures will be used:

- The Field Team Leader will initiate evacuation procedures by signaling to leave the Site or exclusion zone. The signal for Site evacuation will consist of three long blasts on an air horn.
- All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at a pre-determined meeting location. The designated meeting location for the Site will be at the sidewalk in front of the 142nd Street loading dock.

- All personnel suspected to be in or near the contract work area should be accounted for and the whereabouts or missing persons determined immediately.
- The Field Team Leader will then give further instruction.

If any task covered under this HASP has the potential for significant hazards, evacuation drills will be performed as deemed necessary by the SM and PESM.

12.6 Fire Prevention and Protection

In the event of a fire or explosion, the work area will be evacuated immediately and the Emergency Coordinator will notify the local fire and police departments. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

Fires will be prevented by adhering to the following precautions:

- Good housekeeping and storage of materials.
- Storage of flammable liquids and gases will be stored in flammable storage cabinets away from oxidizers when not in use.
- Oxygen will be stored at least 25 feet away from acetylene cylinders when not in use. Oxygen and acetylene may not be stored on welding carts.
- No smoking in the exclusion zone or any work area.
- No hot work without a properly executed hot work permit.
- Shutting off engines to refuel.
- Grounding and bonding metal containers during transfer of flammable liquids.
- Use of UL approved flammable storage cans.
- Fire extinguishers rated at least 10 pounds Class A, B, and C located on all heavy equipment, in all trailers and near all hot work activities.
- Monthly inspections of all fire extinguishers.

The Contractor is responsible for the maintenance of fire prevention and/or control equipment and the control of fuel source hazards.

12.7 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet will be followed as necessary. If first aid or emergency medical treatment is necessary, the Emergency Coordinator will contact the appropriate emergency facilities. All chemical exposure incidents must be reported in writing to the PESM. If a member of the field crew demonstrates symptoms of chemical exposure, another team member (buddy) should remove the individual from the immediate area of contamination. The buddy should communicate to the SM (via voice and hand signals) of the chemical exposure. The SM should contact the appropriate emergency response agency. The procedures outlined below should be followed:

SKIN AND EYE CONTACT:	Use copious amounts of soap and water. Wash/rinse affected areas thoroughly, and then provide appropriate medical attention. Eyes should be rinsed for 15 minutes upon chemical contamination. Skin should also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs.
INHALATION:	Move to fresh air. Decontaminate and transport to hospital or local medical provider.
INGESTION:	Decontaminate and transport to emergency medical facility.
PUNCTURE WOUND OR LACERATION:	Decontaminate and transport to emergency medical facility.

12.8 Personal Injury

In case of personal injury at the Site, the following procedures should be followed:

- Another team member (buddy) should signal the Field Team Leader that an injury has occurred.
- A field team member trained in first aid can administer treatment to an injured worker.
- If deemed necessary, the victim should then be transported to the nearest hospital or medical center. If necessary, an ambulance should be called to transport the victim.
- The Field Team Leader or FSO is responsible for making certain that an Incident Report Form is completed. This form is to be submitted to the AKRF HSO. Follow-up action should be taken to correct the situation that caused the accident.
- Any incident (near miss, property damage, first aid, medical treatment, etc.) must be reported.
- A first-aid kit, eye-wash, and blood-born pathogens kit will be kept on-Site during the field activities.

12.9 Decontamination During Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or postponed. The SM or designee will accompany contaminated victims to the medical facility to advise on matters involving decontamination, when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on Site, a plastic barrier between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

12.10 Accident/Incident Reporting

Written confirmation of verbal reports of injuries or other emergencies are to be submitted to the PESM within 24 hours. The accident/incident report form is found in Appendix F.

In addition to the incident reporting procedures and actions described in the HASP, the SM will coordinate with the Owner's Representative for reporting and notification for all environmental, safety, and other incidents.

If necessary, a Site safety briefing will be held to discuss accidents/incidents and any findings from the investigation of the incident. The HASP will be modified if deemed necessary by the PESM.

12.11 Spill Control and Response

All small hazardous spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining the best means of containment and cleanup. For small spills, absorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. Drains or drainage areas should be blocked. All spill containment materials will be properly disposed. An exclusion zone of 50-100 feet around the spill area should be established depending on the size and type of the spill.

The following steps should be taken by the Emergency Coordinator:

1. Determine the nature, identity and amounts of major spill components;
2. Make sure all unnecessary persons are removed from the spill area;
3. Notify appropriate response teams and authorities;
4. Use proper PPE in consultation with the SM;
5. If a flammable liquid, gas or vapor is involved, remove all ignition sources and use nonsparking and/or explosive proof equipment to contain or clean up the spill (diesel only vehicles, air operated pumps, etc.);
6. If possible, try to stop the leak with appropriate material;
7. Remove all surrounding materials that can react or compound with the spill; and,
8. Notify the Owner and determine who will report the spill to the NYSDEC Hotline, as applicable.

12.12 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on-Site:

- Industrial first aid kit
- Portable eye washes
- Fire extinguishers (one per vehicle and heavy equipment)
- Absorbent material

12.13 Postings

The following information shall be posted or be readily visible and available at conspicuous locations throughout the Site:

- Emergency telephone numbers

- Hospital Route Map

12.14 Restoration and Salvage

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers
- Refilling medical supplies
- Recharging eyewashes and/or showers
- Replenishing spill control supplies
- Replacing used air horns

12.15 Hospital Directions

The address and directions to the nearest hospital to the project Site are provided below:

Hospital Name:	Harlem Hospital Center
Phone Number:	(212) 939-1000
Address/Location:	506 Lenox Avenue – New York, New York. (Lenox Ave between 135th Street and 136th Street)
Directions:	RIGHT from Site onto West 142nd Street RIGHT on 5th Avenue to *West 135th Street* RIGHT onto *135th Street* RIGHT onto *Lenox Avenue* The hospital will be on the right

A map showing the Site evacuation meeting point and driving route to the hospital is provided as Figure 2.

12.16 Emergency Contacts

Company	Individual Name	Title	Contact Number
AKRF	Marc Godick	Project Director	914-922-2356 (office)
	Kathleen Brunner	Project Manager	646-388-9525 (office) 917-612-3990 (cell)
	Matt Oleske	SSO	646-388-9864 (office) 917-583-9403 (cell)
2350 Fifth Avenue Corporation	Joseph Karten	Client Representative	212-289-4551
NYSDEC	Bryan Wong	Project Manager	718-482-4905
NYSDOH	Dawn Hettrick	Project Manager	518-402-7880
Driller	To Be Determined		
Excavator	To Be Determined		
Ambulance, Fire Department & Police Department	-	-	911
NYSDEC Spill Hotline	-	-	800-457-7362

13.0 TRAINING

13.1 General Health and Safety Training

In accordance with 29 CFR 1910.120, hazardous waste Site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste Site operations unless otherwise noted in the above reference. At a minimum, the training will have consisted of instruction in the topics outlined in the standard. Personnel who have not met the requirements for initial training shall not be allowed to work in any Site activities during which they may be exposed to hazards (chemical or physical). Proof of training shall be submitted to the SM prior to the start of field activities. Other personnel involved in ancillary, or support activities, including transportation of material for disposal, shall have the proper training as required by Federal, State and local regulations.

13.2 Annual Eight-Hour Refresher Training

Annual eight-hour refresher training will be required of all hazardous waste Site field personnel in order to maintain their qualifications for fieldwork. The training will cover a review of 29 CFR 1910.120 requirements and related company programs and procedures.

13.3 Supervisor Training

Personnel acting in a supervisory capacity shall have received 8 hours of instruction in addition to the initial 40 hours training.

13.4 Site-Specific Training

Prior to commencement of field activities, all field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the Site operations. The training will cover Site and facility layout, hazards and emergency services, and all provisions contained within this HASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity. The training should include the following topics:

- General requirements of this HASP;
- Review of the scope of work;
- Names of personnel responsible for Site safety and health;
- Potential hazards and acute effects of compounds present at the Site;
- Air monitoring procedures;
- Proper use of personal protective equipment;
- Safe use of engineering controls and equipment on the Site;
- Decontamination procedures; and
- Work practices by which the employee can minimize risk from hazards. This may include a specific review of heavy equipment safety, safety during inclement weather, changes in common escape rendezvous point, Site security measures, or other Site-specific issues that need to be addressed before work begins.

Personnel that have not received Site-specific training will not be allowed in the work zone.

13.5 On-Site Safety Briefings

Project personnel and visitors will be given health and safety briefings periodically by the SM to assist Site personnel in safely conducting their work activities. The briefings will include information on new operations to be conducted, changes in work practices or changes in the Site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. The meetings will also be an opportunity to periodically update the crews on monitoring results.

13.6 First Aid and CPR

The SM will identify those individuals requiring first aid and CPR training in order to ensure that emergency medical treatment is available during field activities. The training will be consistent with the requirements of the American Red Cross Association.

14.0 LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping.

14.1 Medical and Training Records

Copies or verification of training (40 hour, 8 hour, supervisor, and Site-specific training) and medical clearance for hazardous waste Site work and respirator use will be maintained by the SM.

14.2 On-Site Log

A log of personnel on-Site each day will be kept by the SM in a field logbook.

14.3 Exposure Records

The SM will periodically notify the PESM of exposure monitoring results that require workers to upgrade to Level C. All personal monitoring results, laboratory reports, calculations and air sampling data sheets will be maintained by the SM during Site work.

14.4 Accident/Incident Reports

The incident reporting and investigation during Site work will be completed using an Incident Report Form, provided in Appendix F.

14.5 OSHA Form 300

An OSHA Form 300 will be kept at the home office. All recordable injuries or illnesses will be recorded on this form. The Incident Report Form in Appendix F meets the requirements of the OSHA Form 101(supplemental record) and must be must be copied to the home office for inclusion on the OSHA Form 300 for all recordable injuries or illnesses.

14.6 Hazard Communication Program/MSDS

Material Safety Data Sheets (MSDSs) will be obtained for applicable substances and included in the Site hazard communication file. The hazard communication program will be maintained onSite in accordance with 29 CFR 1910.1200.

14.7 Work Permits

All work permits, including lockout/tagout, sidewalk permits, and debris container permits (if necessary) will be maintained in the project files. Copies of the work permits shall also be provided to the SM, and the Owner’s Representative.

15.0 FIELD PERSONNEL REVIEW

This form serves as documentation that field personnel have read, or have been informed of, and understand the provisions of this HASP for the Site at 2350 Fifth Avenue, New York, NY. It is maintained on-Site by the SM as a project record. Each field team member shall sign this section after training in the contents of this HASP has been completed. Site workers must sign this form after Site-specific training is completed and before being permitted to work on-Site.

I have read, or have been informed of, the Health and Safety Plan and understand the information presented. I have also completed Site-specific training for the work detailed in the project Specifications. I will comply with the provisions contained therein.

NAME (PRINT AND SIGN)	DATE

I have read, or have been informed of, the Health and Safety Plan and understand the information presented. I have also completed Site-specific training for the work detailed in the project Specifications. I will comply with the provisions contained therein.

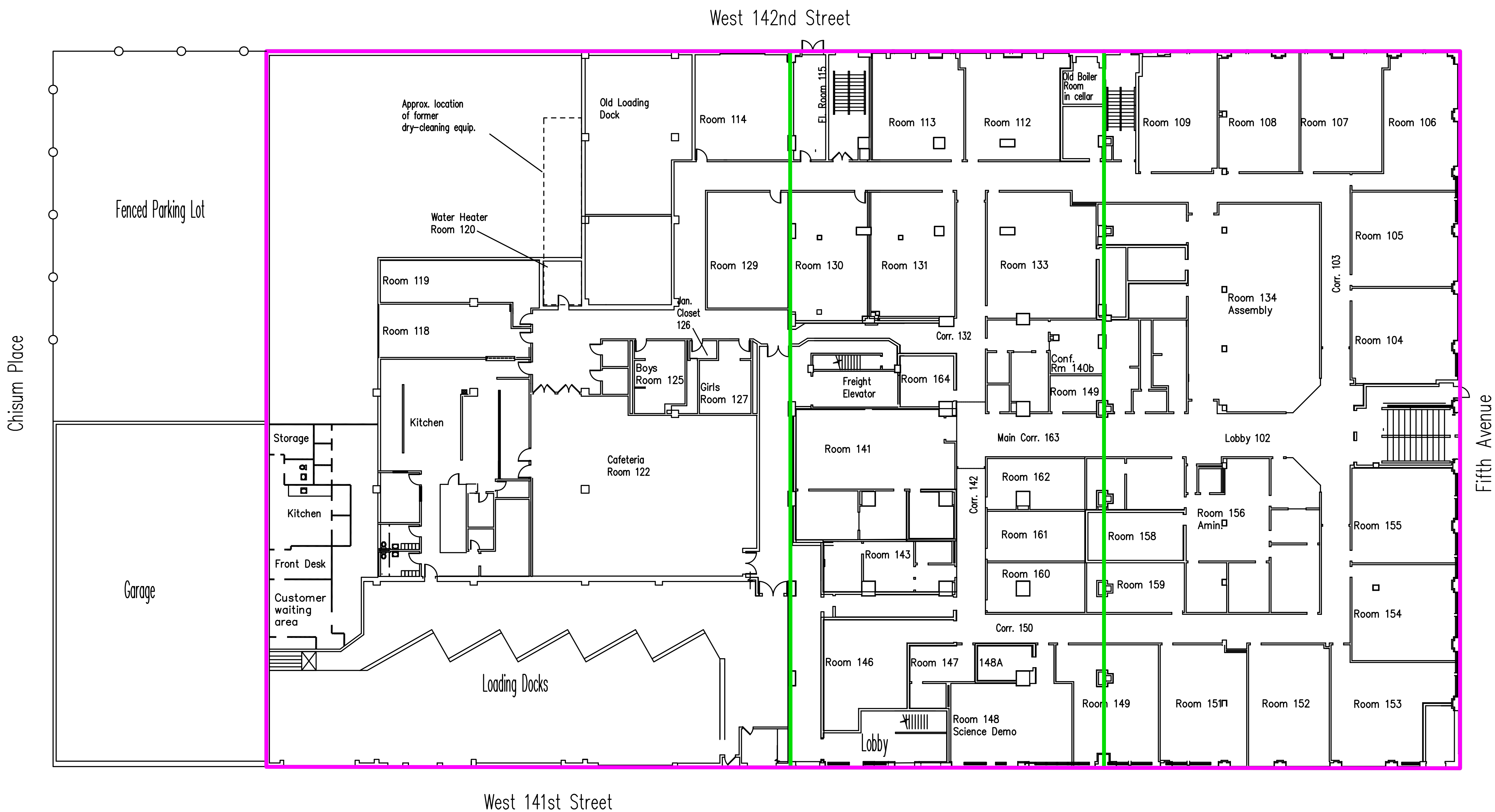
NAME (PRINT AND SIGN)	DATE

TABLES

TABLE 1
CHEMICAL DATA

Chemical	REL/PEL/STEL (ppm)	Health Hazards
Tetrachloroethene	PEL = 100 ppm Ceiling = 200 ppm Five minute max peak in any 3 hours = 300 ppm	High concentrations of tetrachloroethylene (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death.
Trichloroethene	PEL = 100 ppm Ceiling = 200 ppm Five minute max peak in any 3 hours = 300 ppm	Breathing small amounts may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts of trichloroethylene may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage. Drinking large amounts of trichloroethylene may cause nausea, liver damage, unconsciousness, impaired heart function, or death. Drinking small amounts of trichloroethylene for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear. Skin contact with trichloroethylene for short periods may cause skin rashes.
Dichloroethene	PEL = 100 ppm Ceiling = 200 ppm Five minute max peak in any 3 hours = 300 ppm	Breathing high levels of 1,2-dichloroethene can make you feel nauseous, drowsy, and tired; breathing very high levels can kill you. When animals breathed high levels of *trans*-1,2-dichloroethene for short or longer periods of time, their livers and lungs were damaged and the effects were more severe with longer exposure times. Animals that breathed very high levels of *trans*-1,2-dichloroethene had damaged hearts. Animals that ingested extremely high doses of *cis*- or *trans*-1,2-dichloroethene died. Lower doses of *cis*-1,2-dichloroethene caused effects on the blood, such as decreased numbers of red blood cells, and also effects on the liver. The long-term (365 days or longer) human health effects after exposure to low concentrations of 1,2-dichloroethene aren't known.
Vinyl Chloride	PEL = 1 ppm Ceiling = 5 ppm	Breathing high levels of vinyl chloride for short periods of time can cause dizziness, sleepiness, unconsciousness, and at extremely high levels can cause death. Breathing vinyl chloride for long periods of time can result in permanent liver damage, immune reactions, nerve damage, and liver cancer.
Particulate	PEL = 15 mg/m^3 (total) PEL = 5 mg/m^3(respirable)	Irritation eyes, skin, throat, upper respiratory system.
Carbon Monoxide	REL = 35 ppm PEL = 50 ppm Ceiling = 200 ppm	Headache, dizziness, nausea, weakness, loss of muscle control, shortness of breath, chest tightness, visual changes, sleepiness, fluttering of the heart, redness of the skin, confusion, slowed reaction time, altered driving skills, suffocation, brain damage, death.
Comments: REL = NIOSH Recommended Exposure Limit PEL = OSHA Permissible Exposure Limit STEL = OSHA Short Term Exposure Limit		

FIGURES



0' 15' 30' 60'
SCALE IN FEET

LEGEND:

- SITE BOUNDARY
- PRESUMED LOCATIONS OF BUILDING FOUNDATION WALLS
- FENCE

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

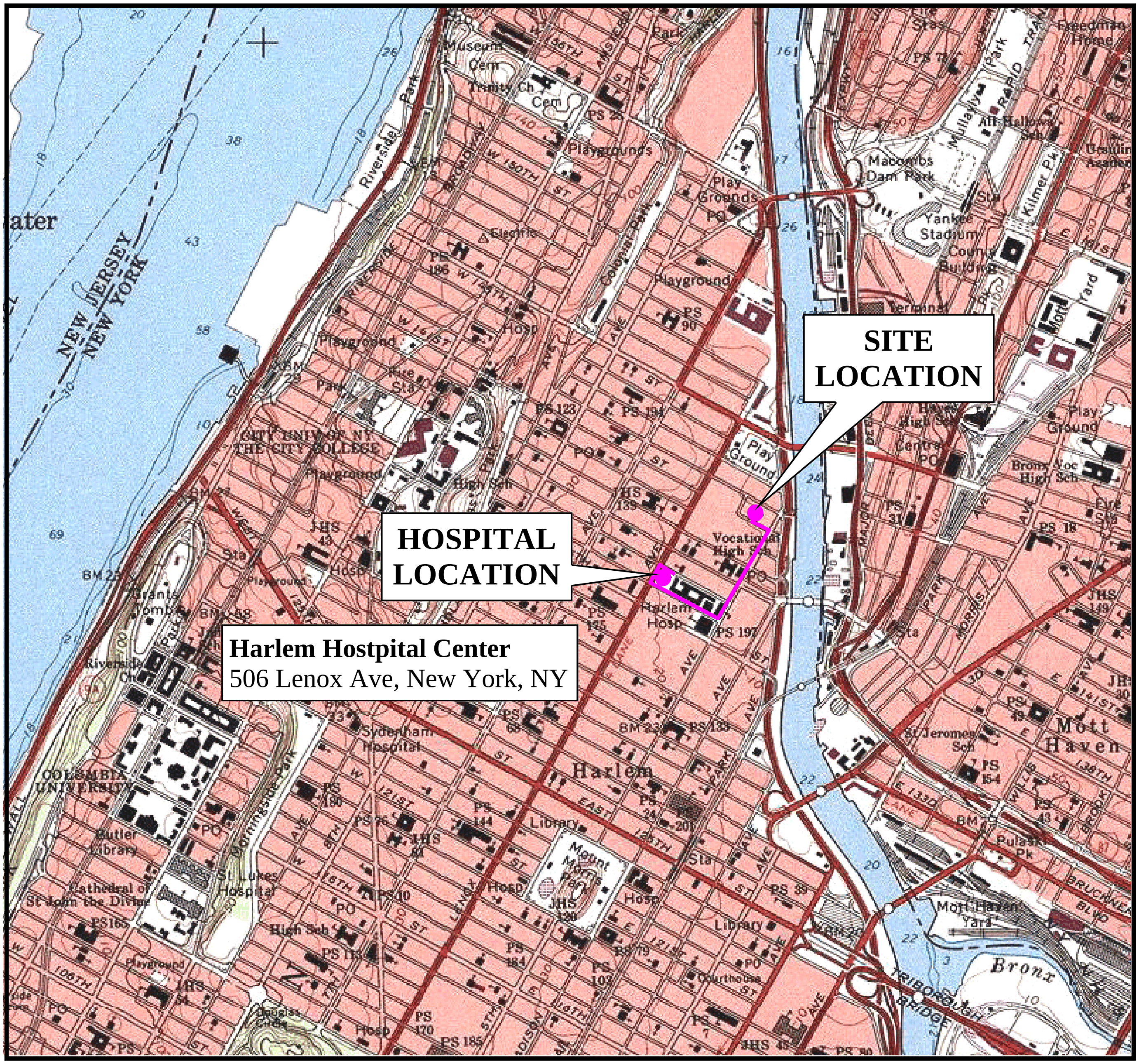
SITE PLAN

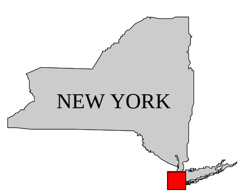
DATE
6.27.11

PROJECT NO.
08010

SCALE
1"=30'

FIGURE
1





SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

SOURCE:
7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: CENTRAL PARK, NY 1995

2350 FIFTH AVENUE
NEW YORK, NEW YORK

HOSPITAL LOCATION MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**10.30.07**
PROJECT No.	**08010**
SCALE	**AS SHOWN**
FIGURE	**2**

APPENDIX A

ASTDR CHEMICAL FACT SHEETS

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

CARBON MONOXIDE

CAS # 630-08-0

Division of Toxicology and Environmental Medicine ToxFAQs™ **September 2009**

This fact sheet answers the most frequently asked health questions (FAQs) about carbon monoxide. For more information, call the ATSDR Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: All people are exposed to carbon monoxide at varying levels by breathing in air. Breathing in high amounts of carbon monoxide may be life-threatening. People with ongoing cardiovascular and/or respiratory disease may be particularly vulnerable to carbon monoxide. This chemical has been found in at least 12 of the 1,699 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is carbon monoxide?

Carbon monoxide is a colorless, nonirritating, odorless, tasteless gas that is found in both indoor and outdoor air. It is made when carbon fuel is not burned completely and is produced from both human-made and natural sources. The most important human-made source is from exhaust of automobiles.

Carbon monoxide levels in indoor air vary depending on the presence of appliances such as kerosene and gas space heaters, furnaces, wood stoves, generators and other gasoline-powered equipment. Tobacco smoke also contributes to indoor air levels.

Industry uses carbon monoxide to manufacture compounds such as acetic anhydride, polycarbonates, acetic acid and polyketone.

What happens to carbon monoxide when it enters the environment?

❑ Carbon monoxide mainly enters the environment from natural sources and from the burning of fuel oils.
❑ It stays in the air for about 2 months.
❑ It is broken down in air by reacting with other chemicals and is changed into carbon dioxide.
❑ It is broken down in soil by microorganisms into carbon dioxide.
❑ It does not build up in plants or in the tissues of animals.

How might I be exposed to carbon monoxide?

❑ Breathing in gas from improperly installed/filtered stoves, furnaces, heaters and generators.
❑ Breathing air containing automobile exhaust.
❑ Breathing air containing cigarette smoke.
❑ Working in industries that burn gas and coal, working in smoke-filled places, or working in places where there are high amounts of vehicular exhaust.

How can carbon monoxide affect my health?

Exposure to high levels of carbon monoxide can be life-threatening. Carbon monoxide poisoning is the leading cause of death due to poisoning in the United States.

Headache, nausea, vomiting, dizziness, blurred vision, confusion, chest pain, weakness, heart failure, difficulty breathing, seizures and coma have been reported in people inhaling carbon monoxide. People who have heart or lung disease are more vulnerable to the toxic effects of carbon monoxide.

How likely is carbon monoxide to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified carbon monoxide for human carcinogenicity.

How can carbon monoxide affect children?

Breathing high levels of carbon monoxide during pregnancy can cause miscarriage. Breathing lower levels of carbon monoxide during pregnancy can lead to slower than normal mental development of your child.

In animal studies, exposure to carbon monoxide during pregnancy had effects on birth weight, the heart, the central nervous system, and development.

There is evidence that children who have asthma may be more vulnerable to respiratory effects associated with exposure to carbon monoxide.

How can families reduce the risk of exposure to carbon monoxide?

- ❑ Make sure appliances that burn natural gasoline, kerosene, or other fuels are properly installed and vented.
- ❑ Have appliances routinely maintenanced.
- ❑ Always follow the manufacturer's recommendations on installing and using these devices.
- ❑ Do not use portable propane heaters in enclosed indoor settings such as campers and tents.
- ❑ Do not let your car run idle for a long period of time in your garage.
- ❑ Carbon monoxide is a component of tobacco smoke. Avoid smoking in enclosed spaces like inside the home or car in order to limit exposure to children and other family members.
- ❑ Have carbon monoxide and smoke detectors installed in your home.

Is there a medical test to determine whether I've been exposed to carbon monoxide?

Medical devices called carbon monoxide-oximeters that are found in clinical laboratories or hospitals can estimate the level of carbon monoxide in blood by a simple test.

Has the federal government made recommendations to protect human health?

The EPA has established an environmental limit of 10 mg/m^3 (9 ppmv) of carbon monoxide in air averaged over 8 hours and not to be exceeded more than once per year.

The Occupational Safety and Health Administration (OSHA) has set a legal limit of 55 mg/m^3 (50 ppmv) for carbon monoxide in air for an 8-hour work day, 40 hour workweek.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2009. Toxicological Profile for Carbon Monoxide (Draft for Public Comment). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-62, Atlanta, GA 30333. Phone: 1-800-232-4636, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

VINYL CHLORIDE
CAS # 75-01-4

Division of Toxicology and Environmental Medicine ToxFAQs™ **July 2006**

This fact sheet answers the most frequently asked health questions (FAQs) about vinyl chloride. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to vinyl chloride occurs mainly in the workplace. Breathing high levels of vinyl chloride for short periods of time can cause dizziness, sleepiness, unconsciousness, and at extremely high levels can cause death. Breathing vinyl chloride for long periods of time can result in permanent liver damage, immune reactions, nerve damage, and liver cancer. This substance has been found in at least 616 of the 1,662 National Priority List sites identified by the Environmental Protection Agency (EPA).

What is vinyl chloride?

Vinyl chloride is a colorless gas. It burns easily and it is not stable at high temperatures. It has a mild, sweet odor. It is a manufactured substance that does not occur naturally. It can be formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC). PVC is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Vinyl chloride is also known as chloroethene, chloroethylene, and ethylene monochloride.

What happens to vinyl chloride when it enters the environment?

❑ Liquid vinyl chloride evaporates easily. Vinyl chloride in water or soil evaporates rapidly if it is near the surface.
❑ Vinyl chloride in the air breaks down in a few days to other substances, some of which can be harmful.
❑ Small amounts of vinyl chloride can dissolve in water.
❑ Vinyl chloride is unlikely to build up in plants or animals that you might eat.

How might I be exposed to vinyl chloride?

❑ Breathing vinyl chloride that has been released from plastics industries, hazardous waste sites, and landfills.
❑ Breathing vinyl chloride in air or during contact with your skin or eyes in the workplace.
❑ Drinking water from contaminated wells.

How can vinyl chloride affect my health?

Breathing high levels of vinyl chloride can cause you to feel dizzy or sleepy. Breathing very high levels can cause you to pass out, and breathing extremely high levels can cause death.

Some people who have breathed vinyl chloride for several years have changes in the structure of their livers. People are more likely to develop these changes if they breathe high levels of vinyl chloride. Some people who work with vinyl chloride have nerve damage and develop immune reactions. The lowest levels that produce liver changes, nerve damage, and immune reaction in people are not known. Some workers exposed to very high levels of vinyl chloride have problems with the blood flow in their hands. Their fingers turn white and hurt when they go into the cold.

The effects of drinking high levels of vinyl chloride are unknown. If you spill vinyl chloride on your skin, it will cause numbness, redness, and blisters.

Animal studies have shown that long-term exposure to vinyl chloride can damage the sperm and testes.

How likely is vinyl chloride to cause cancer?

The U.S. Department of Health and Human Services has determined that vinyl chloride is a known carcinogen. Studies in workers who have breathed vinyl chloride over many years showed an increased risk of liver, brain, lung cancer, and some cancers of the blood have also been observed in workers.

How can vinyl chloride affect children?

It has not been proven that vinyl chloride causes birth defects in humans, but studies in animals suggest that vinyl chloride might affect growth and development. Animal studies also suggest that infants and young children might be more susceptible than adults to vinyl chloride-induced cancer.

How can families reduce the risk of exposure to vinyl chloride?

Tobacco smoke contains low levels of vinyl chloride, so limiting your family's exposure to cigarette or cigar smoke may help reduce their exposure to vinyl chloride.

Is there a medical test to show whether I've been exposed to vinyl chloride?

The results of several tests can sometimes show if you have been exposed to vinyl chloride. Vinyl chloride can be measured in your breath, but the test must be done shortly after exposure. This is not helpful for measuring very low levels of vinyl chloride.

The amount of the major breakdown product of vinyl chloride, thiodiglycolic acid, in the urine may give some information about exposure. However, this test must be done shortly after exposure and does not reliably indicate the level of exposure.

Has the federal government made recommendations to protect human health?

Vinyl chloride is regulated in drinking water, food, and air. The EPA requires that the amount of vinyl chloride in drinking water not exceed 0.002 milligrams per liter (mg/L) of water.

The Occupational Safety and Health Administration (OSHA) has set a limit of 1 part vinyl chloride per 1 million parts of air (1 ppm) in the workplace.

The Food and Drug Administration (FDA) regulates the vinyl chloride content of various plastics. These include plastics that carry liquids and plastics that contact food. The limits for vinyl chloride content vary depending on the nature of the plastic and its use.

Reference

Agency for Toxic Substances and Disease Registry (ATSDR). 2006. Toxicological Profile for Vinyl Chloride (Update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

TRICHLOROETHYLENE

CAS # 79-01-6

Division of Toxicology ToxFAQs™ **July 2003**

This fact sheet answers the most frequently asked health questions (FAQs) about trichloroethylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Trichloroethylene is a colorless liquid which is used as a solvent for cleaning metal parts. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. Trichloroethylene has been found in at least 852 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is trichloroethylene?

Trichloroethylene (TCE) is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste. It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers.

Trichloroethylene is not thought to occur naturally in the environment. However, it has been found in underground water sources and many surface waters as a result of the manufacture, use, and disposal of the chemical.

What happens to trichloroethylene when it enters the environment?

- Trichloroethylene dissolves a little in water, but it can remain in ground water for a long time.
- Trichloroethylene quickly evaporates from surface water, so it is commonly found as a vapor in the air.
- Trichloroethylene evaporates less easily from the soil than from surface water. It may stick to particles and remain for a long time.
- Trichloroethylene may stick to particles in water, which will cause it to eventually settle to the bottom sediment.
- Trichloroethylene does not build up significantly in plants and animals.

How might I be exposed to trichloroethylene?

- Breathing air in and around the home which has been contaminated with trichloroethylene vapors from shower water or household products such as spot removers and typewriter correction fluid.
- Drinking, swimming, or showering in water that has been contaminated with trichloroethylene.
- Contact with soil contaminated with trichloroethylene, such as near a hazardous waste site.
- Contact with the skin or breathing contaminated air while manufacturing trichloroethylene or using it at work to wash paint or grease from skin or equipment.

How can trichloroethylene affect my health?

Breathing small amounts may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating.

Breathing large amounts of trichloroethylene may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage.

Drinking large amounts of trichloroethylene may cause nausea, liver damage, unconsciousness, impaired heart function, or death.

Drinking small amounts of trichloroethylene for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear.

Skin contact with trichloroethylene for short periods may cause skin rashes.

How likely is trichloroethylene to cause cancer?

Some studies with mice and rats have suggested that high levels of trichloroethylene may cause liver, kidney, or lung cancer. Some studies of people exposed over long periods to high levels of trichloroethylene in drinking water or in workplace air have found evidence of increased cancer. Although, there are some concerns about the studies of people who were exposed to trichloroethylene, some of the effects found in people were similar to effects in animals.

In its 9th Report on Carcinogens, the National Toxicology Program (NTP) determined that trichloroethylene is "reasonably anticipated to be a human carcinogen." The International Agency for Research on Cancer (IARC) has determined that trichloroethylene is "probably carcinogenic to humans."

Is there a medical test to show whether I've been exposed to trichloroethylene?

If you have recently been exposed to trichloroethylene, it can be detected in your breath, blood, or urine. The breath test, if it is performed soon after exposure, can tell if you have been exposed to even a small amount of trichloroethylene.

Exposure to larger amounts is assessed by blood and urine tests, which can detect trichloroethylene and many of its breakdown products for up to a week after exposure. However, exposure to other similar chemicals can produce the same breakdown products, so their detection is not absolute proof of exposure to trichloroethylene. This test isn't available at most doctors' offices, but can be done at special laboratories that have the right equipment.

Has the federal government made recommendations to protect human health?

The EPA has set a maximum contaminant level for trichloroethylene in drinking water at 0.005 milligrams per liter (0.005 mg/L) or 5 parts of TCE per billion parts water.

The EPA has also developed regulations for the handling and disposal of trichloroethylene.

The Occupational Safety and Health Administration (OSHA) has set an exposure limit of 100 parts of trichloroethylene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogenicity: The ability of a substance to cause cancer.
CAS: Chemical Abstracts Service.
Evaporate: To change into a vapor or gas.
Milligram (mg): One thousandth of a gram.
Nonflammable: Will not burn.
ppm: Parts per million.
Sediment: Mud and debris that have settled to the bottom of a body of water.
Solvent: A chemical that dissolves other substances.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Trichloroethylene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs™ Internet address is http://www.atsdr.cdc.gov/toxfaq.html . ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

TETRACHLOROETHYLENE
CAS # 127-18-4

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1997**

This fact sheet answers the most frequently asked health questions (FAQs) about tetrachloroethylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Tetrachloroethylene is a manufactured chemical used for dry cleaning and metal degreasing. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Tetrachloroethylene has been found in at least 771 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is tetrachloroethylene?
(Pronounced tĕt′rə-klôr′ ō-ĕth′ə-lēn′)

Tetrachloroethylene is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. It is also used to make other chemicals and is used in some consumer products.

Other names for tetrachloroethylene include perchloroethylene, PCE, and tetrachloroethene. It is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor. Most people can smell tetrachloroethylene when it is present in the air at a level of 1 part tetrachloroethylene per million parts of air (1 ppm) or more, although some can smell it at even lower levels.

What happens to tetrachloroethylene when it enters the environment?

- Much of the tetrachloroethylene that gets into water or soil evaporates into the air.
- Microorganisms can break down some of the tetrachloroethylene in soil or underground water.
- In the air, it is broken down by sunlight into other chemicals or brought back to the soil and water by rain.
- It does not appear to collect in fish or other animals that live in water.

How might I be exposed to tetrachloroethylene?

- When you bring clothes from the dry cleaners, they will release small amounts of tetrachloroethylene into the air.
- When you drink water containing tetrachloroethylene, you are exposed to it.

How can tetrachloroethylene affect my health?

High concentrations of tetrachloroethylene (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death.

Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used tetrachloroethylene to get a "high."

In industry, most workers are exposed to levels lower than those causing obvious nervous system effects. The health effects of breathing in air or drinking water with low levels of tetrachloroethylene are not known.

Results from some studies suggest that women who work in dry cleaning industries where exposures to tetrachloroethylene can be quite high may have more menstrual problems and spontaneous abortions than women who are not exposed. However, it is not known if tetrachloroethylene was responsible for these problems because other possible causes were not considered.

Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that tetrachloroethylene can cause liver and kidney damage. Exposure to very high levels of tetrachloroethylene can be toxic to the unborn pups of pregnant rats and mice. Changes in behavior were observed in the offspring of rats that breathed high levels of the chemical while they were pregnant.

How likely is tetrachloroethylene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that tetrachloroethylene may reasonably be anticipated to be a carcinogen. Tetrachloroethylene has been shown to cause liver tumors in mice and kidney tumors in male rats.

Is there a medical test to show whether I've been exposed to tetrachloroethylene?

One way of testing for tetrachloroethylene exposure is to measure the amount of the chemical in the breath, much the same way breath-alcohol measurements are used to determine the amount of alcohol in the blood.

Because it is stored in the body's fat and slowly released into the bloodstream, tetrachloroethylene can be detected in the breath for weeks following a heavy exposure.

Tetrachloroethylene and trichloroacetic acid (TCA), a breakdown product of tetrachloroethylene, can be detected in the blood. These tests are relatively simple to perform. These tests aren't available at most doctors' offices, but can be performed at special laboratories that have the right equipment.

Because exposure to other chemicals can produce the same breakdown products in the urine and blood, the tests for breakdown products cannot determine if you have been exposed to tetrachloroethylene or the other chemicals.

Has the federal government made recommendations to protect human health?

The EPA maximum contaminant level for the amount of tetrachloroethylene that can be in drinking water is 0.005 milligrams tetrachloroethylene per liter of water (0.005 mg/L).

The Occupational Safety and Health Administration (OSHA) has set a limit of 100 ppm for an 8-hour workday over a 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends that tetrachloroethylene be handled as a potential carcinogen and recommends that levels in workplace air should be as low as possible.

Glossary

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Milligram (mg): One thousandth of a gram.

Nonflammable: Will not burn.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Tetrachloroethylene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

1,1-DICHLOROETHENE
CAS # 75-35-4

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1995**

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1-dichloroethene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to 1,1-dichloroethene occurs mainly in the workplace. Breathing high levels of 1,1-dichloroethene can affect the liver, kidney, and central nervous system. This chemical has been found in at least 515 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is 1,1-dichloroethene?
(Pronounced 1,1-dī′klôr′ō ĕth′ēn)

1,1-Dichloroethene is an industrial chemical that is not found naturally in the environment. It is a colorless liquid with a mild, sweet smell. It is also called vinylidene chloride.

1,1-Dichloroethene is used to make certain plastics, such as flexible films like food wrap, and in packaging materials. It is also used to make flame retardant coatings for fiber and carpet backings, and in piping, coating for steel pipes, and in adhesive applications.

What happens to 1,1-dichloroethene when it enters the environment?

- 1,1-Dichloroethene enters the environment from industries that make or use it.
- 1,1-Dichloroethene evaporates very quickly from water and soil to the air.
- In the air, it takes about 4 days for it to break down.
- 1,1-Dichloroethene breaks down very slowly in water.
- It does not accumulate very much in fish or birds.
- In soil, 1,1-dichloroethene is slowly transformed to other less harmful chemicals.

How might I be exposed to 1,1-dichloroethene?

- Workers may be exposed in industries that make or use 1,1-dichloroethene (these industries are mainly in Texas and Louisiana).
- Food that is wrapped in plastic wrap may contain very low levels of 1,1-dichloroethene. The government controls these levels to prevent harm to your health.
- A small percentage (3%) of the drinking water supplies may contain very low levels of 1,1-dichloroethene.
- Air near factories that make or use 1,1-dichloroethene and air near hazardous waste sites may contain low levels of it.

How can 1,1-dichloroethene affect my health?

The main effect from breathing high levels of 1,1-dichloroethene is on the central nervous system. Some people lost their breath and fainted after breathing high levels of the chemical.

Breathing lower levels of 1,1-dichloroethene in air for a long time may damage your nervous system, liver, and lungs. Workers exposed to 1,1-dichloroethene have reported a loss in liver function, but other chemicals were present.

Animals that breathed high levels of 1,1-dichloroethene had damaged livers, kidneys, and lungs. The offspring of some of the animals had a higher number of birth defects. We do not know if birth defects occur when people are exposed to 1,1-dichloroethene.

Animals that ingested high levels of 1,1-dichloroethene had damaged livers, kidneys, and lungs. There were no birth defects in animals that ingested the chemical.

Spilling 1,1-dichloroethene on your skin or in your eyes can cause irritation.

How likely is 1,1-dichloroethene to cause cancer?

The Environmental Protection Agency (EPA) has determined that 1,1-dichloroethene is a possible human carcinogen.

Studies on workers who breathed 1,1-dichloroethene have not shown an increase in cancer. These studies, however, are not conclusive because of the small numbers of workers and the short time studied.

Animal studies have shown mixed results. Several studies reported an increase in tumors in rats and mice, and other studies reported no such effects.

Is there a medical test to show whether I've been exposed to 1,1-dichloroethene?

Tests are available to measure levels of 1,1-dichloroethene in breath, urine, and body tissues. These tests are not usually available in your doctor's office. However, a sample taken in your doctor's office can be sent to a special laboratory if necessary.

Because 1,1-dichloroethene leaves the body fairly quickly, these methods are useful only for finding exposures that have occurred within the last few days. These tests can't tell you if adverse health effects will occur from exposure to 1,1-dichloroethene.

Has the federal government made recommendations to protect human health?

The EPA has set a limit in drinking water of 0.007 parts of 1,1-dichloroethene per million parts of drinking water (0.007 ppm). EPA requires that discharges or spills into the environment of 5,000 pounds or more of 1,1-dichloroethene be reported.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 1 ppm of 1,1-dichloroethene in workplace air for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) currently recommends that workers breathe as little 1,1-dichloroethene as possible.

Glossary

Carcinogen: A substance that can cause cancer.
CAS: Chemical Abstracts Service.
Ingesting: Taking food or drink into your body.
ppm: Parts per million.
Tumor: An abnormal mass of tissue.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1994. Toxicological profile for 1,1-dichloroethene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

APPENDIX B

COLD STRESS PROGRAM

1.0 PURPOSE & INTRODUCTION

The purpose of this document is to educate the employee about exposure to cold environments and the effects of hypothermia and other cold-related injuries. Through proper use of Personal Protective Equipment (PPE); engineering and administrative controls; and education, cold injury, both to the extremities and the body's core temperature, can be prevented.

2.0 SCOPE

This program is intended for use by employees engaged in work with the potential for exposure to cold environments. Training will be provided annually to all those potentially affected prior to the start of field work potentially involving cold exposure.

3.0 WORKING IN COLD ENVIRONMENTS

3.1 Metabolic Responses

The human body is designed to function best at a rectal temperature of 99-100F. The body maintains this temperature in two ways: by gaining heat from food and muscular work; or, by losing it through radiation and sweating. By constricting blood vessels of the skin and/or shivering, the body uses its first line of cold defense.

Temperature control of the body is better understood by dividing the body into two main parts: the shell; and, the core. The shell is comprised of the skin, capillaries, nerves, muscles and fat. Other internal organs such as the heart, lungs, brain and kidneys make up the core.

During exposure to cold, the skin is first affected. Blood in the peripheral capillaries is cooled, sending a signal to a portion of the brain called the hypothalamus. Regulating body temperature is one of the many basic body functions of the hypothalamus. Acting like a thermostat, adjustments are performed in order to maintain normal body temperatures. When a chill signal is received, two processes are begun by the hypothalamus: conserve heat already in the body; and, generate new heat.

Heat conservation is performed through constriction of the blood vessels in the skin (shell), thus reducing heat loss from the shell and acting as an insulator for the core. Sweat glands are also inhibited, thus preventing heat loss by evaporation.

Additional fuel for the body is provided in the form of glucose. Glucose causes the heart to beat faster, sending oxygen and glucose-rich blood to the tissue where needed. In an attempt to produce heat, the muscles rapidly contract. This process is better known as "shivering", and generates heat similarly to that created by strenuous activity, raising the body's metabolic rate.

During physical activity and fatigue, the body is more prone to heat loss. As exhaustion approaches, blood vessels can suddenly enlarge, resulting in rapid loss of heat. Exposure to extreme cold causes nerve pulses to be slowed, resulting in fumbling, sluggish and clumsy reactions.

4.0 COLD INJURIES

Cold injuries are classified into two categories: local; or, general. Local injuries include frostbite, frostnip, chilblain and trenchfoot. General injuries include hypothermia and blood vessel abnormalities (genetically or chemically induced). Factors contributing to cold injury include: exposure to humidity and high winds; contact with wetness or metal; inadequate clothing; age; and, general health. Allergies, vascular disease, excessive smoking and/or drinking, and certain drugs and medicines are physical conditions that can compound the effects of exposure to a cold environment.

4.1 Hypothermia

Hypothermia is a condition of reduced body temperature. Most cases develop in air temperatures between 30-50°F, not taking wind-chill factor in consideration.

Symptoms of hypothermia are uncontrolled shivering and the sensation of cold. The heartbeat slows and sometimes becomes irregular, weakening the pulse and changing blood pressure. Changes in the body chemistry cause severe shaking or rigid muscles; vague or slow slurred speech; memory lapses; incoherence; and drowsiness. Cool skin, slow irregular breathing, low blood pressure, apparent exhaustion, and fatigue after rest can be seen before complete collapse.

As the core temperature drops, the victim can become listless, confused, and make little or no effort to keep warm. Pain in the extremities can be the first warning of dangerous exposure to cold. Severe shivering must be taken as a sign of danger. At a core body temperature of about 85°F, serious problems develop due to significant drops in blood pressure, pulse rate and respiration. In some cases, the victim may die.

Sedative drugs and alcohol increase the risk of hypothermia. Sedative drugs interfere with the transmission of impulses to the brain. Alcohol dilates blood vessels near the skin's surface, increasing heat loss and lowering body temperature.

Table I provides information on the onset of hypothermia and metabolic responses at different body temperatures.

4.2 Raynaud's Phenomenon

Raynaud's Phenomenon is the abnormal constriction of the blood vessels of the fingers on exposure to cold temperatures, resulting in blanching of the ends of the fingers. Numbness, itching, tingling or a burning sensation may occur during related attacks. The disease is also associated with the use of vibrating hand tools in a condition sometimes called White Finger Disease. Persistent cold sensitivity, ulceration and amputations can occur in severe cases.

4.3 Acrocyanosis

Acrocyanosis is caused by exposure to the cold and reduces the level of hemoglobin in the blood, resulting in a slightly blue, purple or gray coloring of the hands and/or feet.

4.4 Thromboangitis Obliterans

Thromboangitis obliterans is clotting of the arteries due to inflammation and fibrosis of connective tissue surrounding medium-sized arteries and veins. This is one of the many disabling diseases that can also result from tobacco use. Gangrene of the affected limb often requires amputation.

4.5 Frostbite

Frostbite is the freezing of the body tissues due to exposure to extremely low temperatures, resulting in damage to and loss of tissue. Frostbite occurs because of inadequate circulation and/or insulation, resulting in freezing of fluids around the cells of the body tissues. Most vulnerable parts of the body are the nose, cheeks, ears, fingers and toes.

Frostbite can affect outer layers of skin or can include the tissues beneath. Damage can be serious, with permanent loss of movement in the affected parts, scarring, necrotic tissue, and amputation are all possibilities. Skin and nails that slough off can grow back.

The freezing point of the skin is about 30F. As wind velocity increases, heat loss is greater and frostbite will set in more rapidly.

There are three degrees of frostbite: first degree, freezing without blistering and peeling; second degree, freezing with blistering and peeling; and, third degree, freezing with death of skin tissues and possibly the deeper tissues.

The following are symptoms of frostbite:

1. Skin changes color to white or grayish-yellow, progresses to reddish-violet, and finally turns black as the tissue dies;
2. Pain may be felt at first, but subsides;
3. Blisters may appear;
4. Affected part is cold and numb.

The first symptom of frostbite is usually an uncomfortable sensation of coldness followed by numbness. Tingling, stinging, cramping and aching feelings will be experienced by the victim. Frostbite of the outer layer of the skin has a waxy or whitish look and is firm to the touch. Cases of deep frostbite cause severe injury. The tissues are cold, pale and solid. The victim is often unaware of the frostbite until someone else observes these symptoms. It is therefore important to use the "buddy system" when working in cold environments, so that any symptoms of overexposure can be noted.

Table II describes the cooling power of wind on exposed flesh. This information can be used as a guide for determining equivalent chill temperatures when the wind is present in cold environments.

4.6 Trench Foot and Chilblains

Trench foot is swelling of the foot caused by long, continuous exposure to cold without freezing, combined with persistent dampness or immersion in water. Edema (swelling), tingling, itching and severe pain occurs, followed by blistering, necrotic tissue and ulcerations. Chilblains have similar symptoms as trench foot, except that other areas of the body are affected.

4.7 Frostnip

Frostnip occurs when the face or extremities are exposed to a cold wind, causing the skin to turn white.

5.0 PREVENTION OF COLD STRESS

Cold stress can be prevented through a combination of various factors: acclimation; water and salt displacement; medical screening; proper clothing selection; and training and education. Through the use of engineering controls, work practices, work/rest schedules, environmental monitoring and consideration of the wind-chill temperature, the employee can be protected.

5.1 Acclimation

Acclimation can be achieved to some degree. Sufficient exposure to cold causes the body to undergo changes to increase comfort and reduce the risk of injury. However, these changes are minor and require repeated exposure to cold and uncomfortable temperatures to induce them.

5.2 Dehydration

The dryness of cold air causes the body to lose a significant amount of water through the skin and lungs. It is essential that caffeine-free, non-alcoholic beverages be available at the workSite for fluid replacement. Dehydration also increases the risk of injury due to cold and affects blood flow to the extremities.

5.3 Diet

A well-balanced diet is important for employees working in cold environments. Diets restricted only to certain foods may not provide the necessary elements for the body to withstand cold stress, leaving the worker vulnerable.

5.4 Control Measures

When the windchill factor results in an equivalent temperature of -26F, continuous exposure of the skin will not be permitted. Any worker exposed to temperatures of 36F or less who becomes immersed in water will be given dry clothing immediately and treated for hypothermia at the local hospital if any symptoms of hyperthermia are present. Notification of this incident will be provided to the Health and Safety Division immediately after sending the worker to the hospital.

5.5 Engineering Controls

The following are some ways that environmental controls can be used to reduce the effects of a cold environment:

1. General or spot heating should be used to increase temperature in certain areas in the workplace;
2. Warm air jets, radiant heaters or contact warm plates can be used to warm the worker's hands if fine work is to be performed with bare hands for 10 to 20 minutes or more;
3. Shield the work area if air velocity at the work Site is increased by wind, draft or ventilating equipment;
4. Metal handles of tools and control bars should be covered with thermal insulating material at temperatures below 30F;
5. Unprotected metal chair seats will not be used in cold environments;
6. When appropriate and feasible, equipment and processes will be substituted, isolated, relocated, or redesigned;
7. Power tools, hoists, cranes or lifting aids will be used to reduce the metabolic workload;

8. Heated warming shelters will be made available for continuous work being performed in an equivalent temperature of 20F or below, workers will be encouraged to use the shelters regularly; and
9. Administrative work practice controls.

Work practices and guidelines can be designed and developed to reduce exposure to cold stress. Some of these may include:

1. Work-rest schedules to reduce the peak of cold stress;
2. Enforce scheduled breaks;
3. Enforce intake of caffeine-free, non-alcoholic beverages;
4. Schedule work that has potential exposure to cold stress for the warmest part of the day;
5. Move work to warmer areas, whenever possible;
6. Assign extra workers for high-demand tasks;
7. Provide relief workers for other workers needing breaks;
8. Teach basic principles of recognizing and preventing cold stress;
9. Use the buddy system for work at 10F or below, and keep within eyeshot;
10. Allow new employees to adjust to the conditions before they work full-time in cold environments;
11. Minimize sitting and standing in one place for long periods of time;
12. Include weight and bulkiness of clothing when estimating work performance requirements and weights to be lifted;

Table III provides a work/warm-up schedule for cold environments, with wind chill taken into account.

5.6 Special Considerations

Older workers and workers with circulatory problems should be extra careful in cold environments. Sufficient sleep and good nutrition are important preventive measures for maintenance tolerance to the cold. Double shifts and overtime work should be avoided when working in cold environments.

If any of the following symptoms are observed on Site, the affected worker will immediately go to warm shelter:

- Onset of heavy shivering;
- Frostnip;
- Feeling of excessive fatigue;
- Drowsiness;
- Euphoria.

After entering the warm shelter, the outer layer of clothing should be removed. If the clothing is wet from sweat and perspiration, dry clothing should be provided. If this is not feasible, then the clothing should be loosened to allow sweat to evaporate.

Anyone working in cold environments and on prescribed medication should consult their physician concerning any possible side effects due to cold stress. Those individuals suffering from diseases and/or taking medication that interferes with normal body temperature regulation or reduces the tolerance to cold will not be allowed to work in temperatures of 30F or below.

6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

In choosing PPE for cold environments, it is important to maintain airspace between the body and outer layer of clothing to retain body heat. The more air pockets, the better the insulation. The clothing should also allow for the evaporation of sweat if the skin is wet.

The most important parts of the body to protect are the feet, hands, head and face. Hands and feet become cooled most easily, because of their distance from the heart. Keeping the head covered is equally important. As much as 40% of body heat loss is through the head when it is exposed.

Ideal clothing for exposure to cold environments is made of wool, polypropylene, or other wicking fabrics. Loosely fitted clothing also aids in sweat evaporation. Recommended clothing may include the following:

1. Polypropylene under shirt and shorts under thermal underwear (preferably two-piece);
2. Wool socks;
3. Wool or thermal pants, lapped over boot tops to keep out snow and water;
4. Suspenders (belts can constrict and reduce circulation);
5. Insulated work boots, preferably waterproof. Safety toe, if necessary;
6. Wool or cotton shirt;
7. Parka;
8. Knit cap/hard hat liner;
9. Wool mittens or gloves (depending on the dexterity required);
10. Face mask or scarf.

Dirty or greasy clothing loses much of its insulation value. Dirty clothing crushes air pockets, allowing air to escape more easily. Also, denim is not a good protective fabric. It is loosely woven and allows water to penetrate and wind to blow away body heat.

TABLE I

PROGRESSIVE CLINICAL PRESENTATION OF HYPOTHERMIA*

Core Temperature		Clinical Signs
Deg. C	**Deg. F**	
37.6	99.6	"Normal" Rectal Temperature
37	98.6	"Normal" Oral Temperature
36	96.8	Metabolic rate increases in an attempt to compensate for heat loss.
35	95.0	Maximum shivering.
34	93.2	Victim conscious and responsive, with normal blood pressure.
33	91.4	Severe hypothermia below this temperature.
32	89.6	Consciousness clouded, blood pressure becomes difficult to obtain, Pupils dilated but react to light, shivering ceases.
31	87.8	
30	86.0	Progressive loss of consciousness, muscular rigidity increases, Pulse and blood pressure difficult to obtain, respiratory rate decreases
29	84.2	
28	82.4	Ventricular fibrillation possible with myocardial irritability.
27	80.6	Voluntary motion ceases, pupils non-reactive to light, deep tendon And superficial reflexes absent.
26	78.8	
25	77.0	Ventricular fibrillation may occur spontaneously.
24	75.2	Pulmonary edema.
22	71.6	Maximum risk of ventricular fibrillation.
20	68.0	Cardiac standstill.
18	64.4	Lowest accidental hypothermia victim to recover.
17	62.6	Isoelectric electroencephalogram.
9	48.2	Lowest artificially cooled hypothermia patient to recover.

* Presentations approximately related to core temperature. Reprinted from the January 1982 issue of American Family Physician, published by the American Academy of Family Physicians.

TABLE II

Cooling Power of Wind on Exposed Flesh as Equivalent Temperature

(Under calm conditions)*

Estimated Wind Speed (mph)	Actual Temperature Reading (Degrees Fahrenheit)											
	50	**40**	**30**	**20**	**10**	**0**	**-10**	**-20**	**-30**	**-40**	**-50**	**-60**
	Equivalent Chill Temperature (□F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect).	LITTLE DANGER In < hr with dry skin. Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute.			GREAT DANGER Flesh may freeze within 30 seconds.				

* Developed by the U.S. Army Research Institute of Environmental Medicine, Natick, MA

Note #1: Wind speeds greater than 40 mph have little additional effect.

Note #2: Trenchfoot and immersion foot may occur at any point on this chart

TABLE III

Threshold Limit Values Work/Warm-up Schedule for 4-Hour Shift (*)

Air Temp.-Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
˚C (approx)	˚F (approx)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	-15° to -19°	(Norm. Breaks)	1	(Norm.Breaks)	1	75 min.	2	55 min.	3	40 min.	4
-29° to -31°	-20° to -24°	(Norm. Breaks)	1	75 min	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	-25° to -29°	75 min	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35° to -37°	-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38° to -39°	-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -42°	-40° to -44°	30 min.	5	Non-emergency work should cease							
-43° & below	-45° & below	Non-emergency work should cease									

Notes for TABLE III:

1. Schedule applies to moderate to heavy work activity with warm-up breaks of 10 minutes in a warm location. For light to moderate work (limited physical motion), apply the schedule one step lower. For example, at -30F with no noticeable wind (step 4, a worker at a job with little physical movement should have a maximum work period of 40 minutes with 4 breaks in a 4 hour period.

2. The following is suggested as a guide for estimating wind velocity if accurate information is not available: 5 mph, light flag moves; 10 mph, light flag fully extended; 15 mph, raises newspaper sheet; 20 mph, blowing drifting snow.

3. If only the wind-chill cooling rate is available, a rough rule of thumb for applying it rather than the temperature and wind velocity factors given above would be: 1) special warm-up breaks should be initiated at a wind-chill cooling rate of about 17 W/m2; 2) all non-emergency work should have ceased at or before a wind-chill of 2250 W/m2. In general the warm-up schedule provided above slightly under-compensates for the wind at the warmer temperatures, assuming acclimatization and clothing appropriate for winter work. On the other hand, the chart over-compensates for the actual temperatures in the colder ranges, since windy conditions prevail at extremely low temperatures.

4. TLVs apply only for workers in dry clothing.

* Adapted from Occupational Health and Safety Division, Saskatchewan Department of Labour.

APPENDIX C

HEAT STRESS PROGRAM

1.0 INTRODUCTION

Heat stress is one of the most common (and potentially serious) illnesses at job Sites. Although it is caused by a number of interacting factors, the wearing of PPE puts the worker at a much higher risk during warmer environmental conditions. The results of heat stress range from fatigue to serious illness or death. Through regular fluid replacement and other preventive measures, heat stress can be controlled, leading to increased efficiency and a higher level of safety on the job.

2.0 PURPOSE

To create an awareness among employees concerning the body's physiologic responses to heat; different types of heat stress that can affect the body; recognition of signs and symptoms; first aid treatment; and, preventive measures.

3.0 SOURCES OF HEAT

There are two sources of heat that are important to anyone working in a hot environment:

- Internally generated metabolic heat;
- Externally imposed environmental heat.

4.0 PHYSIOLOGIC RESPONSES TO HEAT

The human body maintains a fairly constant internal temperature, even though it is exposed to varying environmental temperatures. To keep internal body temperatures within safe limits, the body must get rid of its excess heat, primarily through varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by the sweat glands. These automatic responses usually occur when the temperature of the blood exceeds 98.6°F and are kept in balance and controlled by the brain. In this process of lowering internal body temperature, the heart begins to pump more blood, blood vessels expand to accommodate the increased flow, and the microscopic blood vessels (capillaries) which thread through the upper layers of the skin begin to fill with blood. The blood circulates closer to the surface of the skin, and the excess heat is lost to the cooler environment.

If the heat loss from increased blood circulation through the skin is not adequate, the brain continues to sense overheating and signals the sweat glands in the skin to release large quantities of sweat onto the skin surface. Evaporation of sweat cools the skin, eliminating large quantities of heat from the body.

As environmental temperatures approach normal skin temperature, cooling of the body becomes more difficult. If air temperature is as warm as or warmer than the skin, blood brought to the body surface cannot lose its heat. Under these conditions, the heart continues to pump blood to the body surface, the sweat gland pour liquids containing electrolytes onto the surface of the skin, and the evaporation of the sweat becomes the principal effective means of maintaining a constant body temperature. Sweating does not cool the body unless the moisture is removed from the skin by evaporation. In high humidity, the evaporation of sweat from the skin is decreased and the body's efforts to maintain an acceptable body temperature may be significantly impaired. These conditions adversely affect an individual's ability to work in the hot environment. With so much blood going to the external surface of the body, relatively less goes to the active muscles, the brain, and other internal organs; strength declines; and fatigue occurs sooner than it would otherwise. Alertness and mental capacity also may be affected. Workers who must perform delicate or detailed work may find their accuracy suffering, and others may find their comprehension and retention of information lowered.

When temperature differences exist between two or more bodies, heat can be transferred. Net heat transfer is always from the body (or object) of higher temperature to that of lower temperature and occurs by one or more of the following mechanisms:

- Conduction. The transfer of heat from one point to another within the body, or from one body to another when both bodies are in physical contact. Conduction can be a localized source of discomfort from direct physical contact with a hot or cold surface, it is normally not a significant factor to total heat stress.
- Convection. The transfer of heat from one place to another by moving gas or liquid. Natural convection results from differences in density caused by temperature differences. Thus warm air is less dense than cool air.
- Radiation. The process by which energy, electromagnetic (visible and infrared), is transmitted through space without the presence or movement of matter in or through this space.

5.0 PREDISPOSING FACTORS TO HEAT STRESS

Factors that may predispose an individual to heat stress vary according to the individual. These factors include:

- Lack of physical fitness;
- Lack of acclimatization;
- Age;
- Dehydration;
- Obesity;
- Drug/alcohol abuse;
- Infection;
- Sunburn;
- Diarrhea;
- Chronic disease.

Predisposing factors and an increased risk of excessive heat stress are both directly influenced by the type and amount of PPE worn. PPE adds weight and bulk, reduces the body's access to normal heat exchange mechanisms (evaporation, convection and radiation) and increases energy expenditure.

6.0 FORMS OF HEAT STRESS AND FIRST AID

(The following excerpts were taken from NIOSH Publication No. 86-112, Working in Hot Environments):

"Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders. Among the most common are heat stroke, heat exhaustion, heat cramps, fainting and heat rash.

6.1 Heat Stroke

Heat Stroke is the most serious of health problems associated with working in hot environments. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. The body's only effective means of removing excess heat is compromised with little warning to the victim that a crisis stage has been reached.

A heat stroke victim's skin is hot, usually dry, red or spotted. Body temperature is usually 105°F or higher, and the victim is mentally confused, delirious perhaps in convulsions, or unconscious. Unless the victim receives quick and appropriate treatment, death can occur.

Individuals with signs or symptoms of heat stroke require immediate hospitalization. First aid should be immediately administered. This includes removing the victim to a cool area, thoroughly soaking the clothing with water, and vigorously fanning the body to increase cooling. Further treatment, at a medical facility, should be directed to the continuation of the cooling process and the monitoring of complications that often accompany heat stroke. Early recognition and treatment are the only means of preventing permanent brain damage or death.

6.2 Heat Exhaustion

Heat Exhaustion includes several clinical disorders having symptoms that may resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of fluid by sweating, sometimes with excessive loss of salt. A worker suffering from heat exhaustion still sweats but experiences weakness or fatigue, giddiness, nausea or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal or only slightly elevated.

In most cases, treatment involves having the victim rest in a cool place and drink plenty of liquids. Victims with mild cases of heat exhaustion usually recover spontaneously with this treatment. Those with severe cases may require extended care for several days. There are no known permanent effects.

6.3 Heat Cramps

Heat cramps are painful spasms of the muscles that occur among those who sweat profusely in heat, drink large quantities of water, but do not adequately replace the body's salt loss. The drinking of large amounts of water tends to dilute the body's fluids, while the body continues to lose salt. Shortly after, the low salt level in the muscles causes painful cramps. The affected muscles may be part of the arms, legs, or abdomen; but tired muscles (those used in performing the work) are usually the ones most susceptible to cramps. Cramps may occur during or after work hours and may be relieved by taking salted liquids by mouth.

6.4 Fainting

Fainting occurs in workers not accustomed to hot environments and who stand erect and immobile in the heat.

With enlarged blood vessels in the skin and in the lower part of the body due to the body's attempts to control internal temperature, blood may pool there rather than return to the heart to be pumped to the brain. Upon lying down, the worker should soon recover. By moving around, and thereby preventing blood from pooling, the patient can prevent further fainting.

6.5 Heat Rash (Prickly Heat)

Heat rash, also known as prickly heat, is likely to occur in hot, humid environments where sweat is not as easily removed from the surface of the skin by evaporation and the skin remains wet most of the time. The sweat ducts become plugged, and a skin rash soon appears. When the rash is extensive or when it is complicated by infection, prickly heat can be very uncomfortable and may reduce a worker's performance. The worker can prevent this condition by resting in a cool place part of each day and by regularly bathing and drying the skin."

7.0 SELECTION OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

During work periods where the increased risk of heat stress exists, each item's benefit will be carefully evaluated. Once the PPE is chosen, safe work durations/rest periods will be determined based on the following conditions:

- Anticipated work rate;
- Ambient temperature and humidity;
- Level of protection.

8.0 PREVENTION OF HEAT STRESS

Prevention of heat stress will be addressed in the following manner:

- Adjustment of work schedules.
- Modify work/rest schedules.
    1. Enforce work slowdowns, as needed.
    2. Rotate personnel to minimize overstress or overexertion.
    3. When possible, work will be scheduled and performed during cooler hours.
- Provide shelter or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels.
    1. Drink approximately 12 to 16 ounces of non-caffeinated liquid (preferably water, Gatorade or equivalent) prior to the start of work. Caffeinated fluids act to dehydrate the worker.
    2. Workers will be urged to drink a cup or two every 15 to 20 minutes, or at each break. A total of 1 to 1.5 gallons of water per individual per day are recommended for fluid replacement under heat stress conditions, but more may be required.
- Encourage physical fitness among the workers.
- Gradually acclimatize workers on Site to help build up an "immunity" to the conditions.
    1. Heat acclimatization can usually be induced in 5 to 7 days of exposure at a hot job. For workers with previous experience with the job, acclimatization will include exposures of 50% for day 1, 60% for day 2, 80% for day 3, and 100% for the remaining additional days.

- Provide cooling devices during prolonged work or severe heat exposure.
    1. Supply field showers or hose down areas.
    2. Supply personnel with cooling jackets, vests, and suits.

- Train workers in recognition and treatment of heat stress.
- Use of the buddy system that depends on the recognition of signs and symptoms of heat stress.

Identification of heat-intolerant individuals through medical screening.

APPENDIX D

MONITORING INSTRUMENTS: USE, CARE, AND CALIBRATION

1.0 INTRODUCTION

Prior to beginning any work at contaminated Sites, a preliminary Site evaluation must be conducted to identify the hazards or suspected hazards of the Site. Hazardous conditions can be evaluated via air monitoring with direct-reading instruments, to allow section of the proper level of protection for the specific type of work activity. Monitoring equipment used by AKRF personnel includes the following: Carbon Monoxide/Oxygen/Combustible Gas Meters (CGI); Photoionization Detectors (PID); and Dust Monitors. This program contains a description of each type of monitoring equipment; hazards for which it can be used to monitor; Applications; Care and Maintenance; Limitations; and, Calibration.

2.0 SCOPE

This program covers the use, application, care and maintenance, limitations and calibration of CGIs, Multigas meters, PIDs and Dust Monitors used by AKRF employees involved in hazardous materials operations.

3.0 INSTRUMENTATION

3.1 Photoionization Detectors (PIDs)

3.1.1 Introduction

PIDs measure a variety of gases in many industrial, as well as hazardous material, operations. These analyzers employ the principle of photoionization, which is the absorption of ultraviolet light by molecules, for detection.

The sensor consists of a sealed ultraviolet light. The energy ionizes many trace species (particularly organics) but does not ionize the major components of air, such as O_2, N_2, CO, CO_2, or H_2O. A chamber adjacent to the ultraviolet source contains a pair of electrodes. When a positive potential is applied to one electrode, the field created drives any ions, which are formed by absorption of the UV light, to the collector electrode, where the current (proportional to the concentration) is measured.

To minimize absorption of various sample gases, the ion chamber is made up of an inert fluorocarbon material, located at the sampling point, and a rapid flow of sampling gas is maintained through the small ion chamber volume.

The analyzer will operate either from a rechargeable battery for up to 10 hours, or continuously from the AC battery charger.

The useful linear range of the instrument is from a fraction of a part per million (PPM) to about 2000 PPM.

3.1.2 Theory

AKRF utilizes the Thermo 580B Organic Vapor Meter (OVM) as its PID. The 580B OVM is a portable, non-specific vapor/gas detector, which employs the principle of photoionization to detect a variety of organic chemical compounds.

The 580B contains an ultraviolet light source within its sensor chamber. Ambient air is drawn into the chamber with the aid of a small fan or positive displacement pump. If the ionization potential (IP) of any contaminant present in the ambient air is equal to or lower than the energy of the UV light source, ionization will take place, causing a deflection in the meter.

The 580B OVM readings are expressed in parts per million (PPM) relative to the calibration gas. All readings must be stated as equivalent readings that depend on the calibration gas being used to calibrate the meter. The calibration gas used is Isobutylene, which is used as an equivalent in place of benzene, and allows the instrument to provide results in benzene equivalents.

3.1.3 Basic Operation of the 580B OVM

A sample of air is drawn through a chamber and an ultraviolet light causes certain contaminants present to be broken apart into positive and negative charged particles. These charged particles are passed between electrodes and converted into an electrical impulse displayed on the readout.

3.1.4 Checkout and Use Procedures

Attach the probe to the readout assembly. Turn the instrument on by inserting the power plug into the "RUN/CHG" connector and pressing the ON/OFF button on the key pad. Listen for the humming of the pump. Hold a permanent marker to the probe tip to make sure it is working properly.

3.1.5 Field Applications/Limitations

- The 580B OVM will only detect organic materials with an ionization potential less than 10.2eV, unless a lamp with a higher eV is installed.
- It is a non-specific detection device, but provides continuous information on airborne concentrations.
- It will not respond equally to all contaminants, and does not detect methane.
- High humidity will cause the instrument to give lower readings than the actual airborne concentration.
- Transfer of the instrument from a cold to a warm environment may cause condensation to form on the UV light source window, causing erroneous results.
- The readout may also be affected by electrical power lines or power transformers.
- Total concentrations are relative to the calibration gas used (isobutylene). Therefore, true concentrations cannot be identified.

3.1.6 Calibration Procedure

Calibration Checklist: 580B OVM (probe and meter); span gas (100 PPM isobutylene); regulator; tygon tubing; Tedlar bag.

Inventory Items: Battery; Lamp; ION chamber; O-Rings; Screws.

- Obtain calibration gas: Zero Gas and 100 PPM isobutylene Span Gas.
- Connect the Zero Gas to a dedicated 1-liter Tedlar bag using tygon tubing. Open the gas regulator and the sample bag valve. Allow the bag to fill with gas, then

close the gas regulator and the sample bag valve. Follow the same procedures to fill a dedicated Tedlar bag with Span Gas.

- Put the 580B into calibration mode in accordance with the instruction manual toggle press the +/INC button until it displays "Zero Gas/Reset When Ready". Connect the Tedlar bag containing Zero Gas to the probe tip (using the Tygon tubing), open the gas regulator and sample bag valve, and press the "Reset" button on the OVM. The instrument will read "Model 580B Zeroing". Once the instrument is finished zeroing, it will read "Span PPM = 100". (If it does not read 100 PPM, consult the instruction manual to change the span gas value).
- Press the +/INC button, and the instrument should read "Span Gas/Reset When Read". Connect the Tedlar bag containing Span Gas to the probe tip (using the Tygon tubing), open the gas regulator and sample bag valve, and press the "Reset" button on the OVM. The instrument will read "Model 580B Calibrating". Once the instrument is finished calibrating, it will return to the beginning of the calibration mode and will read "Reset to Calibrate".

3.1.7 Maintenance and Calibration Records

- Protect the instrument from excessive abuse, such as moisture, shock, vibration, etc.
- Maintenance and calibration records will be recorded in a logbook specific to the OVM.

3.1.8 Troubleshooting

Below are some points that should be considered if the instrument is not running appropriately:

- Check the battery condition. Recharge it if necessary.
- If unstable readings are obtained, a faulty probe cable or electrical connection could be the problem. To check this, hold the probe normally and flex the cable firmly. Watch the meter needle for fluctuations as the cable is flexed. Individual wires in the readout can be checked in a similar way.
- Check the coaxial connector on the amplifier board in the probe for any separation.
- No response on any setting may mean that the meter movement is broken. Tip the instrument from side-to-side. The needle should move freely and return to zero.
- No response may mean that the electrical connection to the meter is broken. Check all wires leading to the meter and clean the contacts of the quick-disconnects.
- No response may mean that the battery is completely dead. Disconnect the battery and check the voltage with a volt-ohm meter. Also check the 2-amp fuse.
- If the instrument responds correctly in all settings, but the signal is lower than expected:

    1. Check the span setting.

2. Clean the window of the light source.
3. Check the fan for proper insertion.

- If the instrument response is slow and/or not reproducible, either the pump is operating improperly or the instrument needs to be recalibrated.

A low battery indication comes on if the battery charge is low. It will also come on if the ionization voltage is too high.

3.2 MultiGas Meter

Combination meters measure the concentration of combustible gas or vapor present in an area, as well as the oxygen, carbon monoxide, and hydrogen sulfide content. The LEL concentrations are reported as a percent, and the O_2, CO, and H_2S concentrations are reported in ppm. Although it is an easy instrument to operate, its effective use requires that the operator understand the operating principles and procedures behind the instrument. Certain atmospheres may cause erroneous readings or damage to the instrument. Typically, the instrument can be used as long as the battery lasts, or for the recommended interval between calibrations.

3.2.1 Detection Method

AKRF uses the Rae Systems Q-Rae or similar as a multi-gas meter. The Q-Rae uses four different sensors to measure a variety of gases. A catalytic bead sensor is used to measure combustible gases, and an electrochemical sensor is used to measure oxygen concentration. Electrochemical, toxic-gas sensors are used to measure CO and H_2S. A diaphragm pump draws the air sample into the sensor manifold and then distributes it to all sensors.

3.2.2 Maintenance

Maintenance of combination meters is fairly simple. Batteries must be recharged at the end of a continuous day's use. Occasionally, the rechargeable battery must be replaced. Most batteries last for approximately 2 years of continued use. Also, oxygen and combustible gas sensors will need to be replaced periodically. These sensors last approximately 1-2 yrs with continued use. Sensors that can no longer be calibrated within the manufacturers' acceptable range indicate the need for replacement.

If, after an attempted calibration, the instrument cannot be calibrated due to problems other than the need for battery or sensor replacement, the problem must be reported to the Facility Manager immediately, so that the instrument can be sent out for repair.

3.2.3 Calibration

The Q-Rae is calibrated using a two-point calibration process using “fresh air” and the standard reference gas. First, “fresh air” containing 20.9% oxygen and no detectable toxic or combustible gasses is used to set the zero point for the LEL, CO and H_2S sensors and the span for the O_2 sensor. Then a standard reference gas, containing a known concentration of each given gas, is used to set the second point of reference for the first 3 sensors. The two-point calibration procedure is detailed in the instrument manual. Calibration should be performed each day that the Q-Rae is used using manufacturer-recommended zero and calibration gasses.

3.2.4 Limitations

The combination meter contains some inherent limitations. Knowledge of these limitations will help the user make an educated decision regarding the accuracy of the instrument.

Accuracy of the instrument depends, in part, on the difference between the calibration and sampling temperatures. Differences in temperature may cause a lack of sensitivity in the instrument when brought from a warm to a cold environment.

The filament can be damaged by certain compounds such as silicones, halides, tetraethyl lead, and oxygen enriched atmospheres. Each manufacturer's instrument handbook should contain a listing of compounds that should not be sampled with this instrument, or serious damage could result.

Under oxygen deficient atmospheres, the oxygen analyzer must be read first. Otherwise, the CGM analyzer may not provide a valid reading and give the user a false sense of security.

3.3 Dust Meter

AKRF uses a TSI DustTrak as a dust meter. The DustTrak is a single channel basic photometric instrument used to determine the mass concentration of aerosols in real time.

3.3.1 Theory of Operation

The DustTrak measures particulates by drawing aerosols into the sensing chamber in a continuous stream using a diaphragm pump. Part of the aerosol stream is split ahead of the sensing chamber and passed through a HEPA filter and injected back in to the chamber around the inlet nozzle as sheath flow. The remaining flow, called the sample flow passes through the inlet entering the sensing chamber. Here, it is illuminated by a sheet of laser light. This sheet of laser light is formed from a laser diode. First, the light emitted from the laser diode passes through a collimating lens and then through a cylindrical lens to create a thin sheet of light. A gold coated spherical mirror captures a significant fraction of the light scattered by the particles and focuses it on to a photo detector. The voltage across the photo detector is proportional to the mass concentration of the aerosol over a wide range of concentrations. The voltage is then multiplied by a calibration constant which is determined from the ratio of a known mass concentration of the test aerosol to the voltage response of the DustTrak.

3.3.2 Maintenance

The DustTrak requires maintenance on a regular basis, in accordance with the factory recommended maintenance schedule listed in the instrument manual. Some maintenance items are required each time the DustTrak monitor is used or on an annual basis. Other items are scheduled according to how much aerosol is drawn through the instrument. For example, cleaning the inlet sample tube is recommended after 350 hours of sampling a 1 mg/m^3 concentration of aerosol. This recommendation should be pro-rated according to how the instrument is used as specified in the manual. The following table summarizes the recommended maintenance schedule assuming that particulates are drawn through the meter at an average concentration of 1 mg/m^3:

Item	**Frequency**
Clean 1.0 µm nozzle	Every 5 hours
Clean 2.5 µm nozzle	Every 30 hours
Clean 10 µm nozzle, inlet, and sample tube	Every 350 hours
Replace internal filters	Every 700 hours
Clean cyclone	Before each use
Return to factory for cleaning and calibration	Annually

The DustTrak monitor keeps track of the accumulated amount of aerosol drawn through it since its last cleaning. When sample tube cleaning or internal filter replacement is due, the display shows the message “Service 4” or “Service 5” respectively, during power-up. Press any key to bypass the message, but be sure to perform the maintenance procedures at your earliest convenience.

3.3.3 Zero Checking/Re-Zeroing

The manufacturer recommends that the DustTrak be zero-checked each day it is used, before running any extended tests, and after the instrument experiences a significant environmental change. Examples of significant environmental changes would be ambient temperature changes that exceed 15 °F (8 °C) or moving from locations with high aerosol concentrations to low concentrations. The Zero-Check procedures are as follows:

- Put the DustTrak monitor in Survey mode.
- Put zero filter on aerosol sample inlet.
- Set the time-constant to 10 seconds. Press and hold the TIME CONSTANT key until “10” is displayed, then release.
- Wait 10 to 60 seconds for displayed values to settle to zero.
- If the displayed value is between -0.001 and +0.001 mg/m3, the DustTrak monitor does not need adjustment. If the displayed value exceeds this limit, follow steps 7 to 9 below to re-zero the instrument. Press and hold the CALIBRATE key and wait for the displayed countdown to reach 0, then immediately release the key. The message “CALIBRATE ZERO” is displayed. If not, try again.
- Press the SAMPLE key and wait for the 60-second countdown. When the countdown is completed, the current calibration constant will be displayed.
- Press the CALIBRATE key again to return to survey mode. The re-zeroing process is now completed.

APPENDIX E

LOCKOUT/TAGOUT

1.0 INTRODUCTION

The Lockout/Tagout Standard, 29 CFR 1910.147, is believed to prevent about 120 deaths and 60,000 injuries per year, according to OSHA officials. Although this standard is aimed at the industrial community, in environmental engineering applications, it is very important that employees understand and implement these procedures when working with and around energized equipment. Under this standard, the Contractor is required to establish a program that utilizes procedures for locking out and/or tagging to isolate and disable the equipment to prevent accidental start-up or release of stored energy. The Contractor's employees will identify, locate and control these energy sources, as necessary.

2.0 PURPOSE

The purpose of this Lockout/Tagout plan is to establish procedures for locking out and/or tagging to isolate and disable equipment to prevent accidental startup or release of stored energy, and possible injury to employees.

3.0 SCOPE

This procedure applies to all field/facility operations that require all operative energy sources, including line breaking, in the work area to be shut down, locked out and tagged, so that the Contractor's employees may safely perform their job. Contractors and subcontractors performing work on this project will be required to comply with these requirements if their employer does not have a comparable lockout/tagout program already in place.

4.0 PROCEDURE

1. The authorized employee will evaluate the scope of work and all equipment, machines or industrial processes in the area that require the use of stored energy. Energized equipment that may cause a safety hazard will be shut down as required to eliminate the potential for injury.
2. Prior to beginning the work, the authorized employee will be sure that appropriate lockout/tagout equipment is available to isolate the energy source.
3. The authorized employee will ensure that all affected employees have been advised of the following topics:
   - Scope of Work;
   - Energy sources;
   - Energy isolation devices;
   - Lockout devices;
   - Tags;
   - Test procedures; and
   - Authorized personnel. (Those individuals charged with the responsibility for de-energizing and re-energizing energy sources).

4. Documentation of the safety meeting will be placed in the job folder for future reference. All employees will sign the Lockout Worksheet prior to starting the work. See Attachement A for a copy of the Lockout Worksheet.
5. The specified energized equipment will be shut down before the Contractor's personnel or its subcontractors begin work on Site. Shut down will take place in the following manner:
   - The authorized employee will inform the client's representative of the need to shut down the equipment.
   - The authorized employee, with assistance from the client's representative, will locate all power sources on the process or equipment.
   - All power sources will be shut down and verified as such by the authorized employee.
   - When possible, a lockout device will be applied by both parties to isolate each source.
   - Any necessary testing of equipment will be conducted to ensure that the process or equipment is free of residual energy (per item 6).
   - The authorized employee will attempt to operate the machine to be sure that it remains inoperative. All activation controls will be returned to the "off" position after testing.
   - The authorized employee will apply a tag that bears the following warning, "DANGER - EQUIPMENT LOCKOUT" along with the authorized employee's name, the date, and the time of the lockout.
   - The authorized employee will complete the Lockout Worksheet.
   - Equipment may now be released for work by the authorized employee. No release will be given until all required inspections and testing are performed.
6. Residual energy: Pneumatic/hydraulic power, spring compression, and residual electrical energy in transformers are examples of residual energy that, when not accounted for, may present a greater hazard to the employee. These sources of energy will be identified, located and controlled in the following manner:
   - Residual electrical energy can be controlled through grounding.
   - Pneumatic/hydraulic line pressure can be released, allowing the weight to come to a rest.
   - Spring tensions can be relieved.
   - Product lines will be double blocked (panned) and bled to prevent product from being released.
   - A lockout device and tag will be applied and secured by the authorized employee for the duration of the job to prevent residual energy from reaccumulating and creating a hazard to employees.
   - The lockout/tagout will be documented by the authorized employee on the Lockout Worksheet.
7. After all work is completed, the authorized employee will perform the following:
   - The authorized employee will inform everyone that the job is complete.
   - The Lockout Worksheet will be reviewed by the authorized employee with all employees to make sure that all employees are accounted for before re-energizing the equipment.

- The authorized employee will be sure that all tools, debris or other material that could be placed into motion are removed before the equipment or process is re-energized. All employees will be instructed to stay clear of movable parts of the equipment or process.
- All residual energy controls will be removed by the authorized employee, as well as all energy isolation lockouts and tags.
- In the presence of the client's representative, energy will be restored to the equipment or process.
- All lockout equipment removal will be documented on the Lockout Worksheet by the authorized employee. The Lockout Sheet will be placed in the job file at the end of the shift.

8. All employees must be accounted for before re-energizing equipment. When employees that have worked on the job are absent from the final inspection before re-energizing the equipment, the authorized employee will initiate the following:
   - The lockout sheet will be checked to account for all employees.
   - The authorized employee will obtain a Lockout/Tagout Absent Employee form (See Attachment B).
   - The authorized employee will appoint employees to look for the individual, paying special attention to high hazard areas where physical harm could result from the start-up of the equipment or process.
   - After a complete search of the equipment or process, and it has been determined by the authorized employee that the employee is not present, all outlying areas surrounding the Site will be searched.
   - The area surrounding the Site will be guarded to prevent the absent employee from inadvertently entering a hazardous situation.
   - The equipment or process will be cleared for re-energization only by the authorized employee once all of the above conditions are met.
   - A copy of the completed Absent Employee form will be posted conspicuously in the work area, and not removed until the employee has been located. The client's representative will be notified of the situation so that the absent employee does not endanger himself/herself by entering an energized process or equipment.
9. When appropriate, contractors and subcontractors working under the Contractor's direction will be informed of their responsibilities, under the Lockout/Tagout Standard, to provide protection against hazardous energy.
   - When necessary within the scope of work, contractors and subcontractors without such a program, at the discretion of the Contractor, will be disqualified from working on these projects.
   - The contractor or subcontractor program must be comparable or more strict than the Contractor's program.
     1. Programs found to be insufficient in some areas will be returned, with the requested changes to be made before the program is acceptable for implementation.
     2. The copy of the program will be returned to the contractor or subcontractor, and will not be duplicated by the Contractor or any of its employees.

- All affected employees will be given training in these procedures prior to performing any lockout/tagout work. This training will be documented and maintained in the employees' training file with the Health and Safety Division.
- This procedure will be reviewed annually to ensure that it remains relevant to the Contractor’s operations.

5.0 DEFINITIONS

Affected Employee: An employee whose job requires operation/use of equipment or machines on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed. All personnel or subcontractors working in these circumstances are "affected employees".

Authorized Employee: A person who locks out or implements a tagout system procedure on machines or equipment in connection with the servicing or maintenance on that machine or equipment. An authorized person and an affected employee may be the same person when the affected employee's duties also include performing a lockout or tagout on a machine or equipment.

Capable of being Locked Out: An energy isolating device will be considered to be capable of being locked out either if it designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energized: Connected to an energy source or containing residual or stored energy.

Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and, any similar device used to block or isolate energy. The term does not include a push button, selector switch, and other control circuit type devices.

Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device: A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device: A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

ATTACHMENT A
LOCKOUT WORKSHEET

LOCKOUT WORKSHEET

Job Location: ______________________________ Project Manager: ___________________________

Date: ______________________________ Time: _______________ a.m./p.m.

Description of Lockout to be Performed: ____

Energy source(s): ____

Pre-Work Safety Meeting Minutes: ____

Lockout Hardware Used: ____

Energy Restoration (Check each as you Progress): **Time Completed**

______ All personnel accounted for and in the clear ______________________

______ Point(s) of operation free of tools and debris. ______________________

______ Lockout hardware removed. ______________________

______ Personnel clear of points of operation. ______________________

______ Energy restored. ______________________

______ Equipment operation verified. Client's rep on Site. ______________________

______ Lockout terminated ______________________

Employees' Signatures: ____

____

____

ATTACHMENT B

LOCKOUT/TAGOUT ABSENT EMPLOYEE FORM

LOCKOUT/TAGOUT ABSENT EMPLOYEE FORM

NOTICE

Upon completion of work performed under lockout/tagout conditions, the following employee(s) listed below could not be located or accounted for:

____

____

____

All attempts have been made to locate this employee at the jobSite. It has been verified that this employee is not in the vicinity of the hazardous energy source and will not be affected by the startup of equipment which was under lockout conditions.

______________________________________ __________

Signature of Authorized Employee   Date

APPENDIX F

INCIDENT REPORT FORM

SUPERVISOR'S REPORT OF ACCIDENT

Supervisor's Name: ____

Basic Rules for Accident Investigation

- Find the cause to prevent future accidents - Use an unbiased approach during investigation.
- Interview witnesses & injured employees at the scene - conduct a walkthrough of the accident.
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the accident scene.
- What hazards are present - what unsafe acts contributed to accident?
- Ensure hazardous conditions are corrected immediately.

Date & Time		**Location**	
Task Performed		**Witnesses**	
Resulted in	___ **Injury** ___ **Fatality** ___ **Property Damage**	**Property Damage**	
Injured		**Injured**	
Describe Accident Facts & Events			

Supervisors Root Cause Analysis (Check ALL that apply to this accident)			
Unsafe Act		**Unsafe Conditions**	
Improper work technique		Poor workstation design	
Safety rule violation		Unsafe operation method	
Improper PPE or PPE not used		Improper maintenance	
Operating without authority		Lack of direct supervision	
Failure to warn or secure		Insufficient training	
Operating at improper speeds		Lack of experience	
By-passing Safety device		Insufficient knowledge of job	
Protective equipment not in use		Slippery conditions	
Improper loading or placement		Excessive noise	

Improper lifting		Inadequate guarding of hazards	
Servicing Machinery in motion		Defective tools/equipment	
Horseplay		Poor housekeeping	
Drug or alcohol use		Insufficient lighting	
Unsafe Acts require a written warning and re-training before the Employee resumes work.			
Date		**Date**	
Retraining Assigned		**Unsafe Condition Guarded**	
Retraining Completed		**Unsafe Condition Corrected**	
Supervisor Signature		**Supervisor Signature**	

Accident Report Review

Supervisor ______________________________ Date ____________

Department Superintendant ______________________________ Date ____________

Safety Manager ______________________________ Date ____________

Plant Manager ______________________________ Date ____________

APPENDIX D

QUALITY ASSURANCE PROJECT PLAN

2350 Fifth Avenue

Site #2-31-004

NEW YORK, NEW YORK

Quality Assurance Project Plan

AKRF Project Number: 08010

Prepared for:

2350 Fifth Avenue Corporation
309 East 94th Street, Ground Floor
New York, NY 10128

Prepared by:

AKRF

AKRF Engineering, P.C.
440 Park Avenue South, 7th Floor
New York, NY 10016
212-696-0670

FEBRUARY 2012

TABLE OF CONTENTS

1.0 INTRODUCTION ... 1
2.0 PROJECT TEAM ... 1
2.1 Project Director ... 1
2.2 Project Manager ... 1
2.3 Field Team Leader ... 1
2.4 Project Quality Assurance/Quality Control Officer ... 1
2.5 Laboratory Quality Assurance/Quality Control Officer ... 2
3.0 STANDARD OPERATING PROCEDURES ... 2
3.1 Preparation of Work Area ... 2
3.1.1 Isolation Enclosure ... 2
3.1.2 Stockpiling/Staging Area ... 3
3.2 Excavation and Removal of Contaminated Material ... 3
3.3 Field Screening of Excavated Material ... 3
3.4 Decontamination of Sampling Equipment ... 4
3.5 Heavy Equipment Decontamination ... 4
3.6 Management of Investigation Derived Waste ... 5
4.0 SAMPLING AND LABORATORY PROCEDURES ... 5
4.1 End Point Sampling ... 5
4.2 Backfill/Reuse Sampling ... 5
4.3 Laboratory Methods ... 5
4.4 Quality Control Sampling ... 6
4.5 Sample Handling ... 7
4.5.1 Sample Identification ... 7
4.5.2 Sample Labeling and Shipping ... 7
4.5.3 Sample Custody ... 8
4.6 Field Instrumentation ... 8
5.0 DATA REVIEW ... 8

TABLES (IN TEXT)

Table 1 - Sample Analysis Methods and Holding Times
Table 2 - QA/QC Sample Requirements
Table 3 - Examples of Sample Names

ATTACHMENTS

Attachment A - Resume of Project QA/QC Officer, Project Director and Project Manager

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) describes the protocols and procedures that will be followed during implementation of the Remedial Action Work Plan (RAWP) for Phase 1 of remediation (insulation removal) at the 2350 Fifth Avenue Site at West 141st Street and Fifth Avenue in the Borough of Manhattan, New York, New York. The objective of the QAPP is to provide for Quality Assurance (QA) and maintain Quality Control (QC) of environmental investigative, sampling and remedial activities conducted under the RAWP - Phase 1. Adherence to the QAPP will ensure that defensible data will be obtained during the investigation and remediation.

2.0 PROJECT TEAM

The project team will be drawn from AKRF professional and technical personnel and AKRF's subcontractors. All field personnel and subcontractors will have completed a 40-hour training course and updated 8-hour refresher course that meet the Occupational Safety and Health Administration (OSHA) requirements of 29 CFR Part 1910. The following sections describe the key project personnel and their responsibilities.

2.1 Project Director

The project director will be responsible for the general oversight of all aspects of the project, including scheduling, budgeting, data management and decision-making regarding the field program. The project director will communicate regularly with all members of the AKRF project team, the New York State Department of Environmental Conservation (NYSDEC), and 2350 Fifth Avenue Corporation to ensure a smooth flow of information between involved parties. Marc S. Godick, LEP, will serve as the project director for the RAWP - Phase 1. Mr. Godick's resume is included in Attachment A.

2.2 Project Manager

The project manager will be responsible for directing and coordinating all elements of the RAWP - Phase 1. The project manager will prepare reports and participate in meetings with 2350 Fifth Avenue Corporation and/or the NYSDEC. Kathleen Brunner will serve as the project manager for the RAWP - Phase 1. Ms. Brunner's resume is included in Attachment A.

2.3 Field Team Leader

The field team leader will be responsible for supervising the daily sampling and health and safety activities in the field and will ensure adherence to the work plan and HASP. He/She will report to the Project Manager on a regular basis regarding daily progress and any deviations from the work plan. The field team leader will be a qualified, responsible person, able to act professionally and promptly during soil disturbing activities. The field team leader responsibilities will be assigned to appropriate AKRF personnel and will be established when implementation of the work is near. Field team leaders may include Elizabeth Baird, Gregory Baird, Stephen Grens, Jr., and Matthew Oleske. Ms. Baird's, Mr. Baird's, Mr. Grens', and Mr. Oleske's resumes are included in Attachment A.

2.4 Project Quality Assurance/Quality Control Officer

The Quality Assurance/Quality Control (QA/QC) Officer will be responsible for adherence to the QAPP. The QA/QC Officer will review the procedures with all personnel prior to commencing any fieldwork and will conduct periodic site visits to assess implementation of the procedures. The QA/QC officer will also be responsible for reviewing the Data Usability Summary Report

(DUSR) for the analytical results and interfacing with the third-party validator to resolve any issues, as described in Section 5.0 of this QAPP. Marcus Simons will serve as the QA/QC officer for the RAWP - Phase 1. Mr. Simons's resume is included in Attachment A.

2.5 Laboratory Quality Assurance/Quality Control Officer

The laboratory QA/QC officer will be responsible for quality control procedures and checks in the laboratory and ensuring adherence to laboratory protocols. He/she will track the movement of samples from the time they are checked in at the laboratory to the time that analytical results are issued. He/she will conduct a final check on the analytical calculations and sign off on the laboratory reports. The laboratory QA/QC officer will be determined upon selection of a contract laboratory or laboratories for the RAWP - Phase 1.

3.0 STANDARD OPERATING PROCEDURES

The following sections describe the standard operating procedures (SOPs) for the investigative activities included in the RAWP - Phase 1. During these operations, safety monitoring will be performed as described in the project Health and Safety Plan (HASP) and all field personnel will wear appropriate personal protective equipment.

3.1 Preparation of Work Area

3.1.1 Isolation Enclosure

The sub-slab insulation removal will include working within an isolated enclosure equipped with exhaust fans to control dust and vapors generated from demolition and removal activities. The enclosure will be constructed in such a manner as to prohibit air passage and to maintain a static negative air pressure of 0.02-inch (minimum) water column during work activities. The isolation enclosure will be constructed at the perimeter of the active work area covering walls, ceilings, and floor-wall joints with two layers of 6-mil fire retardant plastic sheeting secured with tape or other adhesive using the procedures described below:

1. Construct isolation barriers consisting of one layer of 6-mil fire retardant plastic sheeting around the perimeter of the planned excavation area so that all ceilings and walls adjacent to the planned excavation perimeter are covered with plastic sheeting. Wall-covering plastic sheeting will be extended onto the floor a minimum of 12 inches and secured with tape or other adhesive.

2. In the same manner as Item 1, construct an additional isolation barrier so that all walls, ceilings, and a minimum of 12 inches of floor adjacent to walls are covered with two layers of 6-mil fire retardant plastic sheeting and secured with tape or other adhesive.

3. A rigid framework consisting of fire-treated wood or acceptable fire-retardant structural material will be constructed along perimeter sections of the enclosure, and then covered with two layers of 6-mil plastic sheeting, as described in Items 2 and 3, where current structural elements (i.e., walls that are to remain intact) are not present.

4. Walls, ceilings, and floor-wall joints of the enclosure are to be constructed using two layers of 6-mil plastic sheeting secured to structural elements (either currently in place or constructed by the contractor) using glue and tape in such a manner as to prohibit air passage.

5. Install exhaust fan units, creating and maintaining a static negative air pressure of 0.02-inch (minimum) water column in the work area relative to outside work areas and concurrently provide a minimum of four air changes per hour.

6. Exhaust ducts are to be placed outdoors at a minimum height of 12 feet above sidewalk grade and a minimum of 5 feet from operable doors/windows or any HVAC intakes.
7. Once running, the ability of the exhaust fan units to maintain a minimum static negative air pressure of 0.02-inch water column will be verified using differential pressure meters (manometers).

3.1.2 Stockpiling/Staging Area

Prior to excavation and removal of contaminated insulation material, the stockpiling/staging area will be selected and prepared prior to the commencement of excavation activities to protect building occupants. Staging area(s) will be prepared for staging any contaminated material overnight or longer using the procedures described below:

1. The material staging area(s) will be prepared by placing 6-mil plastic on the ground; or
2. Sealable containers with tight-fitting covers may also be utilized for the staging of VOC-contaminated material overnight or longer, to prevent the migration of VOCs into the Site building.

3.2 Excavation and Removal of Contaminated Material

Contaminated insulation material will be removed from a maximum 1,000-square foot area within an isolation enclosure constructed prior to the start of excavation using the following procedures (further detailed in the RAWP for Phase 1):

1. The existing concrete floor will be saw cut, at a minimum, around the perimeter of the designated removal area.
2. Excavated insulation material will be removed using a small excavator and will be handled and disposed of as hazardous PCE-contaminated waste. All insulation material will be handled and disposed of as hazardous waste irrespective of visual, olfactory, or PID indications of contamination.
3. Concrete, tar paper and other building materials in direct contact with insulation material will be handled and disposed of as hazardous PCE-contaminated waste.
4. Fill material overlying concrete that exhibits no evidence of contamination may be characterized for potential reuse as backfill material on-site, according to Section 4.2, or disposed of off-site as regulated, non-hazardous waste.
5. All excavated material requiring staging for overnight or longer will follow the procedures in Section 3.1.2.

Damaged floors, walls, sub-slab venting system piping, additional utilities, or other building elements outside the removal area, will be repaired prior to demobilization from the Site.

3.3 Field Screening of Excavated Material

Soil excavated from the property exhibiting chemical or solvent-like odors, visual staining, or elevated PID readings of 5 ppm will not be reused on-Site but will be staged for off-Site disposal. The following procedure will be utilized during excavation screen excavated material for VOCs using a PID:

1. Collect an aliquot of excavated material and place in a sealable plastic bag labeled with the location and depth from where the aliquot was collected.

2. Keep bag sealed to allow for any vapors present within the aliquot of excavated material to fill the headspace of the sealed plastic bag.
3. Use a PID to screen the headspace within the plastic bag so that any vapors present are detected with a PID.
4. Document the location, odor, visual staining, screened location, and PID response in the field log.

3.4 Decontamination of Sampling Equipment

All sampling equipment will be either dedicated or decontaminated between sampling locations. The decontamination procedure will be as follows:

1. Scrub using tap water/Simple Green® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/ Simple Green® and bristle brush.
4. Rinse with tap water.
5. Rinse with distilled water.
6. Air-dry the equipment, if possible.

Decontamination will be conducted on plastic sheeting (or equivalent) that is bermed to prevent discharge to the ground and will be handled as described in Section 3.1.2.

3.5 Heavy Equipment Decontamination

Decontamination of chemically contaminated heavy equipment will be accomplished using high-pressure steam or dry decontamination with brushes and shovels. Decontamination will take place on a decontamination pad and all liquids used in the decontamination procedure will be collected. Vehicles or equipment brought into an exclusion zone will be treated as contaminated, and will be decontaminated prior to removal. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with Federal, State and local regulations. Personnel performing this task will wear the proper PPE as prescribed in Table 2 of the Site-Specific Health and Safety Plan (HASP).

A decontamination area will be established around the planned excavation area, adjacent to the environmental enclosure. The floor of the decontamination area will be covered with 6-mil plastic sheeting, as necessary, and bermed to prevent spreading of decontamination fluids or potential discharge to the ground surface.

Heavy equipment decontamination will be performed as outlined in Section 8.2.5 of the Health and Safety Plan (HASP). All equipment in direct contact with known or potentially contaminated material will be either dedicated or decontaminated prior to handling less contaminated material or removal from the Site. Decontamination of chemically contaminated heavy equipment will be accomplished using high-pressure steam or by dry decontamination with brushes and shovels. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with Federal, State and local regulations. Personnel performing this task will wear the proper PPE prescribed in Table 2 of the HASP.

3.6 Management of Investigation Derived Waste

All investigation-derived waste (IDW) will be containerized in Department of Transportation (DOT)-approved 55-gallon drums or other appropriate containers. The containers will be covered at the end of each work day and labeled with the date, the material location, the type of waste (e.g., drill cuttings, development water or purge water) and the name of an AKRF point-of-contact. Waste characterization samples will be collected, as required by the disposal facility. All containers will be labeled "pending analysis" until laboratory data is available. All IDW will be handled and disposed of or treated according to applicable local, State and Federal regulations.

4.0 SAMPLING AND LABORATORY PROCEDURES

4.1 End Point Sampling

Following excavation to remove contaminated insulation and fill material described in Section 3.2 of this QAPP, and prior to the installation of a vapor barrier, end point samples will be collected from the sidewalls in accordance with the RAWP for Phase 1 of the remediation. Concrete is expected to be present beneath the insulation material. As such, endpoint samples would be collected only along the perimeter of the removal area. Samples will be collected by:

1. Place an alquilot of insulation material into a clean laboratory-supplied container that is labeled according to Section 4.5.1.
2. Keep samples in an ice-filled cooler or refrigerator until receipt by the laboratory.
3. Decontaminate all sampling equipment between sampling locations, as described in Section 3.3 of this QAPP.

4.2 Backfill/Reuse Sampling

1. Concrete or demolition debris that does not exhibit signs of contamination will be sampled for asbestos prior to reuse on-Site.
2. One discrete sample for TCL VOC analysis will be collected from material to be imported or reused.
3. Two composite samples for TCL SVOCs, PCBs, TCL pesticides, herbicides, and TAL metals analyses will be collected from material to be imported or reused.
4. Samples will be collected into laboratory-supplied containers.
5. Samples will be kept in an ice-filled cooler or refrigerator (not asbestos samples) until receipt by the laboratory.
6. Decontaminate all sampling equipment between sampling locations as described in Section 3.3 of this QAPP.

4.3 Laboratory Methods

End point insulation sample and backfill/reuse sample analytical work will be performed by TestAmerica Laboratories of Shelton, CT, or other equivalently qualified New York State certified laboratory. The laboratory will operate a QA/QC program that will consist of proper laboratory practices (including the required chain-of-custody), an internal quality control program, and external quality control audits by New York State.

Because the sub-slab insulation material is lightweight and the VOC analytical method accounts for sample weight, the laboratory has requested that the samples be collected using traditional VOC analytical glassware to ensure adequate sample volume. Samples will be sent to the laboratory each day for prompt extraction and analysis. End point and backfill/reuse samples will be analyzed using the following methods and within the following holding times:

Table 1
Sample Analysis Methods and Holding Times

Matrix	**Sample Analysis**	**EPA Method**	**Bottle Type**	**Preser-vative**	**Holding Time***
Sub-Slab Insulation	TCL VOC	8260	2 oz. clear glass w/ septa top	4˚C**	14 days
Imported Fill	TCL VOC	8260	2 oz. clear glass w/ septa top	4˚C	14 days extract, 40 days analyze
	TCL SVOC	8270	Glass 4 oz. jar	4˚C	14 days extract, 40 days analyze
	PCBs	8082	Glass 4 oz. jar	4˚C	14 days extract, 40 days analyze
	TCL Pesticides	8081	Glass 4 oz. jar	4˚C	14 days extract, 40 days analyze
	Herbicides	8151	Glass 4 oz. jar	4˚C	14 days extract, 40 days analyze
	TAL Metals	6010	Glass 4 oz. jar	4˚C	180 days
	Mercury	7471	Glass 4 oz. jar	4˚C	28 days

*Holding times are from time of sample collection.
** Note: Sub-slab insulation samples will be sent to the lab each day for prompt extraction and analysis

Samples will be analyzed by an environmental laboratory approved in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003). Category B Deliverables will be required for confirmatory (post remediation) samples and final delineation samples.

4.4 Quality Control Sampling

In addition to the laboratory analysis of the confirmatory end point and backfill/reuse samples, additional analysis will be included for quality control measures, as required by the Category B sampling techniques. These samples may include ambient air sample and blind duplicate samples. QA samples will be analyzed for the same parameter set for which the other samples will be analyzed. Quality control samples will be collected at a frequency of one sample for every 20 field samples. Quality control sampling in accordance with the disposal facility requirements will be performed when collecting samples for disposal characterization. QA/QC Sampling requirements are presented in Table 2 below.

Table 2

QA/QC Sample Requirements

Sample Type	Parameters	Analytical Method	Field Samples	QC Samples			
				Equipment Blank	**Trip Blank**	**MS/MSD**	**Duplicate**
Sub-Slab Insulation	TCL VOC	8260	9	1	1	1	1
Imported Fill	TCL VOC	8260	1 per 95 yd^3	1	1	1	1
	TCL SVOC	8270	2 composite per 95 yd^3	--	--	--	--
	PCBs	8082		--	--	--	--
	TCL Pesticides	8081		--	--	--	--
	Herbicides	8151		--	--	--	--
	TAL Metals	6000/7000 series		--	--	--	--

4.5 Sample Handling

4.5.1 Sample Identification

All samples will be consistently identified in all field documentation, chain-of-custody documents and laboratory reports using an alpha-numeric code. Endpoint samples will be identified by the location number followed by the sample depth interval (in parenthesis). Waste characterization samples collected from 55-gallon drums will be identified by the drum number (e.g., D-1 or D-2) followed by a sample type designation (LQ for liquid and SD for solid).

Table 3 provides examples of the sampling identification scheme.

Table 3
Examples of Sample Names

Sample Description	Sample Designation
Endpoint Sample from a depth of 3 below grade	EP-2 (3)
Composite soil sample Drums 10, 11 and 12	D-10 to 12 (SD)

4.5.2 Sample Labeling and Shipping

All sample containers will be provided with labels containing the following information:

- Project identification
- Sample identification

- Date and time of collection
- Analysis(es) to be performed
- Sampler's initials

Each sample container and the chain-of-custody form will be placed in a shipping container with bubble wrap or packing materials to prevent damage/breakage.

If appropriate based on analyses, freezer packs and/or fresh ice in sealable plastic bags will be added. Once the samples are collected and labeled, they will be placed in chilled coolers and stored in a cool area away from direct sunlight to await shipment to the laboratory. At the start and end of each workday, field personnel will add ice to the coolers as needed.

Samples will be shipped overnight (e.g., Federal Express) or transported by a laboratory courier. All containers shipped to the laboratory will be sealed with mailing tape and a chain-of-custody (COC) seal to ensure that the containers remain sealed during delivery.

4.5.3 Sample Custody

Field personnel will be responsible for maintaining the samples in a secured location until they are picked up and/or sent to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on chain-of-custody (COC) forms. The COC forms will contain the following information: project name; names of sampling personnel; sample number; date and time of collection and matrix; and signatures of individuals involved in sample transfer, and the dates and times of transfers. Laboratory personnel will note the condition of the custody seal and sample containers at sample check-in.

4.6 Field Instrumentation

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the Site for referencing proper operation, maintenance and calibration procedures. The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork, if applicable. If an instrument fails calibration, the project manager or QA/QC officer will be contacted immediately to obtain a replacement instrument. A calibration log will be maintained to record the date of each calibration, any failure to calibrate and corrective actions taken. The PID will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas.

5.0 DATA REVIEW

A third party data validation consultant will conduct a review of all analytical data and prepare a Data Usability Summary Report (DUSR) as needed to assess the quality of the data and determine its usability, and interface with the project QA/QC officer to resolve problems. To assess the data, the third-party data validator will:

- Ensure the data package is complete as defined under the requirements for the NYSDEC Analytical Services Protocol (ASP) Category B deliverables and that all data were generated using established and agreed upon protocols.
- Check that all holding times were met.

- Check that all QC data (blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data) fall within the protocol required limits and specifications.
- Compare raw data with results provided in the data summary sheets and quality control verification forms.
- Check that correct data qualifiers were used.
- Evaluate the raw data and confirm the results provided in the data summary sheets and quality control verification forms.

Any QC exceedances will be specified in the DUSR, and the corresponding data package QC summary sheet identifying the exceedances will be attached. The DUSR will identify any data deficiencies, analytical protocol deviations and quality control problems and discuss their effect on the data. Recommendations for resampling and/or reanalysis will be made.

ATTACHMENT A

RESUME OF PROJECT QA/QC OFFICER, PROJECT DIRECTOR, AND PROJECT MANAGER

Marcus Simons

Senior Vice President

General Introduction

Marcus Simons is a Senior Vice President of AKRF with more than 18 years of experience in environmental consulting. He specializes in the assessment and cleanup of contaminated sites, including federal and state superfund, Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA) sites, brownfield, voluntary cleanup and spill sites. His expertise includes health risk assessment, development of sampling plans, economic evaluations of remedial alternatives, and regulatory analysis. He also has extensive experience in statistics, selection of sites for controversial facilities, and federal and state wetland regulations and waterfront permitting. In addition to analytical work, Mr. Simons has considerable experience in presenting results to regulatory agencies and the general public.

Mr. Simons manages much of the environmental due diligence activity at AKRF (most recently managing environmental due diligence on Tishman/Blackrock's Peter Cooper/Stuyvesant Town acquisition, reportedly the largest real estate transaction in US history), including supervising preparation of numerous Phase I and Phase II Environmental Site Assessments, as well as more complex multi-site and litigation-related projects. Mr. Simons also manages preparation of the contaminated-materials portions of AKRF's Environmental Impact Statements and Environmental Assessments.

Mr. Simons has managed some of the most complex cleanup sites in New York State including: the recently completed cleanup of a 12-acre PCB-contaminated former utility property in Flushing, Queens where a 3 million square foot retail/residential building is being constructed; cleanup of the nation's largest former dental factory in Staten Island for reuse as single family housing; the investigation of several former manufactured gas plants; and the investigation and remediation associated with the reconstruction of the West Side Highway and Hudson River Park in Manhattan (from the Battery to 59th Street). These projects involved extensive multi-year negotiations with federal, state and city regulatory agencies. Mr. Simons has experience with federal and state superfund programs, state brownfield and voluntary cleanup programs, spill programs and investigation/cleanup under New York SEQRA/CEQR and NYCDEP E-designation programs.

Mr. Simons also has extensive experience in the evaluation of contaminated materials issues for environmental assessments (EAs) and environmental impact statements (EISs) under NEPA, SEQRA and CEQR, including transportation projects (Second Avenue Subway, MTA/LIRR East Side Access, Cross Harbor Freight Movement Study, Route 9A Reconstruction), large-scale rezoning projects (Long Island City, Downtown Brooklyn, Jamaica) and public and private redevelopment work (Times Square, School Construction Authority, Queens West)

Before joining AKRF, Mr. Simons worked for Woodward Clyde Consultants (now URS Corporation) in Wayne, New Jersey, where he was responsible for risk assessment, environmental impact analysis, and regulatory analysis for both public and private clients. His responsibilities included projects primarily located in New York and New Jersey. His risk assessment work included a study for the decommissioning and cleanup of a Canadian elemental phosphorus production facility (the first such plant in the world to be systematically decommissioned).

Background

Education

M.A. and B.A. (Honors), Engineering/Management Science, Cambridge University, England, 1986

M.S., Engineering and Public Policy, Carnegie-Mellon University, 1988

Years of Experience

Year started in company: 1995

Year started in industry: 1988

RELEVANT EXPERIENCE

Pelham Bay Landfill, Bronx, NY

For the NYCDEP, Mr. Simons prepared a Human Health Risk Assessment for the Pelham Bay Landfill Inactive Hazardous Waste Disposal Site in Bronx, NY. The Assessment was performed in accordance with both US EPA Superfund Guidelines and site-specific exposure factors and other procedures agreed to with NYSDEC and NYSDOH. The Assessment included analysis of soil, groundwater, surface water, sediment, fish/shellfish and air data and incorporated complex comparisons with background contaminant levels in the various media and innovative approaches, following the data validation, to handling extensive non-detect and estimated-value laboratory data .

CE Flushing Site, Flushing, NY

Mr. Simons directed the remediation of a former industrial site in Flushing, Queens, NY prior to its redevelopment as a 3 million square foot retail/residential complex. The property was cleaned up under the NYS Department of Environmental Conservation Brownfield Cleanup Program and the NYC Department of Environmental Protection's E-Designation requirements. The remedial measures included the removal of aboveground and underground storage tanks, excavation and off-site disposal of TSCA, RCRA and non-hazardous wastes, NAPL removal, and removal and investigation of on-site drainage structures. The remediation and subsequent construction involved obtaining (or obtaining waivers from) numerous permits including those for NYSDEC Tidal Wetlands, NYSDEC Long Island Wells, NYSDEC SPDES/Stormwater and NYCDEP Sewer Use.

Peter Cooper Village/Stuyvesant Town, New York, NY

Mr. Simons directed the purchaser's environmental due diligence efforts for the bidding and subsequent acquisition of this 80-acre property in Manhattan. Much of the 110-building complex is underlain by former manufactured gas plants and Con Edison entered the site into NYSDEC's Voluntary Cleanup Program. Going forward Mr. Simons will manage oversight of activities that involve disturbance of MGP-contaminated soils, as well as future testing and potentially remediation.

Ferry Point Park, Bronx, NY

Mr. Simons developed the material acceptance criteria (soil standards for capping materials) for the development of Ferry Point Park (including a golf course) in the Bronx. The New York City Department of Environmental Protection DEP and the New York State Departments of Health (DOH) and Environmental Conservation (DEC) agreed for the first time to relax their strict (TAGM 4046) criteria for clean soil, based on statistical analyses of background conditions and risk-based modeling.

Prince's Point, Staten Island, NY

Mr. Simons managed the complex cleanup (including the relocation of a contaminated tidal creek) of the nation's largest former dental factory site on Staten Island's waterfront. The site was on the State Superfund list. The future use of the site as single-family residential property entailed extensive negotiations with NYSDEC and NYSDOH. The project required obtaining (or obtaining waivers from) numerous permits including those for NYSDEC Tidal and Fresh Water Wetlands, USACOE (Nationwide) Permits, NYSDEC Coastal Erosion Hazard Area, NYSDEC SPDES and Stormwater, FEMA Modifications to Land in Floodplain, and USEPA Notification of PCB Waste Activity.

Route 9A Reconstruction, New York, NY

AKRF directed extensive studies for the reconstruction in Lower Manhattan proposed by the New York State Department of Transportation (NYSDOT) in cooperation with the Federal Highway Administration (FHWA). The project is arguably the most complex environmental analyses performed for a federally funded transportation project in New York City in the last 10 years. The firm was responsible for all environmental tasks as well as the preparation for the Draft, Supplementary, and Final Environmental Impact Statements (EISs) and Section 4(f)

Evaluation for this 5-mile $250 million reconstruction of Route 9A as part of the recovery effort following the events of September 11th, 2001. Mr. Simons managed the extensive hazardous materials investigations and prepared the contract specifications for contaminated soil and tank removal, including Health and Safety oversight.

Long Island City Rezoning, Queens, NY

As part of the preparation of an Environmental Impact Statement for NYC Department of City Planning, Mr. Simons managed the hazardous materials assessment of a multi-block industrial area. In addition to conducting the assessment Mr. Simons made recommendation as to the properties where "E-Designations" (city-recorded institutional controls on future development) should be placed.

Outlet City, Long Island City, Queens, NY

In Long Island City, Mr. Simons is managing the investigation and remediation of an old factory complex where large volumes of creosote were spilled. The investigations and interim remedial measures (IRMs) are taking place under the state's Voluntary Cleanup Program (VCP).

Pelham Plaza Shopping Center, Pelham Manor, Bronx, NY

Mr. Simons was responsible for the investigation of a former Con Edison manufactured gas facility on the Hutchinson River on the border between Westchester County and the Bronx. He oversaw the complex investigation of the existing shopping center at the site, and proposed a remediation approach to allow the expansion of the shopping center.

New York City Department of Transportation, Lead Paint Removal and Disposal on Bridges Project, New York, NY

Mr. Simons conducted a regulatory analysis of related to the removal of lead paint from nearly 800 bridges. This analysis included an evaluation of the regulatory compliance of various proposed procedures with federal and state hazardous and solid waste management requirements.

American Felt and Filter Company, New Windsor, NY

Mr. Simons prepared a Remedial Investigation (including exposure assessment) and Feasibility Study for the country's oldest active felt manufacturing facility, located in Orange County. This solvent-contaminated site is on the State Superfund List.

MARC S. GODICK, LEP

SENIOR VICE PRESIDENT

Marc S. Godick, a Senior Vice President of the firm, has 20 years of experience in the environmental consulting industry. Mr. Godick's broad-based environmental experience includes expertise in remedial investigation, design and implementation of remedial measures, environmental/compliance assessment, litigation support, and storage tank management.

BACKGROUND

Education

M.E., Engineering Science/Environmental Engineering, Pennsylvania State University, 1998

B.S., Chemical Engineering, Carnegie Mellon University, 1989

Licenses/Certifications

Licensed Environmental Professional (License # 396) – State of Connecticut – 2003

40 Hour HAZWOPER and Annual Refresher Training, 1990-2008

Supervisors of Hazardous Waste Operations (8 Hour), 1990

Professional Memberships

Chair, Village of Larchmont/Town of Mamaroneck Coastal Zone Management Commission, 1997 - Present

Chair, Westchester County Soil and Water Conservation District, 2005 - Present

Member, NYSDEC Risk-Based Corrective Action (RBCA) Advisory Group for Petroleum-Impacted Sites, 1997

Community Leadership Alliance, Pace University School of Law, 2001

Seminars, Lectures & Publications

"Let Nature Do the Work – Onsite Stormwater Management," Westchester County Department of Parks, Recreation and Conservation, Fall 2003

"Water Pollution Control and Site Assessments and Audits," Environmental Health and Safety Issues Course, Building Owners and Managers Institute (BOMI), 1997-1999

"Hydrogeologic and Geological Aspects of Tank Closures and Remedial Action," Underground Storage Tanks Course, Government Institutes, Summer 1996, Fall 1997

Years of Experience

Year started in company: 2002

Year started in industry: 1990

RELEVANT EXPERIENCE

Queens West Development Project, AvalonBay Communities, Queens, NY

Mr. Godick managed one of the largest remediation projects completed to date under the New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program (BCP). The remedy for the site, which was contaminated by coal tar and petroleum, included the installation of a hydraulic barrier (sheet pile cut off wall), excavation of contaminated soil under a temporary structure to control odors during remediation, a vapor mitigation system below the buildings, and implementation of institution controls. The investigation, remediation design, remedy implementation, and final sign-off (issuance of Certificate of Completion) were completed in two years. Total remediation costs were in excess of $13 million.

Williamsburg Waterfront Redevelopment, RD Management/L&M Equities/Toll Brothers, Brooklyn, NY

The project is one of the largest development projects in the Greenpoint/Williamsburg Rezoning Area, which includes the construction of nearly 1 million square feet of residential and retail space along the Williamsburg waterfront. The site had a variety of industrial uses, including a railyard, junk yard, and waste transfer station. As part of the City's rezoning, the site was assigned an E-designation for hazardous materials. Mr. Godick managed the preparation of the Phase I and II environmental site assessments, remedial action plan (RAP), and construction health and safety plan (CHASP). Mr. Godick obtained NYSDEC closure of an open spill associated with former underground storage tanks at the site. The NYCDEP-approved RAP and CHASP included provisions for reuse of the existing fill material, with the excess being disposed off-site, installation of a vapor barrier below the new buildings, installation of a site cap, and environmental monitoring during the construction activities. Mr. Godick is currently managing the environmental monitoring work that began in 2006. A Notice of Satisfaction has been issued by NYCDEP for the first phase of the development.

Landfill Closure & Compost Facility Application, White Plains, NY

Mr. Godick is currently managing the closure of a formal ash landfill, which is currently being utilized as a leaf and yard waste compost facility by the City of White Plains. The remedial investigation included on-site and off-site assessment of soil, groundwater, and soil gas to delineate the extent of methane and solvent contamination associated with the landfill. The landfill closure plan includes provisions for enhancing the existing cap, methane venting, and groundwater treatment for solvent contamination. Mr. Godick also managed the preparation of the compost facility permit application, which required modification to the facility's operations necessary to close the landfill and address other regulatory requirements.

Landfill Redevelopment – RD Management, Orangeburg, NY

Mr. Godick is currently managing the remediation of the former Orangeburg Pipe site under the NYSDEC Voluntary Cleanup Program. The site contains widespread fill material, which has fragments of Orangeburg pipe that is impregnated with asbestos and coal tar. The site is being redeveloped for retail use. The site's closure plan provides for reuse of all fill material on-site and methane mitigation (vapor barrier and passive sub-slab ventilation system) for all new buildings. The fill management activities will include dust and sediment control measures and air monitoring to prevent airborne dust in accordance with a closure plan, stormwater pollution prevention plan (SWPPP), and CHASP. In pervious areas, the site cap will consist of 2 feet of clean fill and a liner in larger areas.

National Grid – Halesite Manufactured Gas Plant Site, Town of Huntington, NY

Mr. Godick managed the remedial design and engineering work associated with remediation of National Grid's former manufactured gas plant (MGP) located in the Town of Huntington. The site is situated in a sensitive location along the waterfront, surrounded by commercial and residential properties, and half the property where the remediation was conducted is a steep slope. The remedy consisted of soil removal, oxygen injection, and non-aqueous phase liquid recovery. Mr. Godick was responsible for the development of the remedial work plans, design/construction documents, landscape architecture, confirmatory sampling, air monitoring, supervision, and preparation of close-out documentation in accordance with NYSDEC requirements.

Site Investigation–7 World Trade Center Substation, Con Edison, New York, NY

Mr. Godick managed the site investigation at the former 7 World Trade Center Substation in an effort to delineate and recover approximately 140,000 gallons of transformer and feeder oil following the collapse of the building. The project involved coordination with several crews, Con Edison, and other site personnel.

Site Investigation–Former Manufactured Gas Plant (MGP) Facilities, Con Edison, New York, NY

Mr. Godick managed site investigations at four former MGP facilities. The investigations at three of the four sites were completed at a Con Edison substation, flush pit facility, and service center, respectively. The details associated with the fourth site are confidential. Site characterizations at the substation and flush pit facility were conducted in preparation of expansion at these locations. The findings from these characterizations were used by Con Edison to make appropriate changes to the design specifications and to plan for appropriate handling of impacted materials and health and safety protocols during future construction activities.

Verizon, Investigation & Remediation, Various Locations, NY, PA and DE

Mr. Godick managed over 50 geologic/hydrogeologic assessments and site remediation projects related to petroleum releases at various facilities. Responsibilities included annual budgeting, day-to-day project management, development and implementation of soil and ground water investigation workplans, ground water modeling, risk evaluation, remedial action work plans, remedial design, system installation, waste disposal, well abandonment, and operation and maintenance. Many of the assessment and remedial projects followed a risk-based approach. Remedial technologies implemented included air sparging, soil vapor extraction, bioremediation, pump and treat, soil excavation, and natural attenuation.

Storage Tank Management, Verizon, Various Locations, NY, PA, DE, and MA

Mr. Godick managed the removal and replacement of underground and aboveground storage tank systems for Verizon in New York, Pennsylvania, Delaware, and Massachusetts. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction oversight, project budget, and documentation. For selected AST sites, managed the development of Spill Control, Contingency and Countermeasures (SPCC) plans.

Brownfield Opportunity Area (BOA) Grant Program Services for the Town of Babylon, Wyandanch, NY

AKRF was retained by the Town of Babylon to prepare a blight study, market study, NYS BOA Step 2 Nomination, an Urban Renewal Plan, and a Generic Environmental Impact Statement (GEIS) as part of a revitalization and redevelopment effort for downtown Wyandanch. Mr. Godick was responsible for overseeing the environmental data collection effort for the 226 brownfields identified in the 105-acre project area, and for identifying strategic sites for which site assessment funding should be sought. He also prepared the Hazardous Materials section of the Wyandanch Downtown Revitalization Plan (which incorporates the Nomination, Urban Renewal Plan, and GEIS), involving a summary of available environmental reports, a review of regulatory records, and limited street-level site inspections.

Alexander Street Urban Renewal Plan, Master Plan, Brownfield Opportunity Area Plan, Yonkers, NY

AKRF was retained by the City of Yonkers to prepare an Urban Renewal Plan, Master Plan, Brownfield Opportunity Area Plan, and **a** Generic Environmental Impact Statement (GEIS) for a 153 acre industrial area along Alexander Street on the Yonkers Waterfront. Mr. Godick was responsible for the Hazardous Materials sections of the GEIS and Urban Renewal Plan. Mr. Godick managed the environmental data collection effort for the entire study area which involved review and summary of existing environmental reports, a review of regulatory records, and field inspections. The collected information was used to prioritize individual parcels for funding and remediation. The Master Plan for the area called for the development of a mixed-use neighborhood consisting of residential, neighborhood retail, and office space uses with substantial public open space, access to the Hudson River, and marina facilities.

KATHLEEN BRUNNER

TECHNICAL DIRECTOR

Kathleen Brunner is a Technical Director with more than 12 years of professional environmental consulting experience. She specializes in environmental site assessments and investigations, site remediation, and hazardous materials planning studies. Ms. Brunner has extensive experience performing Phase I and II environmental site assessments, directing and overseeing site remediation projects, and addressing the hazardous materials aspects of Environmental Impact Statements (EISs).

Ms. Brunner's experience includes supervising the installation of soil borings and groundwater monitoring wells; sampling soil, groundwater, air and soil gas; maintaining and sampling groundwater remediation systems, and overseeing and directing construction-related soil management plans and environmental remediation projects. Her range of project experience includes preparation of proposals, sampling protocols, work plans, health and safety plans, site investigation reports, and closure requests, as well as project scheduling and budgeting. Ms. Brunner has coordinated work and acted as a liaison between clients, property owners, subcontractors, and regulatory agencies on City, State and Federal levels.

Prior to joining AKRF, Ms. Brunner worked for a multidisciplinary consulting firm at their offices in Pewaukee, Wisconsin and New York, New York as an environmental scientist.

BACKGROUND

Education

B.A., Physical Geography, University of Wisconsin – Milwaukee, 1995

Licenses/Certifications

40-Hr Hazardous Waste Operations Site Worker, 1997 to present

Years of Experience

Year started in company: 2004

Year started in industry: 1996

RELEVANT EXPERIENCE

C.E. Flushing Site, Flushing, NY

Ms. Brunner is managing and coordinating the investigation, remediation and post-remediation monitoring of a former industrial site in Flushing, Queens, NY as part of redevelopment of the property. The investigation included groundwater sampling, delineation of known areas of soil contamination, and delineating PCB-containing non-aqueous phase liquid (NAPL). Remedial activities included removal of aboveground and underground storage tanks, NAPL product removal, removal of on-site drainage structures, and excavation of delineated hot spots, including hazardous and non-hazardous waste streams. Ms. Brunner assisted in the preparation of the application for this site to transfer from the New York State Department of Environmental Conservation's (NYSDEC) Voluntary Cleanup Program to the Brownfield Cleanup Program (BCP). Ms. Brunner was responsible for developing work plans for approval by the NYSDEC and New York State Department of Health (NYSDOH), and preparation of summary reports for public comment. Remediation was completed in 2007 and Certificates of Completion under the BCP were issued in December 2007. Post-remediation monitoring includes oversight of construction-related soil disturbance, quarterly groundwater and vapor sampling, and continued annual reporting to NYSDEC and NYSDOH. Ms. Brunner also assisted coordination with the New York City Department of Environmental Protection (NYCDEP) due to an E-designation on the property. As part of the project, Ms. Brunner coordinated with the client, lawyers, architects and engineers of the planned development, tenants of a neighboring property, remediation and construction contractors, US Environmental Protection Agency (USEPA), NYSDEC, NYSDOH, and NYCDEP.

Brownfield Opportunity Area (BOA) Grant Program Services for the Town of Babylon, Wyandanch, NY

AKRF was retained by the Town of Babylon to prepare a blight study, market study, NYS BOA Step 2 Nomination, an Urban Renewal Plan, and a Generic Environmental Impact Statement (GEIS) as part of a revitalization and redevelopment effort for downtown Wyandanch. Ms. Brunner was responsible for overseeing the environmental data collection effort for the 226 brownfields identified in the 105-acre project area, and for identifying strategic sites for which site assessment funding should be sought. She also prepared the Hazardous Materials section of the Wyandanch Downtown Revitalization Plan (which incorporates the Nomination, Urban Renewal Plan, and GEIS), involving a summary of available environmental reports, a review of regulatory records, and limited street-level site inspections.

Bayside Fuel Oil Depot, Brooklyn, NY

Ms. Brunner is managing the site assessment for a major oil storage facility (MOSF) located on the Gowanus Canal waterfront. Work included follow-up investigation related to a petroleum release and preparation of a remedial action plan. Additional investigation and initial remedial activities are expected to be completed in 2010, and the site is being considered for redevelopment for retail and residential use.

Fresh Kills Park, Staten Island, NY

AKRF is preparing the Generic Environmental Impact Statement (GEIS) for this large-scale, multi-phase project to turn the former Fresh Kills Landfill into a public park. The project involves New York City Department of Sanitation and Department of Parks with regulatory oversight and approval by both NYCDEP and NYSDEC. As part of the hazardous materials chapter for the GEIS, Ms. Brunner researched site history, performed a regulatory records review and prepared a data summary and recommendations for mitigation of potential future impacts.

Atlantic Yards Arena and Redevelopment Project, Brooklyn, NY

AKRF prepared the Environmental Impact Statement (EIS) and Blight Study for this ambitious and controversial land use initiative. The project, overseen by the Empire State Development Corporation (ESDC), calls for the redevelopment of an underutilized and underdeveloped 22-acre site in the Atlantic Terminal area of Brooklyn, adjacent to Downtown Brooklyn. The project includes a new arena for the Nets basketball team, along with mixed-income residential, commercial office, retail, hotel, and community facility uses. The total project cost is estimated at $4.5 billion. Key issues addressed in the EIS include: potential impacts on water quality in the Gowanus Canal and East River; concerns over land use compatibility and urban design; potential adverse traffic and air quality impacts; and potential adverse effects on socioeconomic conditions in the study area. In addition, the EIS presented a detailed description of construction activities and phasing, and an analysis of potential averse impacts during project construction. The FEIS was issued in December, 2006. Ms. Brunner served on a team of Hazmat staff conducting Phase I Environmental Site Assessments in accordance with ASTM E-1527-00 related to the potential development of up to 8 city blocks. As part of the study, Ms. Brunner coordinated with the client, property owners or their representatives, and tenants. Her work scope included site reconnaissance, site history and records review, interviews, report preparation, recommendations and data summary to be used in preparation of the EIS chapter.

Edgemere By the Sea, Rockaway, NY

Ms. Brunner performed a Phase I Environmental Site Assessment of 73 city lots located on nine blocks in accordance with ASTM E-1527-00 related to the potential development of the area. Her work scope included site reconnaissance, site history and records review, interviews, report preparation and recommendations. Based on the findings in the Phase I, Phase II was performed. Ms. Brunner coordinated and oversaw soil boring installation and collected soil and groundwater samples.

Fulton Street Transit Center, New York, NY

While working with another firm, Ms. Brunner worked with a multi-company project team assisting with work pertaining to subsurface environmental issues. Ms. Brunner provided general environmental oversight of soil borings, collected groundwater samples from wells, conducted rising head slug tests, and calculated hydraulic conductivity estimates. She prepared the Health and Safety Plan, environmental portions of the work plan, and the Environmental Subsurface Investigation Plan.

DaimlerChrysler, Kenosha, WI

While with another firm, Ms. Brunner assisted in multiple phases of work at an approximately 100-acre DaimlerChrysler manufacturing facility. During construction of a new building, Ms. Brunner observed excavation activities, directed contaminated soil excavation, and managed dewatering treatment and discharge. Post-construction, Ms. Brunner assisted in the reconstruction of two groundwater remediation systems and an SVE system, including plumbing an oil water separator and stripper, and installing appropriate venting and sampling ports. Ms. Brunner also assisted in equipment start-up and subsequent troubleshooting and sampling of influent and effluent. On a quarterly basis, routine and troubleshooting maintenance work was performed on the pumps, flow meters, strippers, oil/water separators and other system components for six remediation systems. Ms. Brunner also directed and documented monitoring well installation, collected groundwater samples from up to 50 monitoring wells and sumps, and air samples from soil vapor extraction systems, reviewed and summarized field and laboratory data, and assisted in writing semi-annual and annual reports for this facility. Report preparation included quality assurance calculations, determination of quantity of free product and dissolved phase contaminant removal, and project narrative of activities completed during the reporting period.

APPENDIX E

COMMUNITY AIR MONITORING PLAN

2350 Fifth Avenue

NEW YORK, NEW YORK

Community Air Monitoring Plan

AKRF Project Number: 08010

NYSDEC Site #2-31-004

Prepared for:

2350 Fifth Avenue Corporation
309 East 94th Street, Ground Floor
New York, NY 10128

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

FEBRUARY 2012

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Environmental Summary 1
1.2 Purpose and Objectives 1
1.3 Operations to be Monitored 2
2.0 COMMUNITY AIR MONITORING PROCEDURES 2
2.1 VOC Direct Reading Monitoring 3
2.2 Particulate (Dust) Direct Reading Monitoring 3
2.3 Odor Monitoring 4
2.4 Equipment Operational Requirements 4
3.0 VOC, DUST AND ODOR CONTROLS 4
3.1 VOC Controls 4
3.2 Dust Controls 4
3.3 Odor Controls 5
4.0 COMMUNITY AIR MONITORING RECORDKEEPING 5

TABLES

Table 1 – Air Monitoring Summary Table

FIGURES

Figure 1 – Site Vicinity Map
Figure 2 – Site Plan
Figure 3 – Flow Chart for VOC and Particulate Monitoring Action Levels

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) provides details for the perimeter air monitoring during the removal of subslab insulation material and the overlying concrete/fill material from an area inside the building at 2350 Fifth Avenue, New York, New York. The Site is bounded by Fifth Avenue on the east, West 141st Street on the south, a garage and paved parking area on the west, and West 142nd Street on the north. (See Figure 1 for the project Site location.) The western boundary of the Site is about 50 feet east of Chisum Place. The Site extends about 200 feet north-south and about 345 feet east-west. The Harlem River is 100 to 200 feet to the east of the Site. The Site is approximately 68,942 square feet and nearly entirely occupied by a building comprising three connected sections from east to west: a two-story section along Fifth Avenue; a three-story section in the center; and a one-story section to the west.

High-rise residential buildings are located on the blocks to the west, south, and southeast of the Site. Harlem River Drive is located to the east/northeast, and a National Guard Armory occupies the block immediately to the north.

The Site is categorized as a Class 2 site (#231004) by the New York State Department of Environmental Conservation (NYSDEC) under its Inactive Hazardous Waste Disposal Site Remedial Program and investigative and remedial activities are being performed under an Order on Consent entered into by the owner. Following remedial investigation (RI) sampling performed from 1996 to 2009 and reporting in the June 2010 Remedial Investigation Report (RIR), a Feasibility Study (FS) was prepared in March 2011 to evaluate potential remediation options for the Site. The findings of the FS went before public comment with a 30-day public comment period and a public meeting on May 3, 2011. The NYSDEC subsequently issued a Record of Decision (ROD) for the selected remedy in May 2011. This Community Air Monitoring Plan (CAMP) is prepared to cover one element of the selected remedy presented in the ROD: removal and off-site disposal of contaminated insulation material present beneath the floor slab in an approximately 1,000 square foot area of the northwestern portion of the Site.

1.1 Environmental Summary

Previous Site investigations performed at the project site indicated that insulation material in the 1,000-square foot planned removal area was primarily brown cork (with some Styrofoam in the northwestern corner), 6 to 15 inches thick (average 10.9 inches), at depths ranging from 3 to 26 inches below grade beneath one or more concrete slabs. The insulation material is also underlain by a concrete slab.

Laboratory analytical samples of sub-slab insulation material indicated PCE concentrations from 0.9 to 560 part per million (ppm). Benzene, methyl-ethyl ketone, trichloroethene (TCE), and 1,1-dichloroethane were also detected with elevated concentrations. Insulation samples with PCE concentrations above 10 ppm were found in an approximately 1,000-square foot area located beneath Room 119 and the east-adjacent corridor, where PCE concentrations ranged from 24 to 560 ppm. This 1,000-square foot area with elevated PCE concentrations in sub-slab insulation comprises the extent of the planned removal area, detailed in the Remedial Action Work Plan (RAWP)-Phase I dated February 2012 prepared by AKRF and as shown on Figure 2.

Soil, groundwater, soil vapor and indoor air sampling have also been performed. The findings of these investigations are detailed in the RIR and summarized in the FS and ROD.

1.2 Purpose and Objectives

The principal purpose of the CAMP is to monitor air quality in the vicinity of the removal operations. The CAMP consists of monitoring dust, vapors and nuisance odors on a periodic/roving basis. Monitoring of this project will include real-time air monitoring for particulate matter/dust and VOCs, observations for visible emissions and odors, inspection and monitoring of the contractor's work practices, and reporting to the NYSDEC and the NYSDOH. Monitoring will be performed during all slab-intrusive activities.

Principal objectives of the program are as follows:

- Monitor VOC vapors such that vapors associated with the remedial actions are maintained below action levels.
- Monitor dust as PM_{10} such that dust associated with the remedial actions is maintained below action levels.
- Monitor VOCs and visible emissions so that vapors and dust from the excavation operations do not leave the Site.
- Monitor for nuisance odors to prevent odors that could impact the surrounding community.
- In the event that VOCs, dust or odors exceed action levels, construction personnel will be immediately notified so that all necessary corrective actions can be taken.

1.3 Operations to be Monitored

The remedial actions to be performed under this CAMP consist of:

- Removal of surficial floor slab in the designated approximately 1,000-square foot area.
- Excavation/removal of fill material beneath the top slab and any additional sub-grade concrete/asphalt/tar paper layers.
- Removal of insulation material. Note that the fill material directly beneath the surface floor slab may also contain areas of insulation material. All insulation material will be handled as hazardous waste to minimize the possibility of cross-contamination during staging.
- Placement of a vapor barrier.
- Backfill with clean, segregated material and imported clean fill to the bottom of the floor slab, then repair the concrete slab to match the adjacent surface.

2.0 COMMUNITY AIR MONITORING PROCEDURES

All intrusive activities, from the initial cutting through the surficial floor slab through the final restoration (capping) of the floor slab, will be performed within an isolated enclosure with negative pressure exhausted outside the building. Work zone air monitoring will be performed continuously inside the isolation enclosure during all active work in accordance with the Health and Safety Plan (HASP) provided as Appendix D of the RAWP - Phase 1. Community air monitoring will be performed periodically (at a minimum once per hour) on a roving basis around any active work area(s). Work areas may include the following: inside the building around the outside of the isolation enclosure, the negative pressure exhaust point, and/or any stockpile/staging areas outside of the enclosure.

The action levels specified herein require increased monitoring, corrective actions to abate emissions (see Section 3.0), and/or work shutdown. Table 1 summarizes dust, VOC and odor action levels and appropriate actions. As a supplement to Table 1, a flow chart summarizing action levels/actions provided on Figure 3.

2.1 VOC Direct Reading Monitoring

VOC monitoring equipment will consist of a photoionization detector (PID) capable of detecting the VOCs found in the insulation material and the underlying soil and groundwater. The monitoring equipment will be calibrated on a daily basis and documented in a dedicated field log book. The instrument will be capable of calculating 15-minute running average concentrations, which will be compared to the prescribed action levels.

Readings will be subtracted from the background concentrations, to be measured each day prior to the start of work, to establish concentrations reflective of work activities during the periods between collection of background readings.

The 15-minute average concentrations will be compared to the following:

- If the ambient air concentration of total organic vapors exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with measures taken to reduce vapors and continue monitoring.
- If total organic vapor levels persist at levels in excess of 5 ppm over background, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. If the organic vapor level is repeatedly over 25 ppm above background, activities must be shutdown and the engineering controls and the Site work plan re-evaluated.

2.2 Particulate (Dust) Direct Reading Monitoring

The particulate monitoring will be performed using real-time aerosol or particulate 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 established below. The dust monitor will be equipped with an audible alarm to indicate exceedance of the action level, and will be zeroed on a daily basis in accordance with the manufacturer's operating instructions and documented in a dedicated logbook. In addition, fugitive dust migration will be visually assessed during all work activities.

The primary standards for PM_{10} are 150 micrograms per cubic meter ($\mu g/m^3$) over a 24-hour averaging time and 50 $\mu g/m^3$ over an annual averaging time. Both of these standards are averaged arithmetically. The action level will be established at 150 $\mu g/m^3$ above background, over 15-minute time weighted average (TWA). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety.

The 15-minute average concentrations will be compared to the following:

- If the particulate measurement is between 100 $\mu g/m^3$ and 150 $\mu g/m^3$ above the background level, additional dust suppression techniques will be implemented to reduce the generation of fugitive dust and corrective action taken to protect Site personnel and reduce the potential for contaminant migration.
- If the dust suppression measures being utilized at the Site do not lower particulates to an acceptable level (e.g., below 150 $\mu g/m^3$ above the background level, and no visible dust from the work area), work will be suspended until appropriate corrective measures are implemented to remedy the situation.

2.3 Odor Monitoring

Subsurface excavation work exposing contaminated materials may cause odors to be detectable. This may cause concern among the on-site workers, visitors to the Site, and the nearby community regarding potential health risks. Health risks or the potential for health risks do not rely strictly on detectable odors. However, controlling odor emissions from a site can allay public fears about health risks and provide additional means of controlling nuisance emissions during remediation activities. Periodic walk-around monitoring will be performed to observe perceptible odor that may be a nuisance to nearby sensitive receptors. If perceptible odors are noted adjacent to a nearby receptor or a complaint is received, work will be suspended until appropriate corrective measures are implemented to remedy the situation.

2.4 Equipment Operational Requirements

The air monitoring equipment must be operated by trained and qualified personnel. Personnel who perform air monitoring functions described in this section shall be experienced in the use of field air monitoring equipment, as well as the air monitoring procedures described above. There must also be appropriate staff (chemist, industrial hygienist or environmental scientist) for assessing the results of air monitoring and advising field personnel of air quality considerations.

3.0 VOC, DUST AND ODOR CONTROLS

The information and procedures presented in this section will be used for VOC, dust and odor control during activities summarized in Section 1.3. The construction manager for the project will be responsible for implementing these procedures based on the air monitoring results and required Action Levels described in Table 1 and Figure 3. The information and procedures that are to be used for VOC, dust and odor control are presented in the following sub-sections.

3.1 VOC Controls

Control of VOCs during excavation work or other soil disturbance activities will consist of the construction manager implementing one or more of the following methods or measures:

- Covering stockpile or other material staging areas
- Covering the exposed excavation/removal areas
- Wetting excavated material
- Backfilling the excavation

3.2 Dust Controls

The primary measure of preventing exposure to dust during excavation or other soil disturbance activities will be wetting techniques. The Contractor will provide for engineering controls (wet techniques) or other techniques (e.g., covering exposed soil surfaces, limiting active work areas) to control dust during work tasks that have the potential for generating dust. Dust controls involving the use of water (wetting or water spraying) will be employed at potential dust generating activity areas as follows.

- Before each task is initiated
- During the tasks to keep the materials damp
- When air monitoring results dictate the need for dust control

3.3 Odor Controls

Control of odors during excavation work or other soil disturbance activities will consist of one or more of the following measures:

- Covering stockpile or other material staging areas
- Covering the exposed excavation/removal areas
- Wetting excavated material
- Backfilling the excavation

4.0 COMMUNITY AIR MONITORING RECORDKEEPING

The qualified safety officer or technician will ensure that all air monitoring data is logged in a log book or on daily field log sheets to document observations as part of the community air monitoring. Documentation shall be made clear, concise, and provide the date, time of entry, location, personnel, weather conditions, and measured concentrations. Documentation will also include all observational data that has potential for impacting results, such as potential off-site interferences, on-site public interferences, damage to instruments, Site equipment problems, or weather related interferences.

All pages must be numbered; no lines shall be left blank (or put a line through it), and must be initialed on each page in ink. The last entry page for the shift or day that has blank space left at the bottom shall have a line drawn diagonally across it and signed at the bottom of the page. All corrections must be made with a single line, initialed, and dated.

Copies of the log book or field log sheets will be submitted to NYSDEC with the Closure Report. The Owner and NYSDEC will be notified promptly via phone and electronic mail of any exceedance of an Action Level and of the corrective actions taken in connection with the exceedance. If an exceedance occurs, the Environmental Consultant will ensure corrective actions are taken document the actions and results in the Closure Report.

All monitoring equipment must be calibrated on a daily basis in accordance with the manufacturer’s operating instructions. A dedicated log book for each monitoring unit will be maintained that details the date, time, calibration gas, or other standard, and name of person performing the calibration.

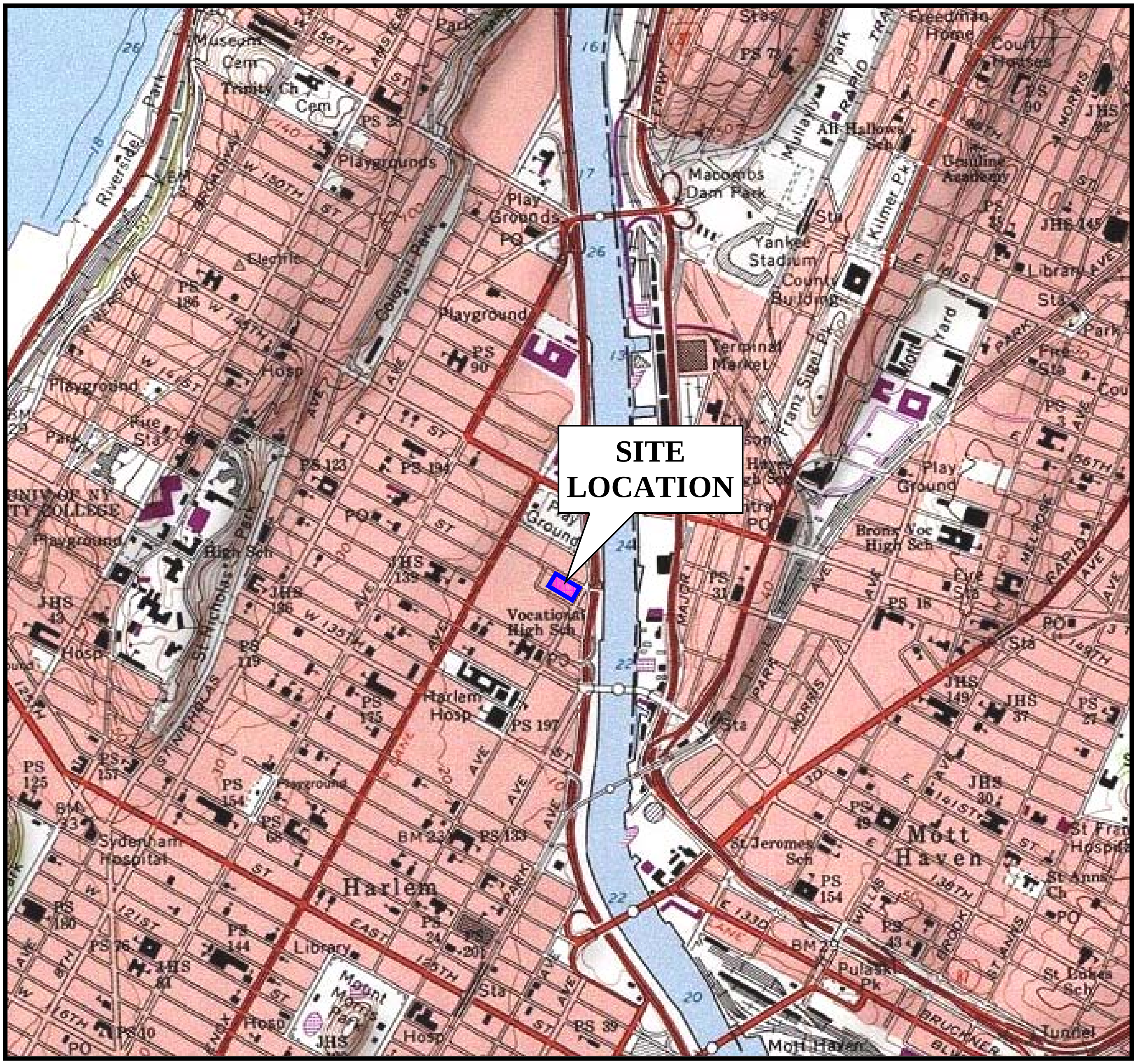
TABLES

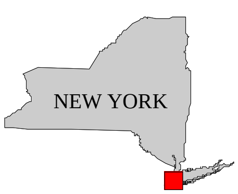
Table 1
Air Monitoring Summary
2350 Fifth Avenue, New York, NY

Monitoring Device	Monitoring Location/Personnel	Monitoring Frequency	Action Level	Action
PID	Perimeter of Work Area	Periodic during all disturbance activities Background is the most recent upwind 15-minute average reading	< 5 ppm above background at the downwind perimeter of the work zone (15-min TWA) > 5 ppm but < 25 ppm above background at the downwind perimeter of the work zone (15-min TWA) > 25 ppm above background at the downwind perimeter of the work zone (15-min TWA)	Continue normal operations Suspend operations until readings indicate < 5 ppm for 15-minute TWA. Take steps to abate emissions* Shut down operations and reevaluate work and controls
PM-10 Aerosol/ Particulate Air Monitoring Unit with Audible Alarm	Perimeter of Work Area	Periodic during all disturbance activities Background is the most recent upwind 15-minute average reading	< 100 $\mu g/m^3$ above background at the downwind perimeter of the work zone (15-min TWA) > 100 $\mu g/m^3$ above background at the downwind perimeter of the work zone (15-min TWA), or visible dust leaving the excavation area > 150 $\mu g/m^3$ above upwind background level downwind perimeter of the work zone (15-min TWA)	Continue normal operations Implement dust control measures* Halt all soil disturbance work until downwind perimeter of excavation area reading is <150 $\mu g/m^3$ above background (upwind perimeter).
Olfactory	Perimeter of Work Area	Periodic during all disturbance activities	Perceptible odors outside work zone, adjacent to receptor, or complaint	Suspend operations until odor condition abated. Take steps to abate odor*

NOTES:
*See VOC, dust and odor control measures in Section 3.0 of the CAMP
TWA - Time weighted average
PID – Photoionization detector
$\mu g/m^3$ – Microgram per cubic meter
ppm – Parts per million

FIGURES





SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

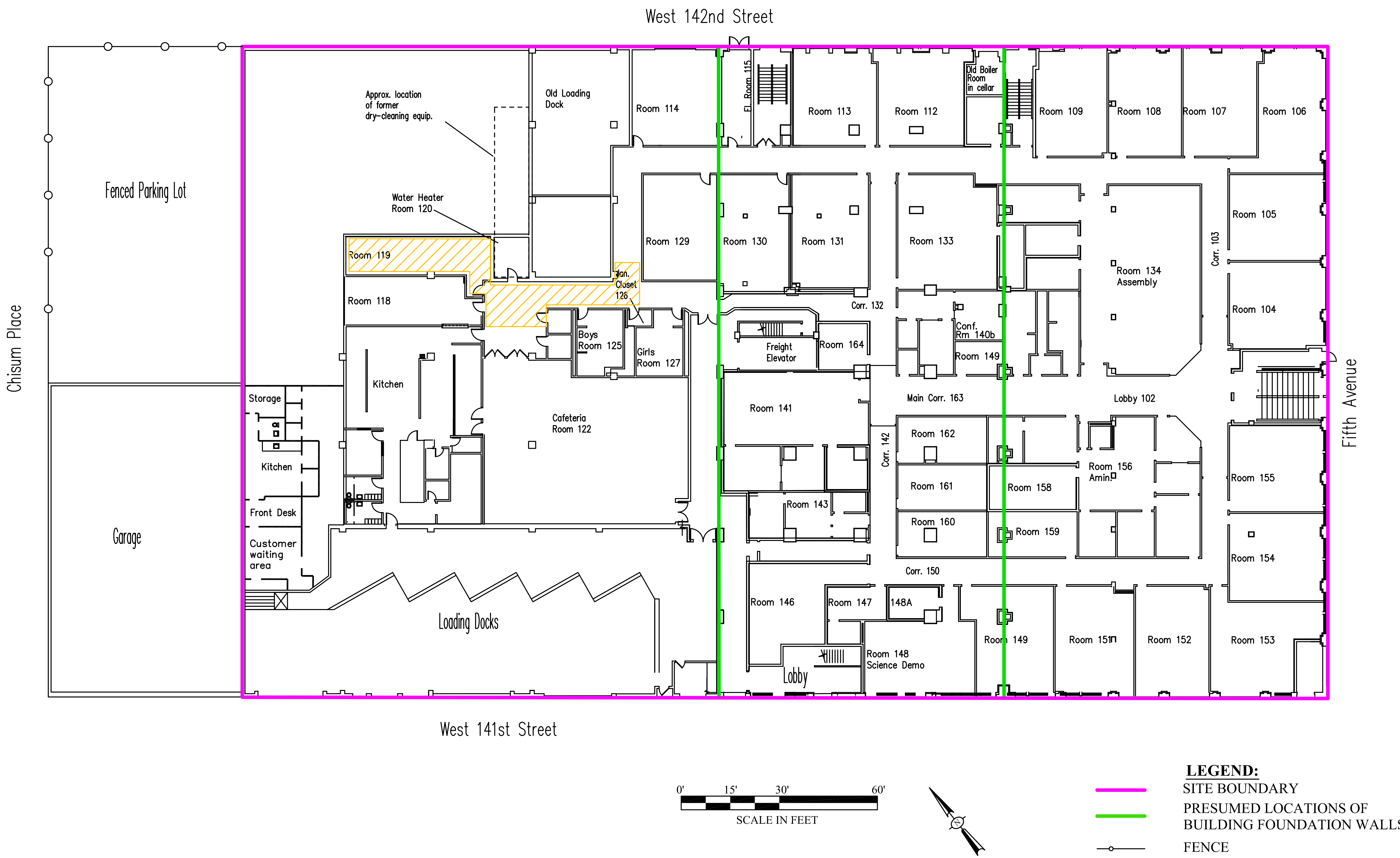
SOURCE:
7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: CENTRAL PARK, NY 1995

2350 FIFTH AVENUE
NEW YORK, NEW YORK

PROJECT SITE LOCATION

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**1.20.11**
PROJECT No.	**08010**
SCALE	**as shown**
FIGURE	**1**



LEGEND:

- SITE BOUNDARY
- PRESUMED LOCATIONS OF BUILDING FOUNDATION WALLS
- FENCE
- MAXIMUM EXTENT OF INSULATION REMOVAL AREA

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

2350 FIFTH AVENUE
NEW YORK, NEW YORK

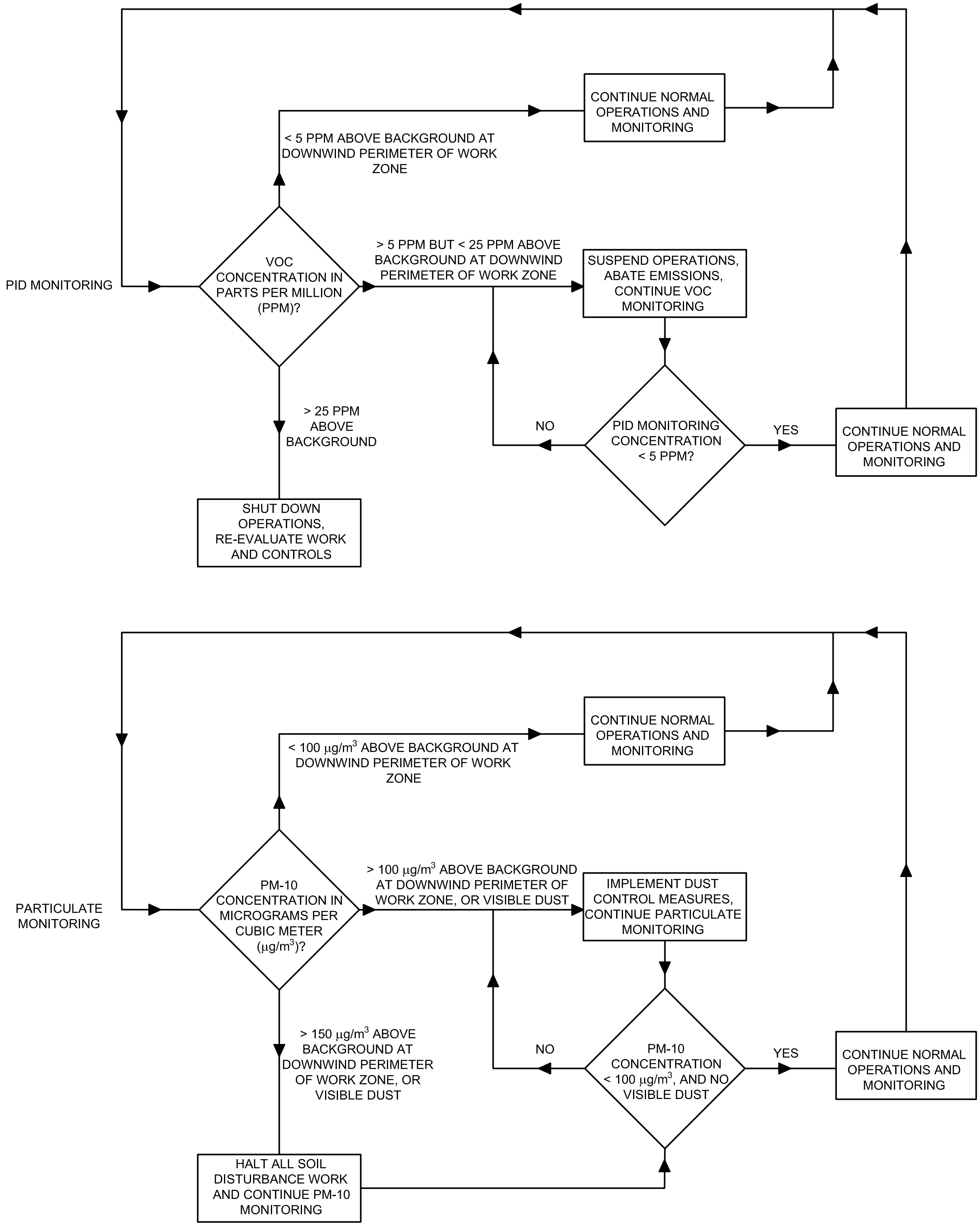
SITE PLAN

DATE
6.27.11

PROJECT NO.
08010

SCALE
1"=30'

FIGURE
2



2350 FIFTH AVENUE

NEW YORK, NEW YORK

FLOW CHART FOR VOC AND PARTICULATE MONITORING ACTION LEVELS

AKRF

Environmental Consultants

440 Park Avenue South, New York, N.Y. 10016

DATE
7.15.2011

PROJECT No.
08010

SCALE
as shown

FIGURE
3

APPENDIX F

FEBRUARY 2011 REVISED CITIZEN PARTICIPATION PLAN

2350 Fifth Avenue

NEW YORK, NEW YORK

Revised Citizen Participation Plan

NYSDEC Inactive Hazardous Waste Site Program Site #2-31-004

Prepared for:
2350 Fifth Avenue Corporation
309 East 94th Street, Ground Floor
New York, NY 10128

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

FEBRUARY 2011

TABLE OF CONTENTS

Section **Page Number**

1. What is New York's Inactive Hazardous Waste Disposal Site Program? ... 1
2. Citizen Participation Plan Overview ... 2
   - Project Contacts ... 2
   - Document Repositories ... 2
   - Site Contact List ... 2
   - CP Activities ... 3
3. Site Information ... 3
   - Site Description ... 3
   - Site History ... 4
   - Environmental History ... 5
4. Remedial Process ... 8
   - Investigation ... 8
   - Selection of the Preferred Remedy ... 8
   - Construction ... 9
   - Reclassification and Site Management ... 10
5. Citizen Participation Activities ... 10
6. Major Issues of Public Concern ... 11

APPENDICES

Appendix A – Site Location Map
Appendix B – Project Contacts and Document Repositories
Appendix C – Site Contact List
Appendix D – Identification of Citizen Participation Activities
Appendix E – Inactive Hazardous Waste Site Cleanup Program Process

* * * * *

Note: The information presented in this Revised Citizen Participation Plan was current as of the date of its submittal. Portions of this Citizen Participation Plan may be revised during the remedial process.

Responsible Party: **2350 Fifth Avenue Corporation**
Site Name: **2350 Fifth Avenue ("Site")**
Site Address: **2350 Fifth Avenue**
Site County: **New York**
Site Number: **231004**

1. What is New York's Inactive Hazardous Waste Disposal Site Program?

The Inactive Hazardous Waste Disposal Site (IHWDS) Program is the State's program for identifying, investigating and cleaning up sites where consequential amounts of hazardous waste may exist. These sites go through a process of investigation, evaluation, cleanup and monitoring that has several distinct stages. For an explanation of the different stages of the investigation and cleanup process, please refer to New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's (DER's) fact sheets on stages of the investigation and cleanup process.

DER is made aware of potential hazardous waste sites in a variety of ways, including notification by the responsible party and citizen complaints.

An environmental investigation called a Preliminary Site Assessment (PSA) is performed when DER is made aware that hazardous waste has or may have been disposed of at a site. The goal of the PSA is to determine whether a site meets the state's definition of an inactive hazardous waste disposal site by confirming the presence of hazardous waste and determining the threat posed by the Site to public health or the environment. DER or the potentially responsible party performs the PSA. For more information, you can read DER's fact sheet on PSAs.

Once the presence of a consequential amount of hazardous waste is confirmed at a site, the Site is added to the State's official list of sites and is given a classification code.

Sites determined to be Class 2 (representing a significant threat to public health and/or the environment and requiring action) usually undergo a detailed environmental investigation, called a remedial investigation. When the parties responsible for the contamination are known, the responsible parties often pay for and perform the investigation and evaluation of cleanup options. At sites where responsible parties cannot be found or are unable or unwilling to fund an investigation, the State pays for the investigation using money from the 1986 Environmental Quality Bond Act, also known as the "State Superfund." The State may try to recover costs from a responsible party after the investigation and cleanup are complete.

Each Class 2 site is assigned a project manager. Regional IHWDS Program staff serve as project managers for many inactive hazardous waste disposal sites in their respective regions. Staff in DEC's Albany office serve as project managers for the remaining sites. For sites where state money pays for an investigation, the project manager oversees the investigation and evaluation of cleanup options directly, or he may supervise a consultant hired to do the work. When a responsible party performs an investigation, the project manager reviews and approves investigation work plans and reports and ensures the responsible party performs a thorough and proper investigation. The project manager also works closely with New York State Department of Health staff who ensure that public health concerns are addressed

For more information about the IHWDS, go online at:
http://www.dec.ny.gov/chemical/8439.html

2. Citizen Participation Plan Overview

This Citizen Participation (CP) Plan provides members of the affected and interested public with information about how NYSDEC will inform and involve them during the investigation and remediation of the Site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Responsible Party.

Appendix A contains a map identifying the location of the Site.

Project Contacts

Appendix B identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's remedial program. The public's suggestions about this CP Plan and the CP program for the Site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Document Repositories

The locations of the site's document repositories also are identified in Appendix B. The document repositories provide convenient access to important project documents for public review and comment.

Site Contact List

Appendix C contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and remediation process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming remedial activities at the Site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

Where the site or adjacent real property contains multiple dwelling units, the Responsible Party will work with NYSDEC to develop an alternative method for providing such notice in lieu of mailing to each individual. For example, the owner of such a property that contains multiple dwellings is requested to prominently display fact sheets and notices required to be developed during the site's remedial process. This procedure would substitute for the mailing of such notices and fact sheets, especially at locations where renters, tenants and other residents may number in the hundreds or thousands, making the mailing of such notices impractical.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix B. Other additions to the site contact list may be made on a site-specific basis at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

Appendix D identifies the CP activities, at a minimum, that have been and will be conducted during the site's remedial program. The flowchart in Appendix E shows how these CP activities integrate with the site remedial process. The public is informed about these CP activities through fact sheets and notices developed at significant points in the site remedial process.

> **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and remediate a site.
>
> **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and remediation.

The public is encouraged to contact project staff at any time during the site's remedial process with questions, comments, or requests for information about the remedial program.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 6 or in the nature and scope of remedial activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

3. Site Information

Site Description

The Site is located in the Harlem section of Manhattan. It is bounded by Fifth Avenue on the east, West 141st Street on the south, a garage and paved parking area on the west, and West 142nd

Street on the north. (See Appendix A for the project site location.) The western boundary of the Site is about 50 feet east of Chisum Place. The Site extends about 200 feet north-south and about 345 feet east-west. The Harlem River is 100 to 200 feet to the east of the Site.

The Site is occupied by a building comprising three connected sections: a two-story section along Fifth Avenue, a three-story section in the center of the Site, and a one-story section to the west. There are high-rise residential buildings on the blocks to the west, south, and southeast of the Site. The Harlem River Drive is to the northeast, and a National Guard Armory occupies the block to the north, between West 142nd and West 143rd Streets.

No significant demolition and/or development are currently planned for the site. Reasonably foreseeable future uses are limited to those that would be permitted (without variances or waivers) under the site's current zoning and approvals, which may include (among other things) a self-storage facility, art studio space, church and/or school. The site is zoned for light manufacturing (M1-1) and is located in a mixed-use residential, recreational, commercial and industrial area.

Site History

The existing building was originally constructed as an ice cream factory by the Bordens Ice Cream Company. The three-story section was built in 1923; the two-story section was built in 1932; and the one-story section was built in 1950. The floor slab at the western end of the building (in the one-story section built in 1950) was constructed with various layers of insulating materials related to the original use of the building as a refrigerated ice cream plant.

Following its use as an ice cream factory, the building was occupied by a commercial laundry from 1970 to 1994. The laundry operated under a variety of names including Budge-Wood Service, Bluebird Laundry, and Swiss-American Laundry. The facility included a dry cleaning operation utilizing tetrachloroethene (PCE) as a cleaning solvent. The dry cleaning operation was located near the northern side of the one-story portion of the building, just west of the West 142nd Street loading dock. PCE was stored in the same area. The operations initially used first-generation machines with separate washers and dryers. Around 1984, these were replaced by second-generation machines, which were single units that performed all of the washing, extraction, and drying operations.

In 1995-1996, most of the ground floor of the building, with the exception of the far western portion, was renovated for use as a New York City public school. This portion of the building was occupied as a school for a brief period in the fall of 1997 and was later used by a church for services, offices, and classes. The church left the building in December 2004. The remainder of the building was renovated in 2001 for use as a self storage facility. An office was constructed next to the West 141st Street loading docks and storage units were constructed in the western portion of the ground floor and on the second and third floors. In February 2006, the self storage facility expanded into the former school portion of the building.

The surrounding area was mostly occupied by garages, auto repair shops, and light manufacturing in the 1930s through the 1950s, with the exception of the block directly north of the Site, where the Fifth Avenue Armory was constructed between 1921 and 1933. The Delano Village residential development (now known as Savoy Park), which occupies the area to the south and west of the Site, was constructed in 1957-1959. At that time, a portion of West 141st Street was closed and demapped, and a new street, Chisum Place, was constructed just west of the Site.

Environmental History

Investigations performed between 1996 and 2009 included the collection of core samples, and soil, groundwater, and soil gas samples at the site and at off-site locations. The major contaminant of concern identified on the site was PCE and its breakdown products (trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride), which appears to be largely limited to the northwestern portion of the site in and around the area of the former dry cleaning activities. Some evidence of petroleum contamination was also detected, particularly in one of the monitoring wells on the northern side of the site, in the 142nd Street sidewalk.

Following initial discovery of the contamination, an Interim Remedial Measure (IRM) was implemented in 1997 with the intention of preventing intrusion of vapors into the indoor air of the building. The IRM consisted of three measures: removal of a portion of the contaminated insulating material; installation of an intra-slab and shallow soil vapor extraction system which continues to operate; and sealing penetrations through the slab.

The results of the remedial investigation activities completed to date were provided in the June 2010 *Remedial Investigation Report* (RIR) and the general distribution of contaminants on the site are summarized in following sections.

<u>Groundwater</u>

PCE and decomposition products were detected in samples from 7 of the 24 groundwater monitoring wells in 2007 and 2009. The highest chlorinated volatile organic compound (VOC) levels were present in the West 142nd Street sidewalk, just north of the source area. The primary contaminants at this location are cis-1,2-DCE and vinyl chloride. No PCE or decomposition products were detected in the sample from the deep well at this location. PCE decomposition compounds cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride were detected at levels that exceed the Class GA Groundwater Standards in a sample collected across the street from the highest concentration, on the north sidewalk of West 142nd Street.

PCE and decomposition products were also detected near the original dry cleaning area, with PCE concentrations exceeding the NYSDEC Class GA Groundwater Standards in

2009 in three monitoring wells. In the most recent (2009) sampling event, no VOCs were detected in 16 of the 24 monitoring wells. Chlorinated VOC concentrations have decreased significantly from 2007 to 2009 in groundwater samples collected from monitoring wells within the source area.

The subsurface capacity for natural biodegradation of chlorinated solvents was evaluated near the source area and found to be generally reducing (conditions that encourage biodegradation of chlorinated solvents). Natural attenuation of chlorinated solvents can also be accelerated by the presence of dehalogenating bacteria in addition to a reducing environment. These bacteria were not sampled for directly, but indicator parameters (byproducts of bacterial dehalogenation of chlorinated solvents) were detected in the majority of samples including indicators for bacteria efficient at breakdown of chlorinated solvents.

About 1 inch of light non-aqueous phase liquid (LNAPL) was measured in one monitoring well on the northern side of the site. A petroleum fingerprint analysis indicated the substance was consistent with motor oil.

Soil

PCE and associated decomposition products (TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride) were only detected in soil samples from the western portion of the site. Over 85 percent of soil samples collected from October 2007 to December 2009 contained low levels (less than 1 milligram per kilogram [mg/kg]) of PCE. Only seven samples from locations near the area where dry cleaning operations had taken place had PCE levels exceeding Part 375 Soil Cleanup Objectives (SCOs) for Protection of Groundwater. Of the seven samples with PCE exceedances, PCE breakdown products were present in levels exceeding Protection of Groundwater SCOs in three samples.

Petroleum-related hydrocarbons were detected at concentrations below Part 375 SCOs for Protection of Groundwater in samples from several locations on the northern side of the building and around the old boiler room. The former boilers that serviced the laundry operation used #6 fuel oil that does not contain significant levels of the volatile compounds detected. A possible source of the hydrocarbon contamination is a former diesel tank that was reportedly located under the north side of the building.

Soil Gas

Contamination in the soil gas across the study area is primarily PCE. PCE was detected in all the soil gas samples collected from 2007 to 2009, with the highest level, 332,000 microgram per cubic meter ($\mu g/m^3$), at SG-7, located under the West 142nd Street sidewalk near the old loading dock entrance. This is also the area where the highest soil and groundwater contaminant levels were found. Levels of PCE in other soil gas samples were much lower, and were found to decrease with distance from the source area.

Indoor Air

Prior to implementation of the Interim Remedial Measures (IRMs) in 1997, several rounds of indoor air testing found levels of PCE in the building air exceeding 115 $\mu g/m^3$ and ranging as high as 1,424 $\mu g/m^3$. The highest levels were near the source area and in the portions of the building underlain by insulating materials. Both PCE and TCE have been detected at much lower levels in air testing performed since the IRMs were completed in 1997.

The majority of sampling events since 1997 have found both PCE and TCE concentrations below the New York State Department of Health (NYSDOH) Air Guideline Values (100 $\mu g/m^3$ for PCE and 5 $\mu g/m^3$ for TCE). In recent years (since 2007), PCE and TCE levels above the NYSDOH Air Guideline Values have been occasionally detected in indoor air samples. The highest concentrations were found in the old boiler room/basement and inside Locker 1454; both are closed locations with limited air flow and are not occupied spaces.

Since 2007, PCE concentrations in indoor air (including the two aforementioned unoccupied spaces) have ranged from no detection to 980 $\mu g/m^3$ and TCE concentrations in indoor air have ranged from no detection to 70 $\mu g/m^3$. Excluding the old boiler room and Locker 1454 sampling locations, PCE concentrations in indoor air have ranged from no detection to 170 $\mu g/m^3$ and TCE concentrations in indoor air have ranged from no detection to 9.5 $\mu g/m^3$.

Sub-Slab Insulation

Removal of a portion of the sub-slab insulation material was performed in 1997 in the northwestern corner of the site, in the area presently in use as storage lockers. Insulation material remains in the area adjacent to the south and southwest of this area as confirmed by core sampling conducted in December 2009. Insulation material was primarily brown cork 3 to 12 inches thick at depths ranging from 6 inches to 3.5 feet below grade. PCE concentrations in the insulation remaining after partial removal ranged from 23 micrograms per kilogram (µg/kg) to 560,000 µg/kg. Levels of PCE greater than 10,000 µg/kg were situated in the northern corridor for the most part, with significantly lesser concentrations (generally less than 1,000 µg/kg) present in the kitchen insulation, cafeteria and in the insulation material to the east.

4. Remedial Process

Investigation

The remedial investigation (RI) of the Site was performed with NYSDEC oversight in accordance with remedial investigation work plans (RIWPs). The goals of the investigation were as follows:

1) Define the nature and extent of contamination in soil, soil gas, groundwater and any other impacted media;

2) Identify the source(s) of the contamination;

3) Assess the impact of the contamination on public health and/or the environment; and

4) Provide information to support the development of a Remedial Action Work Plan (RAWP) to address the contamination, or to support a conclusion that the contamination does not need to be addressed.

The Responsible Party prepared an RIR in June 2010 summarizing the results of the RI. The RIR was subject to review and approval by NYSDEC. Before NYSDEC approval of the RIR, a fact sheet that described the RIR was sent to the site contact list.

Selection of the Preferred Remedy

After NYSDEC approved the RIR, the Responsible Party developed a Feasibility Study (FS) with a *Draft Feasibility Study* submitted in June 2010 and a *Feasibility Study Addendum* submitted in December 2010. The FS described how the Responsible Party proposed to address contamination related to the Site. The preferred remedial option (Revised Alternative 4 presented in the *Feasibility Study Addendum*) consisted of the following elements:

- Soil vapor extraction (SVE) system – mobilizing and volatilizing contamination and creating negative pressure below the slab in an approximate 8,000-square foot area located in the northwestern portion of the site;
- In-situ soil treatment – injecting a chemical oxidation product for soil treatment in an approximate 2,500-square foot area located in the northwestern portion of the site;
- In-situ groundwater treatment – injecting a product to enhance reductive dechlorination (and potentially a follow-up product to promote aerobic degradation) in an approximate 6,000-square foot area located in the northwestern portion of the site;
- LNAPL removal – evaluate extent of LNAPL and recovery as appropriate on the northern side of the site;

- Sub-slab depressurization system (SSDS) – sub-slab extraction points throughout the existing building to address potential vapor intrusion from beneath the slab into the building; and
- Partial insulation material removal – removing additional sub-slab insulation material in an established maximum removal area of 1,200-square feet in the northwestern portion of the site.

Revised Remedial Alternative 4 is protective of the public health and environment, effective and permanent, implementable, and the toxicity and volume of contamination would be reduced with some removal and would continue over time. Implementation of a Site Management Plan and environmental easement would prevent future exposure to residual contamination and ensure proper long-term protection of public health. The details of the remediation will be evaluated as part of remedial design, which will occur after NYSDEC approval of the FS.

Upon completion of the public comment process, NYSDEC will prepare the Proposed Remedial Action Plan (PRAP), which identifies the preferred remedy to address the site contamination, and present the PRAP at a public meeting. The public will have the opportunity to review and comment on the PRAP. NYSDEC will factor this input into its decision to approve, reject or modify the PRAP. When a final decision is reached on the PRAP, NYSDEC will issue a Record of Decision (ROD). The ROD is the culmination of extensive investigations and a remedy selection that identifies a solution that eliminates significant threats to public health and the environment. It serves as the definitive record of the remedy selection process for the Site and a convenient reference to other documents that were developed during the remedy selection process.

Construction

Issuance of a ROD by NYSDEC will allow the Responsible Party to design and construct the alternative selected to remediate the Site. The Remedial Design Work Plan will be submitted for NYSDEC approval. The site contact list will receive notification before the start of site remediation. When the Responsible Party completes remedial activities, it will prepare a Final Engineering Report (FER) that certifies that remediation requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the remediation is protective of public health and the environment for the intended use of the Site. Addressees on the site contact list will be sent a fact sheet that announces the FER is available for review and the completion of remedial activities.

Reclassification and Site Management

Following remediation, a site usually is reclassified from Class 2, which calls for remedial action to protect public health or the environment, to:

Class 4, requiring continued operation, maintenance and monitoring, or
Class 5, requiring no operation, maintenance and monitoring.

If all hazardous wastes have been removed, the Site may be removed (delisted) from the Registry of Inactive Hazardous Waste Sites.

Included in some remedies are monitoring requirements, which are included in a Site Management-Plan (SMP). Site management includes Operation and Maintenance (O&M) of any active or passive remedial system, and includes visual inspections and upkeep and can include sampling.

For more information and a description of the Inactive Hazardous Waste Disposal Site program see the NYSDEC Web Site (http://www.dec.ny.gov/chemical/8439.html).

5. Citizen Participation Activities

CP activities that have already occurred and are planned during the investigation and remediation of the Site under the Inactive Hazardous Waste Site Program are identified in Appendix D: Identification of Citizen Participation Activities. These activities also are identified in the NYSDEC flowchart of the Inactive Hazardous Waste Site Program process in Appendix E. NYSDEC will ensure that these CP activities are conducted, with appropriate assistance from the Responsible Party.

All CP activities are conducted to provide the public with significant information about site findings and planned remedial activities, and some activities announce comment periods and request public input about important draft documents such as the Remedial Action Work Plan.

All written materials developed for the public will be reviewed and approved by NYSDEC for clarity and accuracy before they are distributed. Notices and fact sheets can be combined at the discretion, and with the approval of, NYSDEC.

Potential environmental justice (EJ) issues will be considered in evaluation of the planned remedial activities. Each particular community may possess unique attributes to recognize and address so citizen participation efforts provide for an open and accessible process. For example:

- An EJ community may be disproportionately impacted by pollutants and other forms of contamination. Lack of participation or silence in the past should not be interpreted as lack of concern or interest in these issues.
- EJ communities may not trust or, in some cases, may fear the government because of perceived or unintended experiences of injustices or diverse cultural backgrounds.
- Additional collaborative efforts with EJ communities may be needed to help them participate more effectively in the remedial process, including additional technical assistance provided directly by NYSDEC Division of Environmental Remediation staff.
- In communities where English is not the primary language, materials may need to be developed in the applicable language.

The site is located in Manhattan Community Board 10 (CB10), but immediately adjacent to property in Community Board 11 (CB11); therefore both areas are considered for community participation. The total populations of CB10 and CB11 based on the Census Data are 107,109 and 117,743, respectively. The percent of the CB10 population on Income Support rose from 34.3% to 40.8% from 2000 to 2007 and the percent of the CB11 population on Income Support rose from 36.7% to 44.4% in the same time frame.

The CB10 population is 77.3% Black African American and 16.8% Hispanic. Approximately 88.6% of the total CB10 population 5 years old and over is proficient in English; however, 64.3% of the population speaks Spanish or Spanish Creole at home. The CB11 population is 35.7% Black African American and 52.1% Hispanic. Approximately 73.0% of the total CB11 population 5 years old and over is proficient in English; however, 88.5% of the population speaks Spanish or Spanish Creole at home.

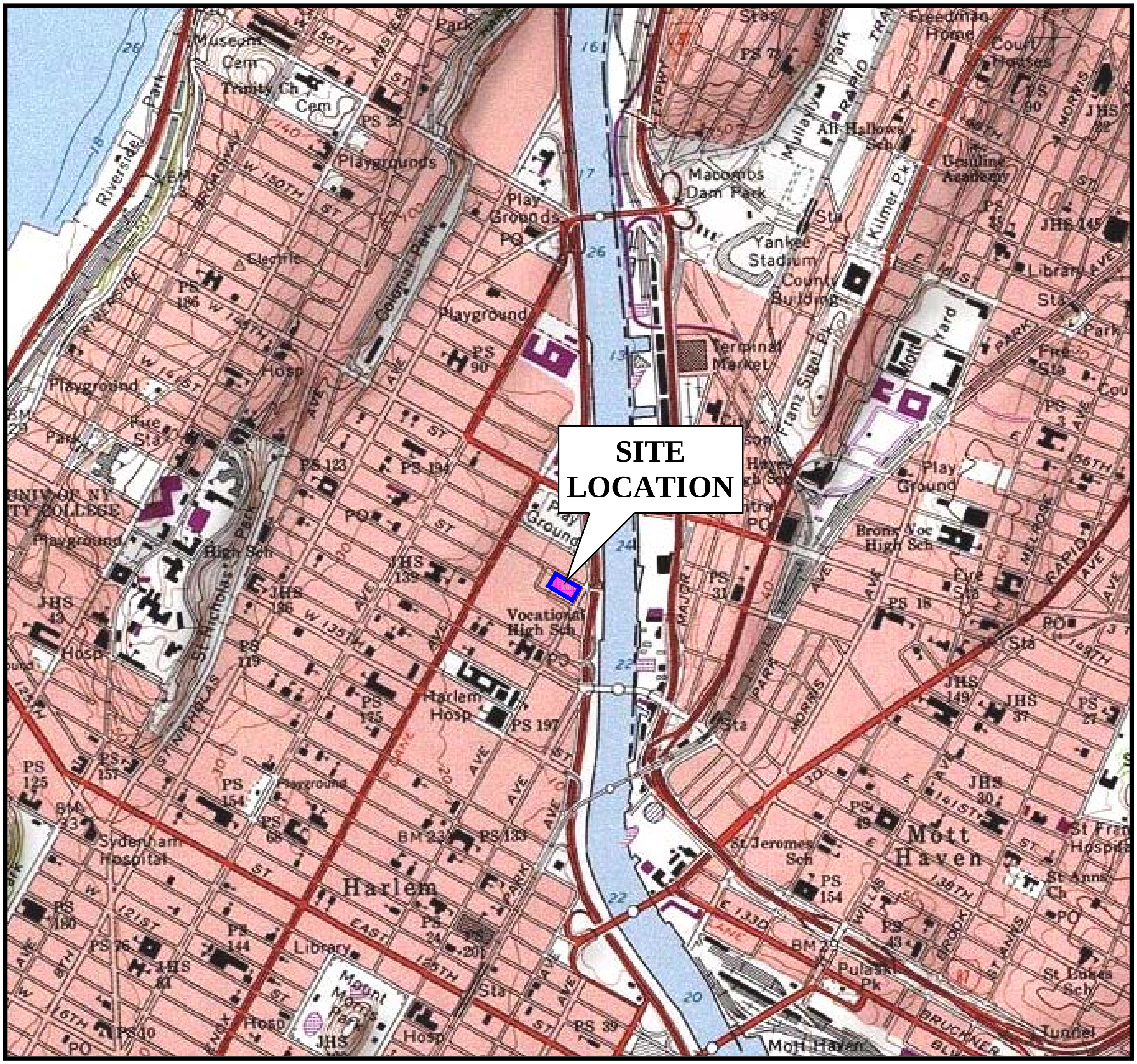
Based on this Census Data, any public fact sheets associated with the implementation of this CP Plan will be translated into Spanish. In addition, if a public hearing/meeting is required for this project, a Spanish-speaking agent may be made available.

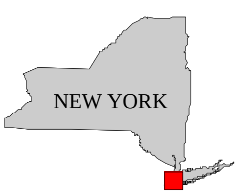
6. Major Issues of Public Concern

The major issue of public concern for this site has been the potential for intrusion of vapors from the soil into the building on the Site or neighboring buildings. Sampling has indicated that vapor intrusion potential is limited to the building on-site. On-site indoor air is being monitored quarterly and occasional exceedances of the NYSDOH Air Guidelines were identified at only two sampling locations, both presently unoccupied spaces with stagnant air. In addition, an off-site vapor intrusion assessment was performed as part of the RI. The indoor air and sub-slab vapor sample results were applied to NYSDOH matrices for evaluation of PCE and TCE, and no further action was recommended off-site.

If additional issues of public concern are raised, they will be addressed as appropriate in subsequent work at the site.

Appendix A – Site Location Map





SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’

N

SOURCE:

7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: CENTRAL PARK, NY 1995

2350 FIFTH AVENUE
NEW YORK, NEW YORK

PROJECT SITE LOCATION

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	**1.20.11**
PROJECT No.	**08010**
SCALE	**as shown**
FIGURE	**1**

Appendix B – Project Contacts and Document Repositories

Project Contacts

For information about the site's remedial program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Bryan Wong
Project Manager
NYSDEC Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101-5407
(718) 482-4905

Thomas Panzone
Citizen Participation Specialist
NYSDEC Region 2
Public Affairs
47-40 21st Street
Long Island City, NY 11101-5047
(718) 482-4958

New York State Department of Health (NYSDOH):

Dawn Hettrick
Project Manager
NYSDOH
547 River Street
Troy, NY 12180-2216
(800) 458-1158 ext. 27880

Document Repositories

The document repositories identified below have been established to provide the public with convenient access to important project documents:

Countee Cullen Library 104 West 136th Street New York, NY 10030 Attn: Ms. Jackson Phone: (212) 491-2070 Hours: Mon Tue Wed Thu Fri Sat Sun 10-8 10-8 10-8 10-8 10-5 10-5 —	NYSDEC Region 2 Division of Environmental Remediation 47-40 21st Street Long Island City, NY 11101-5407 Attn: Bryan Wong Phone: (718) 482-4905 Hours: Mon. to Fri 7:30-3:30 (call for appointment)

Appendix C – Inactive Hazardous Waste Site Contact List

Community Boards:

Manhattan Community Board 10
Chair: Mr. Franc Perry
215 West 125th Street
New York, NY 10027
Email: info@cb10.org

Manhattan Community Board 10
District Manager: Mr. Paimaan Lodhi, AICP
215 West 125th Street
New York, NY 10027
Email: info@cb10.org

Manhattan Community Board 11
District Manager: Mr. George Sarkissian
1664 Park Avenue, Ground Floor
New York, NY 10035
Email: info@cb11m.org

Manhattan Community Board 11
Chair: Mr. Matthew Washington
1664 Park Avenue, Ground Floor
New York, NY 10035
Email: info@cb11m.org

Elected Officials:

Hon. Inez E. Dickens
New York City Council Member
Adam Clayton Powell, Jr. Bldg.
163 West 125th Street
New York, NY 10027

Hon. Bill Perkins
New York State Senator
30th State Senatorial District
Adam Clayton Powell, Jr. Bldg. Suite 912
163 West 125th Street
New York, NY 10027
Email: perkins@senate.state.ny.us

Hon. Kirsten Gillibrand
United States Senate
780 Third Avenue, Suite 2601
New York, NY 10017
Email: contact@gillibrand.senate.gov

Hon. Charles Schumer
United States Senate
757 Third Avenue, Suite 17-02
New York, NY 10017
Email: senator@schumer.senate.gov

Joseph Crua *(electronic copy only requested – via email Jpc04@health.state.ny.us)*
Bureau of Environmental Exposure Investigation
New York State Department of Health
Flanigan Square
547 River Rd
Troy, NY 12180-2216

Hon. John Liu
NYC City Comptroller
1 Centre Street
New York, NY 10007
Email: intergov@comptroller.nyc.gov

Hon. Keith L.T. Wright
New York State Assembly Member
70th Assembly District
Adam Clayton Powell, Jr. Bldg. Suite 920
163 West 125th Street
New York, NY 10027
Email: WrightK@assembly.state.ny.us

US House of Representatives District -15
Representative: Charles B. Rangel
Adam Clayton Powell State Office Building
163 West 125th Street, 7th Floor
New York, NY 10027
Email: rangel@mail.house.gov

Hon. Scott M. Stringer
Manhattan Borough President
1 Centre Street 19th Floor
New York, NY 10007
Email: jgetlin@manhattanbp.org

Mayor Michael Bloomberg
City Hall
New York, NY 10007

Hon. Bill de Blasio
Public Advocate
1 Centre Street, 15th Floor
New York, NY 10007
Email: kjfoy@pubadvocate.nyc.gov

Robert Kulikowski, Director
NYC Office of Environmental Coordination
253 Broadway – 14th Floor
New York, NY 10007

Amanda Burden, Director
NYC Department of City Planning
22 Reade Street
New York, NY 10007

Jane O'Connell *(electronic copy only requested – via email jhoconne@gw.dec.state.ny.us)*
NYS Department of Environmental Conservation
Division of Environmental Remediation
1 Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

Robert Cozzy *(electronic copy only requested – via email rjcozzy@gw.dec.state.ny.us)*
Bureau Director, Remedial Bureau "B"
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany NY 12233-2216

NYC Director of Zoning
Michael Weil
NYC Department of City Planning
22 Reade Street
New York, NY 10038

Norman Goodman,
Manhattan County Clerk
60 Centre Street, Room 161
New York, NY 10007

John Wuthenow
Office of Environmental Planning & Assessment
NYC Dept. of Environmental Protection
96-05 Horace Harding Expressway
Flushing, NY 11373

Public Water Supplier:

Hon. Caswell Holloway
Commissioner
NYC Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Environmental Organizations:

Eddie Bautista, Executive Director
NYC Environmental Justice Alliance (NYCEJA)
166A 22nd Street
Brooklyn, NY 11232
Email: nyceja@gmail.com

Exec. Director: Peggy Shepard
West Harlem Environmental Action, Inc.
P.O. Box 1846
New York, NY 10027

Document Repository:

New York Public Library
Countee Cullen Branch
104 West 136th Street
New York, NY 10030
Phone: (212) 491-2070

Current Tenant:

Jack Guttman
American Self-Storage
386 Park Avenue South, Suite 214
New York, NY 10016

Other:

Bob Huffman – Facilities Director
United Cerebral Palsy of New York City
121 Lawrence Avenue
Brooklyn, New York 11230

Adjacent Properties owners:

Properties located west and south: (apartment buildings)

Savoy Park Owner, LLC
45 West 139th Street
New York, NY 10037

Valerie Orridge, President
Savoy Park Tenants Association
45 West 139th Street Apt. 3E
New York, NY 10037

North of project site:

Orlando Pinnock, Superintendent
New York Army National Guard
Fifth Avenue Armory
2366 Fifth Avenue
New York, NY 10037-1028

Schools and Daycare Facilities:

St. Mark Evangelist School
55 West 138th Street
New York, NY 10037
Email: stmarkharlem@gmail.com

Anne G. Newsome Head Start Center
129 Odell Clark Place
New York, NY 10030

St. Charles Borromeo RC School
214 West 142nd Street
New York, NY 10030

Public School 197 John B. Russwurm
2230 5th Avenue
New York, NY 10037
Attn: Renardo Wright, Principal

Harlem Children's Zone
40 West 143rd Street
New York, NY 10037
Attn: Malaika Lambert, Director
Email: mlambert@hcz.org

Community, Civic, Religious and other Educational Institutions:

Manhattan Chamber of Commerce
1375 Broadway, Third Floor
New York, NY 10018
Email: info@manhattancc.org

Upper Manhattan Empowerment Zone Development Corporation
290 Lenox Avenue, 3rd Floor
New York, NY 10027
Phone: (212) 410-0030
Fax: (212) 410-9083
Attn: Kenneth Knuckles, President and CEO
Email: kknuckles@umez.org

Minisink Townhouse
646 Malcolm X Boulevard
New York, NY 10037
Email: info@harlemonestop.org

New Mt. Zion Baptist Church
171 West 140th Street
New York, NY 10030
Email: churchadmin@nmzbc.org

St. Charles Church
211 West 141st Street
New York, NY 10030
Email: scbharlem211@yahoo.com

St. Mark Evangelist Roman Catholic Church
65 West 138th Street
New York, NY 10037

Project Renewal
145 Odell Clark Place
New York, NY 10030

Abyssinian Baptist Church
132 Odell Clark Place
New York, NY 10030
Email: esimpson@abyssinian.org

Frederick Samuel (NYCHA) Development Office
105 West 143rd Street
New York, NY 10030

Frederick Samuel Resident Association (NYCHA)
c/o Jacqueline Robinson, President
105 West 143rd Street
New York, NY 10030

Community Center
c/o Abyssinian Baptist Church
669 Lenox Avenue
New York, NY 10030

Local Media Outlets:

NY1 News
75 Ninth Avenue
New York, NY 10011
Email: ny1news@ny1.com

New York Post
1211 Avenue of the Americas
New York, NY 10036

New York Daily News
450 West 33rd Street
New York, NY 10001
Email: news@edit.nydailynews.com

Pat Stevenson
CEO & Publisher
Harlem News Group, Inc.
P.O. Box #1775
New York, NY 10027
Phone: (212) 996-6006
Fax: (212) 996-6010
Email: harlemnewsinc@aol.com

The Amsterdam News
2340 Frederick Douglass Blvd.
New York, NY 10027
Phone: (212) 932-7400
Fax: (212) 932-7431

Day Care Center
Graham-Windham Children's Services
669 Lenox Avenue
New York, NY 10030

Appendix D – Identification of Citizen Participation Activities

Program Citizen Participation Requirements	CP Requirement(s) Occur at This Point
Site Listing:	
• Mail notice to site contact list. If contact list not developed, publish notice in local newspaper and provide notice to adjacent property owners. All mailings require certification of mailing to DER within 5 days.	When final decisions about a site listing or reclassification are made. A Class 1 or Class 2 inactive hazardous waste disposal site on the Registry is eligible for a Technical Assistance Grant.
Start of Remedial Investigation (RI):	
• Prepare site contact list • Establish document repository • Prepare Citizen Participation (CP) Plan • Place RI Work Plan in document repository • Mail fact sheet to site contact list that announces availability of RI Work Plan and describes upcoming RI field work	CP Plan was approved by DER before distribution in June 2007. Fact Sheet mailed in August 2007.
Before DER Approves Proposed Remedial Investigation Report (RIR):	
• Mail fact sheet to site contact list that describes RI results • Place approved RIR in document repository	Before DER approves RIR: Final RIR published, with copy sent to repository and corresponding Fact Sheet mailed in June 2010.
When DER Issues Proposed Remedial Action Plan (PRAP):	
• Place PRAP in document repository • Mail fact sheet to site contact list that describes PRAP and announces 30-day comment period • Public meeting about PRAP	When DER issues PRAP: Comment period begins/ends as per dates identified in fact sheet. Public meeting is held during the comment period.
When DER Issues Record of Decision (ROD):	
• Place ROD in document repository • Mail fact sheet to site contact list that announces availability of ROD and describes selected remedy. ROD includes responsiveness summary of significant comments about PRAP	When DER issues ROD.
Before Start of Remedial Construction:	
• Mail fact sheet to site contact list that describes upcoming remedial construction	Before the start of remedial construction at the site.
When DER Issues Certificate of Completion (COC):	
• Place COC in document repository • Mail fact sheet to site contact list that announces issuance of Certificate of Completion (COC)	Within 10 days of DER issuing COC.
Proposed Site Delisting:	
• Provide notice as described for site listing and reclassification, above. Announce 30-day public comment period • Publish notice in Environmental Notice Bulletin • Publish notice in local newspaper • Make summary of comments received available to the public	At least 60 days before proposed site delisting.

Appendix E – Inactive Hazardous Waste Site Cleanup Program Process

Site Listing

Develop RI Work Plan
Prepare CP Plan

Fact Sheet on RI Work Plan

DEC Approves RI Work Plan

Complete Investigation and Submit RIR and Feasibility Study

Fact Sheet on RI Results

DEC Approves RIR

Submit Feasibility Study

DEC develops Proposed Remedial Action Plan

30-Day Comment Period
Fact Sheet, ENB Notice
Public Meeting

DEC Issues ROD

Fact Sheet on ROD

Submit Remedial Design

DEC Approves Remedial Design

Fact Sheet on Remedial Construction

Complete Construction

DEC Issues Certificate of Completion

Proposed Delisting or Reclassification

30-Day Comment Period
Fact Sheet, ENB Notice, Newspaper

Delisting or Reclassification

<u>Notes:</u>
ENB = Environmental Notice Bulletin
CP = Citizen Participation
RI/FS = Remedial Investigation/Feasibility Study
ROD = Record of Decision

APPENDIX G

RESUMES OF KEY PERSONNEL

MICHELLE LAPIN, P.E.

SENIOR VICE PRESIDENT

Michelle Lapin is a senior vice president with 20 years of experience in the assessment and remediation of hazardous waste issues. She leads the firm's Hazardous Materials group and offers more than a decade of experience providing strategic planning and management for clients. Ms. Lapin has been responsible for the administration of technical solutions to contaminated soil, groundwater, and geotechnical problems. Her other duties have included technical and report review, proposal writing, scheduling, budgeting, and acting as liaison between clients and regulatory agencies, and project coordination with federal, state, and local authorities.

Ms. Lapin's hydrogeologic experience includes performing groundwater investigations, and formulation and administration of groundwater monitoring programs in New York, New Jersey, Connecticut, New Hampshire, Massachusetts, Rhode Island, Virginia, and Maryland. Her experience with groundwater contamination includes Level B hazardous waste site investigations; execution of leaking underground storage tank studies, including hazardous soil removal and disposal; soil and water sampling; soil gas surveys; and wetlands issues. Ms. Lapin is experienced in coordinating and monitoring field programs concerning hazardous waste cell closures. She has directed numerous Phase I, Phase II, and Phase III investigations, many of them in conjunction with developers, law firms, lending institutions, and national retail chains. She is also experienced in the cleanup of contaminated properties under Brownfield Cleanup Program (BCP) regulations.

BACKGROUND

Education

B.S., Civil Engineering, Clarkson University, 1983

M.S., Civil Engineering, Syracuse University, 1985

Professional Registrations

New York State P.E.

State of Connecticut P.E.

Professional Memberships

Member, American Society of Professional Engineers (ASPE), National and CT Chapters

Member, American Society of Civil Engineers (ASCE), National and CT Chapters

Member, Connecticut Business & Industry Association (CBIA), CBIA Environmental Policies Council

Years of Experience

Year started in company: 1994

Year started in industry: 1986

RELEVANT EXPERIENCE

West 61st Street Rezoning/Residential Development, New York, NY

Ms. Lapin is directing the firm's hazardous materials work for this mixed-use development in Manhattan. AKRF was retained by the Algin Management Co. to prepare an EIS for the proposed rezoning of the western portion of the block between West 60th and 61st Streets, between Amsterdam and West End Avenues. The proposed action would rezone the western half of the block, thus facilitating the development of two 30-story residential towers with accessory parking spaces, and landscaped open space. The EIS examined a "worst case" condition for rezoning the block, which allowed Algin to build a residential building of approximately 375,000 square feet at their site. The proposed building would contain up to 475 apartments, 200 accessory parking spaces, a health club, and community facility space. This site, with the services of AKRF, entered into New York State's Brownfield Cleanup Program (BCP). On-site issues include underground storage tanks remaining from previous on-site buildings, petroleum contamination from these tanks and possibly from off-site sources, and other soil contaminants (metals, semi-volatile organic compounds, etc.) from fill materials and previous on-site buildings. AKRF is overseeing the adherence to the Construction Health and Safety Plan (HASP), which was submitted to and approved by the NYSDEC, and monitoring the waste streams, to ensure that the different types of waste are being disposed of at the correct receiving facilities. This oversight also includes confirmation and characteristic soil sampling for the receiving facilities and NYSDEC. Daily field logs are e-mailed to NYSDEC to comply with the BCP agreement.

Hudson River Park, New York, NY

Ms. Lapin is directing AKRF's hazardous materials work during construction of Hudson River Park, a 5-mile linear park along Manhattan's West Side. As the Hudson River Park Trust's (HRPT's) environmental consultant, AKRF is overseeing preparation and implementation of additional soil and groundwater investigations (working with both NYSDEC and NYCDEP), all health and safety activities, removal of both known underground storage tanks and those encountered during construction. Previously, the firm performed hazardous materials assessments as part of the Environmental Impact Statement (EIS) process, including extensive database and historical research, as well as soil and groundwater investigations. Ms. Lapin has been the senior consultant for the soil and groundwater investigations and remediation, and the asbestos investigations and abatement oversight.

Fiterman Hall Deconstruction and Decontamination Project, New York, NY

The 15-story Fiterman Hall building, located at 30 West Broadway between Barclay and Murray Streets, originally constructed as an office building in the 1950s, had served as an extension of the City University of New York (CUNY) Borough of Manhattan Community College (BMCC) since 1993. The building was severely damaged during the September 11, 2001, attack on the World Trade Center (WTC) when 7 WTC collapsed and struck the south façade of the building, resulting in the partial collapse of the southwest corner of the structure. The building was subsequently stabilized, with breaches closed and major debris removed, however extensive mold and WTC dust contaminants remain within the building, which must be taken down. The project requires the preparation of two EASs for the redevelopment of Fiterman Hall—one for the deconstruction and decontamination of the building and one for the construction of a replacement building on the site. AKRF is currently preparing the EAS for the Deconstruction and Decontamination project, which includes the decontamination of the interior and exterior of the building, the removal and disposal of all building contents, and the deconstruction of the existing, approximately 377,000-gross-square-foot partially collapsed structure. Ms. Lapin was the reviewer for the deconstruction and decontamination plans for the EAS. The cleanup plan is due to be submitted shortly to the U.S. Environmental Protection Agency; once approved, remediation work will begin, followed by the deconstruction and rebuilding of Fiterman.

Brooklyn Bridge Park, Brooklyn, NY

AKRF is preparing an EIS and providing technical and planning support services for Brooklyn Bridge Park, which will revitalize the 1.3-mile stretch of the East River waterfront between Jay Street on the north and Atlantic Avenue on the south. The new park, to be completed by 2010, would allow public access to the water's edge, allowing people to enjoy the spectacular views of the Manhattan skyline and New York Harbor. It would also provide an array of passive and active recreational opportunities, including lawns, pavilions, and a marina. As with many waterfront sites around New York City, the lands along the Brooklyn waterfront have a long history of industrial activities. Some of these industries used dangerous chemicals and generated toxic by-products that could have entered the soil and groundwater. In addition, landfilling activities along the shoreline also made use of ash and other waste materials from industrial processes. Based on site inspections and historical maps, government records, and other sources, AKRF is in the process of investigating the potential for the presence for hazardous materials in the park. This information will be compiled into a Phase 1 Environmental Site Assessment report. AKRF will also provide support to the design team related to designing the project to minimize costs related to remediating hazardous materials where possible. Ms. Lapin is serving as senior manager for the hazardous materials investigations, including procuring a Beneficial Use Determination (BUD) from the New York State Department of Environmental Conservation (NYSDEC) for the acceptance of fill materials to the site.

Columbia University Manhattanville Academic Mixed-Use Development, New York, NY

Ms. Lapin is serving as hazardous materials task leader on this EIS for approximately 4 million square feet of new academic, research and neighborhood uses to be constructed north of Columbia University's existing Morningside campus. The work has included Phase I Environmental Site Assessments for the properties within the site boundaries and estimates for upcoming investigation and remediation.

Albert Einstein College of Medicine Center for Genetic and Translational Medicine, Bronx, NY

Ms. Lapin directed the firm's hazardous materials work in connection with the construction a new Center for Genetics and Translational Medicine (CGTM) building on the Bronx campus of the Albert Einstein College of Medicine of Yeshiva University. The building is expected to be opened by 2006. AKRF prepared an Environmental Assessment Statement (EAS) that examined such issues as land use, zoning, air quality, urban design and visual resources, hazardous materials, traffic, noise, and air quality. Ms. Lapin's work included analysis of the existing conditions and potential impacts that the construction could cause to the environment and human health.

Yonkers Waterfront Redevelopment Project, Yonkers, NY

For this redevelopment along Yonkers Hudson River waterfront, Ms. Lapin headed the remedial investigation and remediation work that included Phase I assessments of 12 parcels, investigations of underground storage tank removals and associated soil remediation, remedial alternatives reports, and remedial work plans for multiple parcels. Several of the city-owned parcels were remediated under a Voluntary Cleanup Agreement; others were administered with state Brownfields grants. Hazardous waste remediation was completed on both brownfield and voluntary clean-up parcels, and construction is underway for mixed-use retail, residential development, and parking.

Davids Island Site Investigations, New Rochelle, NY

Ms. Lapin managed the hazardous materials investigation of Davids Island, the largest undeveloped island on the Long Island Sound in Westchester County. The 80-acre island features pre- and post-Civil War military buildings and parade grounds, and is viewed as a major heritage, tourism, and recreational amenity. The island, formerly known as Fort Slocum, was used by the U.S. military, beginning in the 19th century, as an Army base, hospital, and training center. The island is planned for county park purposes. The investigation included a Phase I site assessment, with historical research going back to the 17th century, a Phase II subsurface investigation, underground storage tank investigations, and asbestos surveys of all remaining structures. Cost estimates were submitted to Westchester County for soil remediation, asbestos abatement, and building demolition.

Site Selection and Installation of 11 Turbine Generators, New York and Long Island, NY

AKRF was retained by the New York Power Authority (NYPA) to assist in the State Environmental Quality Review Act (SEQRA) review of the proposed siting, construction, and operation of 11 single-cycle gas turbine generators in the New York metropolitan area. Ms. Lapin managed the hazardous materials investigation of the sites. The work has included Phase I site assessments, subsurface investigations, and construction health and safety plans.

Cross Westchester (I-287) Expressway Phases V and VI, Westchester County, NY

For the New York State Department of Transportation (NYSDOT), Ms. Lapin served as project manager and was responsible for directing the contaminated materials aspect of the final design effort for the reconstruction of Westchester County's major east-west artery. As part of her duties, Ms. Lapin was responsible for managing the asbestos investigations at eight bridges and wetland delineation along the entire corridor, as well as writing the scope of work and general management of the project.

Shaw's Supermarket Redevelopment, New Fairfield, CT

AKRF is providing consulting services to the developer and owner of a 9-acre site included conducting a remedial investigation and remediation of a site contaminated from former dry cleaning operations and off-site gasoline spills. The investigation included the installation of monitoring wells in three distinct aquifers, geophysical logging, pump tests, and associated data analysis. Ms. Lapin presented the environmental issues and planned remediation to local and state officials during the early stages of the planning process to incorporate their comments into the final remedial design. A remedial action work plan (RAWP) was completed and approved by the Connecticut Department of Environmental Protection within a year to enable redevelopment work for a new supermarket and shopping center. The RAWP included the remediation of soils within the source area and a multi-well pump and treat system for the recovery of non-aqueous and dissolved phase contamination in groundwater. The design of the recovery well system included extensive groundwater modeling to ensure capture of the contaminant plume and the appropriate quantity and spacing of the wells. Ms. Lapin directed the soil removal remedial activities and monitoring for additional potential contamination during construction. In addition, AKRF performed comprehensive pre-demolition asbestos and lead-based paint surveys of the former site structures, and are continuing to provide environmental consulting support for the development of the site. Site development has been completed and a groundwater remediation system was installed during site development. The remediation system is successfully operating. The next phase of work includes and off-site study to determine whether the contamination plume has migrated from the site since area residents use groundwater as a source of drinking water. Ms. Lapin will continue to manage the project through the study and remediation phases.

East 75th/East 76th Street Site, New York, NY

Ms. Lapin served as senior manager for this project that encompassed coordination and direct remediation efforts of this former dry cleaning facility and parking garage prior to the sale of the property and its ultimate redevelopment for use as a private school. A preliminary site investigation identified 20 current and former petroleum and solvent tanks on the property. A soil and groundwater testing program was designed and implemented to identify the presence and extent of contamination resulting from potential tank spills. This investigation confirmed the presence of subsurface petroleum contamination in the soil and solvent contamination from former dry cleaning activities in the bedrock. AKRF completed oversight of the remediation under the State's Voluntary Cleanup Program. Remediation, consisting of tank removals and excavation of contaminated soil and the removal of solvent-contaminated bedrock down to 30 feet below grade, has been completed. AKRF completed oversight of the pre-treatment of groundwater prior to discharge to the municipal sewer system and is currently completing an off-site study to determine impacts to groundwater in downgradient locations.

Former Macy's Site, White Plains, NY

Ms. Lapin managed the pre-demolition work for Tishman Speyer. Work included a Phase I site assessment; subsurface investigation (Phase II), including the analysis of soil and groundwater samples for contamination; a comprehensive asbestos, lead paint, and PCB investigation; radon analysis; and coordination and oversight of the removal of hazardous materials left within the building from previous tenants. Work also included asbestos abatement specifications and specifications for the removal of two 10,000-gallon vaulted fuel-oil underground storage tanks.

Storage Deluxe, Various Locations, NY

Ms. Lapin manages the firm's ongoing work with Storage Deluxe, which includes Phase I and Phase II subsurface investigations, underground storage tank removals and associated remediation, asbestos surveys and abatement oversight, and contaminated soil removal and remediation for multiple sites in the Bronx, Brooklyn, Manhattan, Westchester County, and Long Island.

Home Depot, Various Locations, NY

Ms. Lapin, serving as either project manager or senior manager, has managed the investigations and remediation at multiple Home Depot sites in the five boroughs, Long Island, and Connecticut. The investigations have included Phase I and II site assessments, asbestos and lead paint surveys, abatement specifications and oversight, and soil and groundwater remediation.

Avalon on the Sound, New Rochelle, NY

For Avalon Bay Communities, Ms. Lapin is managing the investigations and remediation of two phases of this residential development, including two luxury residential towers and an associated parking garage. Remediation of the first phase of development (the first residential tower and the parking garage) included gasoline contamination from a former taxi facility, fuel oil contamination from multiple residential underground storage tanks, and chemical contamination from former on-site manufacturing facilities. The remediation and closure of the tank spills was coordinated with the New York State Department of Environmental Conservation (NYSDEC). The initial investigation of the Phase II development—an additional high-rise luxury residential building—detected petroleum contamination. A second investigation was conducted to delineate the extent of the contamination and estimate the costs for remediation. The remediation will be conducted in conjunction with the development plan.

Mill Basin, Gerritsen Inlet, and Paerdegat Basin Bridges, Final Design, Shore Parkway, Brooklyn, NY

Following the preparation of the GEIS for the Belt Parkway Bridges Project, the firm was retained for supplemental work during the final design phase of the project. This included NEPA and SEQRA documentation for three of the bridges—Mill Basin, Gerritsen Inlet, and Paerdegat Basin—which will be federally funded. Ms. Lapin managed the contaminated materials investigation that included a detailed subsurface contaminated materials assessment, both subaqueous and along the upland approaches.

NYSDOT Transportation Management Center (TMC), Hawthorne, NY

AKRF conducted environmental studies for the NYSDOT at the current troopers' headquarters in Hawthorne, NY. The property is the proposed site of a new Transportation Management Center. AKRF completed a comprehensive asbestos survey of the on-site building and prepared asbestos abatement specifications; performed a Phase I site assessment; conducted an eletromagnetic (EM) survey that located two fuel oil underground storage tanks, and developed removal specifications for the two underground storage tanks and an aboveground storage tank.

Metro-North Railroad Poughkeepsie Intermodal Station/Parking Improvement Project, Poughkeepsie, NY

Ms. Lapin served as project manager of the hazardous materials investigation in connection with AKRF's provision of planning and environmental services for parking improvement projects at this station along the Hudson Line. The project included an approximately 600-space garage, additional surface parking, and an intermodal station to facilitate bus, taxi, and kiss-and-ride movements. Ms. Lapin conducted Phase I and II contaminated materials assessments and worked with the archaeologists to locate an historical roundhouse/turntable.

Metro-North Railroad Golden's Bridge Station Parking Project, Westchester County, New York

For Metro-North Railroad, Ms. Lapin managed a Phase I Environmental Site Assessment of a property that has since become the new parking area, used by the existing Golden's Bridge train station. Ms. Lapin also conducted a subsurface (Phase II) investigation of the original parking area, track area, and existing platform for the potential impact of moving tracks in the siding area to extend the existing parking area and adding an access from a proposed overhead walkway (connecting the train station to the new parking area). The study also included an assessment for lead-based paint and asbestos on the platform structures.

Marcus Simons

Senior Vice President

General Introduction

Marcus Simons is a Senior Vice President of AKRF with more than 18 years of experience in environmental consulting. He specializes in the assessment and cleanup of contaminated sites, including federal and state superfund, Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA) sites, brownfield, voluntary cleanup and spill sites. His expertise includes health risk assessment, development of sampling plans, economic evaluations of remedial alternatives, and regulatory analysis. He also has extensive experience in statistics, selection of sites for controversial facilities, and federal and state wetland regulations and waterfront permitting. In addition to analytical work, Mr. Simons has considerable experience in presenting results to regulatory agencies and the general public.

Mr. Simons manages much of the environmental due diligence activity at AKRF (most recently managing environmental due diligence on Tishman/Blackrock's Peter Cooper/Stuyvesant Town acquisition, reportedly the largest real estate transaction in US history), including supervising preparation of numerous Phase I and Phase II Environmental Site Assessments, as well as more complex multi-site and litigation-related projects. Mr. Simons also manages preparation of the contaminated-materials portions of AKRF's Environmental Impact Statements and Environmental Assessments.

Mr. Simons has managed some of the most complex cleanup sites in New York State including: the recently completed cleanup of a 12-acre PCB-contaminated former utility property in Flushing, Queens where a 3 million square foot retail/residential building is being constructed; cleanup of the nation's largest former dental factory in Staten Island for reuse as single family housing; the investigation of several former manufactured gas plants; and the investigation and remediation associated with the reconstruction of the West Side Highway and Hudson River Park in Manhattan (from the Battery to 59th Street). These projects involved extensive multi-year negotiations with federal, state and city regulatory agencies. Mr. Simons has experience with federal and state superfund programs, state brownfield and voluntary cleanup programs, spill programs and investigation/cleanup under New York SEQRA/CEQR and NYCDEP E-designation programs.

Mr. Simons also has extensive experience in the evaluation of contaminated materials issues for environmental assessments (EAs) and environmental impact statements (EISs) under NEPA, SEQRA and CEQR, including transportation projects (Second Avenue Subway, MTA/LIRR East Side Access, Cross Harbor Freight Movement Study, Route 9A Reconstruction), large-scale rezoning projects (Long Island City, Downtown Brooklyn, Jamaica) and public and private redevelopment work (Times Square, School Construction Authority, Queens West)

Before joining AKRF, Mr. Simons worked for Woodward Clyde Consultants (now URS Corporation) in Wayne, New Jersey, where he was responsible for risk assessment, environmental impact analysis, and regulatory analysis for both public and private clients. His responsibilities included projects primarily located in New York and New Jersey. His risk assessment work included a study for the decommissioning and cleanup of a Canadian elemental phosphorus production facility (the first such plant in the world to be systematically decommissioned).

Background

Education

M.A. and B.A. (Honors), Engineering/Management Science, Cambridge University, England, 1986

M.S., Engineering and Public Policy, Carnegie-Mellon University, 1988

Years of Experience

Year started in company: 1995

Year started in industry: 1988

RELEVANT EXPERIENCE

Pelham Bay Landfill, Bronx, NY

For the NYCDEP, Mr. Simons prepared a Human Health Risk Assessment for the Pelham Bay Landfill Inactive Hazardous Waste Disposal Site in Bronx, NY. The Assessment was performed in accordance with both US EPA Superfund Guidelines and site-specific exposure factors and other procedures agreed to with NYSDEC and NYSDOH. The Assessment included analysis of soil, groundwater, surface water, sediment, fish/shellfish and air data and incorporated complex comparisons with background contaminant levels in the various media and innovative approaches, following the data validation, to handling extensive non-detect and estimated-value laboratory data .

CE Flushing Site, Flushing, NY

Mr. Simons directed the remediation of a former industrial site in Flushing, Queens, NY prior to its redevelopment as a 3 million square foot retail/residential complex. The property was cleaned up under the NYS Department of Environmental Conservation Brownfield Cleanup Program and the NYC Department of Environmental Protection's E-Designation requirements. The remedial measures included the removal of aboveground and underground storage tanks, excavation and off-site disposal of TSCA, RCRA and non-hazardous wastes, NAPL removal, and removal and investigation of on-site drainage structures. The remediation and subsequent construction involved obtaining (or obtaining waivers from) numerous permits including those for NYSDEC Tidal Wetlands, NYSDEC Long Island Wells, NYSDEC SPDES/Stormwater and NYCDEP Sewer Use.

Peter Cooper Village/Stuyvesant Town, New York, NY

Mr. Simons directed the purchaser's environmental due diligence efforts for the bidding and subsequent acquisition of this 80-acre property in Manhattan. Much of the 110-building complex is underlain by former manufactured gas plants and Con Edison entered the site into NYSDEC's Voluntary Cleanup Program. Going forward Mr. Simons will manage oversight of activities that involve disturbance of MGP-contaminated soils, as well as future testing and potentially remediation.

Ferry Point Park, Bronx, NY

Mr. Simons developed the material acceptance criteria (soil standards for capping materials) for the development of Ferry Point Park (including a golf course) in the Bronx. The New York City Department of Environmental Protection DEP and the New York State Departments of Health (DOH) and Environmental Conservation (DEC) agreed for the first time to relax their strict (TAGM 4046) criteria for clean soil, based on statistical analyses of background conditions and risk-based modeling.

Prince's Point, Staten Island, NY

Mr. Simons managed the complex cleanup (including the relocation of a contaminated tidal creek) of the nation's largest former dental factory site on Staten Island's waterfront. The site was on the State Superfund list. The future use of the site as single-family residential property entailed extensive negotiations with NYSDEC and NYSDOH. The project required obtaining (or obtaining waivers from) numerous permits including those for NYSDEC Tidal and Fresh Water Wetlands, USACOE (Nationwide) Permits, NYSDEC Coastal Erosion Hazard Area, NYSDEC SPDES and Stormwater, FEMA Modifications to Land in Floodplain, and USEPA Notification of PCB Waste Activity.

Route 9A Reconstruction, New York, NY

AKRF directed extensive studies for the reconstruction in Lower Manhattan proposed by the New York State Department of Transportation (NYSDOT) in cooperation with the Federal Highway Administration (FHWA). The project is arguably the most complex environmental analyses performed for a federally funded transportation project in New York City in the last 10 years. The firm was responsible for all environmental tasks as well as the preparation for the Draft, Supplementary, and Final Environmental Impact Statements (EISs) and Section 4(f)

Evaluation for this 5-mile $250 million reconstruction of Route 9A as part of the recovery effort following the events of September 11th, 2001. Mr. Simons managed the extensive hazardous materials investigations and prepared the contract specifications for contaminated soil and tank removal, including Health and Safety oversight.

Long Island City Rezoning, Queens, NY

As part of the preparation of an Environmental Impact Statement for NYC Department of City Planning, Mr. Simons managed the hazardous materials assessment of a multi-block industrial area. In addition to conducting the assessment Mr. Simons made recommendation as to the properties where "E-Designations" (city-recorded institutional controls on future development) should be placed.

Outlet City, Long Island City, Queens, NY

In Long Island City, Mr. Simons is managing the investigation and remediation of an old factory complex where large volumes of creosote were spilled. The investigations and interim remedial measures (IRMs) are taking place under the state's Voluntary Cleanup Program (VCP).

Pelham Plaza Shopping Center, Pelham Manor, Bronx, NY

Mr. Simons was responsible for the investigation of a former Con Edison manufactured gas facility on the Hutchinson River on the border between Westchester County and the Bronx. He oversaw the complex investigation of the existing shopping center at the site, and proposed a remediation approach to allow the expansion of the shopping center.

New York City Department of Transportation, Lead Paint Removal and Disposal on Bridges Project, New York, NY

Mr. Simons conducted a regulatory analysis of related to the removal of lead paint from nearly 800 bridges. This analysis included an evaluation of the regulatory compliance of various proposed procedures with federal and state hazardous and solid waste management requirements.

American Felt and Filter Company, New Windsor, NY

Mr. Simons prepared a Remedial Investigation (including exposure assessment) and Feasibility Study for the country's oldest active felt manufacturing facility, located in Orange County. This solvent-contaminated site is on the State Superfund List.

MARC S. GODICK, LEP

SENIOR VICE PRESIDENT

Marc S. Godick, a Senior Vice President of the firm, has 20 years of experience in the environmental consulting industry. Mr. Godick's broad-based environmental experience includes expertise in remedial investigation, design and implementation of remedial measures, environmental/compliance assessment, litigation support, and storage tank management.

BACKGROUND

Education

M.E., Engineering Science/Environmental Engineering, Pennsylvania State University, 1998

B.S., Chemical Engineering, Carnegie Mellon University, 1989

Licenses/Certifications

Licensed Environmental Professional (License # 396) – State of Connecticut – 2003

40 Hour HAZWOPER and Annual Refresher Training, 1990-2008

Supervisors of Hazardous Waste Operations (8 Hour), 1990

Professional Memberships

Chair, Village of Larchmont/Town of Mamaroneck Coastal Zone Management Commission, 1997 - Present

Chair, Westchester County Soil and Water Conservation District, 2005 - Present

Member, NYSDEC Risk-Based Corrective Action (RBCA) Advisory Group for Petroleum-Impacted Sites, 1997

Community Leadership Alliance, Pace University School of Law, 2001

Seminars, Lectures & Publications

"Let Nature Do the Work – Onsite Stormwater Management," Westchester County Department of Parks, Recreation and Conservation, Fall 2003

"Water Pollution Control and Site Assessments and Audits," Environmental Health and Safety Issues Course, Building Owners and Managers Institute (BOMI), 1997-1999

"Hydrogeologic and Geological Aspects of Tank Closures and Remedial Action," Underground Storage Tanks Course, Government Institutes, Summer 1996, Fall 1997

Years of Experience

Year started in company: 2002

Year started in industry: 1990

RELEVANT EXPERIENCE

Queens West Development Project, AvalonBay Communities, Queens, NY

Mr. Godick managed one of the largest remediation projects completed to date under the New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program (BCP). The remedy for the site, which was contaminated by coal tar and petroleum, included the installation of a hydraulic barrier (sheet pile cut off wall), excavation of contaminated soil under a temporary structure to control odors during remediation, a vapor mitigation system below the buildings, and implementation of institution controls. The investigation, remediation design, remedy implementation, and final sign-off (issuance of Certificate of Completion) were completed in two years. Total remediation costs were in excess of $13 million.

Williamsburg Waterfront Redevelopment, RD Management/L&M Equities/Toll Brothers, Brooklyn, NY

The project is one of the largest development projects in the Greenpoint/Williamsburg Rezoning Area, which includes the construction of nearly 1 million square feet of residential and retail space along the Williamsburg waterfront. The site had a variety of industrial uses, including a railyard, junk yard, and waste transfer station. As part of the City's rezoning, the site was assigned an E-designation for hazardous materials. Mr. Godick managed the preparation of the Phase I and II environmental site assessments, remedial action plan (RAP), and construction health and safety plan (CHASP). Mr. Godick obtained NYSDEC closure of an open spill associated with former underground storage tanks at the site. The NYCDEP-approved RAP and CHASP included provisions for reuse of the existing fill material, with the excess being disposed off-site, installation of a vapor barrier below the new buildings, installation of a site cap, and environmental monitoring during the construction activities. Mr. Godick is currently managing the environmental monitoring work that began in 2006. A Notice of Satisfaction has been issued by NYCDEP for the first phase of the development.

Landfill Closure & Compost Facility Application, White Plains, NY

Mr. Godick is currently managing the closure of a formal ash landfill, which is currently being utilized as a leaf and yard waste compost facility by the City of White Plains. The remedial investigation included on-site and off-site assessment of soil, groundwater, and soil gas to delineate the extent of methane and solvent contamination associated with the landfill. The landfill closure plan includes provisions for enhancing the existing cap, methane venting, and groundwater treatment for solvent contamination. Mr. Godick also managed the preparation of the compost facility permit application, which required modification to the facility's operations necessary to close the landfill and address other regulatory requirements.

Landfill Redevelopment – RD Management, Orangeburg, NY

Mr. Godick is currently managing the remediation of the former Orangeburg Pipe site under the NYSDEC Voluntary Cleanup Program. The site contains widespread fill material, which has fragments of Orangeburg pipe that is impregnated with asbestos and coal tar. The site is being redeveloped for retail use. The site's closure plan provides for reuse of all fill material on-site and methane mitigation (vapor barrier and passive sub-slab ventilation system) for all new buildings. The fill management activities will include dust and sediment control measures and air monitoring to prevent airborne dust in accordance with a closure plan, stormwater pollution prevention plan (SWPPP), and CHASP. In pervious areas, the site cap will consist of 2 feet of clean fill and a liner in larger areas.

National Grid – Halesite Manufactured Gas Plant Site, Town of Huntington, NY

Mr. Godick managed the remedial design and engineering work associated with remediation of National Grid's former manufactured gas plant (MGP) located in the Town of Huntington. The site is situated in a sensitive location along the waterfront, surrounded by commercial and residential properties, and half the property where the remediation was conducted is a steep slope. The remedy consisted of soil removal, oxygen injection, and non-aqueous phase liquid recovery. Mr. Godick was responsible for the development of the remedial work plans, design/construction documents, landscape architecture, confirmatory sampling, air monitoring, supervision, and preparation of close-out documentation in accordance with NYSDEC requirements.

Site Investigation–7 World Trade Center Substation, Con Edison, New York, NY

Mr. Godick managed the site investigation at the former 7 World Trade Center Substation in an effort to delineate and recover approximately 140,000 gallons of transformer and feeder oil following the collapse of the building. The project involved coordination with several crews, Con Edison, and other site personnel.

Site Investigation–Former Manufactured Gas Plant (MGP) Facilities, Con Edison, New York, NY

Mr. Godick managed site investigations at four former MGP facilities. The investigations at three of the four sites were completed at a Con Edison substation, flush pit facility, and service center, respectively. The details associated with the fourth site are confidential. Site characterizations at the substation and flush pit facility were conducted in preparation of expansion at these locations. The findings from these characterizations were used by Con Edison to make appropriate changes to the design specifications and to plan for appropriate handling of impacted materials and health and safety protocols during future construction activities.

Verizon, Investigation & Remediation, Various Locations, NY, PA and DE

Mr. Godick managed over 50 geologic/hydrogeologic assessments and site remediation projects related to petroleum releases at various facilities. Responsibilities included annual budgeting, day-to-day project management, development and implementation of soil and ground water investigation workplans, ground water modeling, risk evaluation, remedial action work plans, remedial design, system installation, waste disposal, well abandonment, and operation and maintenance. Many of the assessment and remedial projects followed a risk-based approach. Remedial technologies implemented included air sparging, soil vapor extraction, bioremediation, pump and treat, soil excavation, and natural attenuation.

Storage Tank Management, Verizon, Various Locations, NY, PA, DE, and MA

Mr. Godick managed the removal and replacement of underground and aboveground storage tank systems for Verizon in New York, Pennsylvania, Delaware, and Massachusetts. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction oversight, project budget, and documentation. For selected AST sites, managed the development of Spill Control, Contingency and Countermeasures (SPCC) plans.

Brownfield Opportunity Area (BOA) Grant Program Services for the Town of Babylon, Wyandanch, NY

AKRF was retained by the Town of Babylon to prepare a blight study, market study, NYS BOA Step 2 Nomination, an Urban Renewal Plan, and a Generic Environmental Impact Statement (GEIS) as part of a revitalization and redevelopment effort for downtown Wyandanch. Mr. Godick was responsible for overseeing the environmental data collection effort for the 226 brownfields identified in the 105-acre project area, and for identifying strategic sites for which site assessment funding should be sought. He also prepared the Hazardous Materials section of the Wyandanch Downtown Revitalization Plan (which incorporates the Nomination, Urban Renewal Plan, and GEIS), involving a summary of available environmental reports, a review of regulatory records, and limited street-level site inspections.

Alexander Street Urban Renewal Plan, Master Plan, Brownfield Opportunity Area Plan, Yonkers, NY

AKRF was retained by the City of Yonkers to prepare an Urban Renewal Plan, Master Plan, Brownfield Opportunity Area Plan, and **a** Generic Environmental Impact Statement (GEIS) for a 153 acre industrial area along Alexander Street on the Yonkers Waterfront. Mr. Godick was responsible for the Hazardous Materials sections of the GEIS and Urban Renewal Plan. Mr. Godick managed the environmental data collection effort for the entire study area which involved review and summary of existing environmental reports, a review of regulatory records, and field inspections. The collected information was used to prioritize individual parcels for funding and remediation. The Master Plan for the area called for the development of a mixed-use neighborhood consisting of residential, neighborhood retail, and office space uses with substantial public open space, access to the Hudson River, and marina facilities.

KATHLEEN BRUNNER

TECHNICAL DIRECTOR

Kathleen Brunner is a Technical Director with more than 12 years of professional environmental consulting experience. She specializes in environmental site assessments and investigations, site remediation, and hazardous materials planning studies. Ms. Brunner has extensive experience performing Phase I and II environmental site assessments, directing and overseeing site remediation projects, and addressing the hazardous materials aspects of Environmental Impact Statements (EISs).

Ms. Brunner's experience includes supervising the installation of soil borings and groundwater monitoring wells; sampling soil, groundwater, air and soil gas; maintaining and sampling groundwater remediation systems, and overseeing and directing construction-related soil management plans and environmental remediation projects. Her range of project experience includes preparation of proposals, sampling protocols, work plans, health and safety plans, site investigation reports, and closure requests, as well as project scheduling and budgeting. Ms. Brunner has coordinated work and acted as a liaison between clients, property owners, subcontractors, and regulatory agencies on City, State and Federal levels.

Prior to joining AKRF, Ms. Brunner worked for a multidisciplinary consulting firm at their offices in Pewaukee, Wisconsin and New York, New York as an environmental scientist.

BACKGROUND

Education

B.A., Physical Geography, University of Wisconsin – Milwaukee, 1995

Licenses/Certifications

40-Hr Hazardous Waste Operations Site Worker, 1997 to present

Years of Experience

Year started in company: 2004

Year started in industry: 1996

RELEVANT EXPERIENCE

C.E. Flushing Site, Flushing, NY

Ms. Brunner is managing and coordinating the investigation, remediation and post-remediation monitoring of a former industrial site in Flushing, Queens, NY as part of redevelopment of the property. The investigation included groundwater sampling, delineation of known areas of soil contamination, and delineating PCB-containing non-aqueous phase liquid (NAPL). Remedial activities included removal of aboveground and underground storage tanks, NAPL product removal, removal of on-site drainage structures, and excavation of delineated hot spots, including hazardous and non-hazardous waste streams. Ms. Brunner assisted in the preparation of the application for this site to transfer from the New York State Department of Environmental Conservation's (NYSDEC) Voluntary Cleanup Program to the Brownfield Cleanup Program (BCP). Ms. Brunner was responsible for developing work plans for approval by the NYSDEC and New York State Department of Health (NYSDOH), and preparation of summary reports for public comment. Remediation was completed in 2007 and Certificates of Completion under the BCP were issued in December 2007. Post-remediation monitoring includes oversight of construction-related soil disturbance, quarterly groundwater and vapor sampling, and continued annual reporting to NYSDEC and NYSDOH. Ms. Brunner also assisted coordination with the New York City Department of Environmental Protection (NYCDEP) due to an E-designation on the property. As part of the project, Ms. Brunner coordinated with the client, lawyers, architects and engineers of the planned development, tenants of a neighboring property, remediation and construction contractors, US Environmental Protection Agency (USEPA), NYSDEC, NYSDOH, and NYCDEP.

Brownfield Opportunity Area (BOA) Grant Program Services for the Town of Babylon, Wyandanch, NY

AKRF was retained by the Town of Babylon to prepare a blight study, market study, NYS BOA Step 2 Nomination, an Urban Renewal Plan, and a Generic Environmental Impact Statement (GEIS) as part of a revitalization and redevelopment effort for downtown Wyandanch. Ms. Brunner was responsible for overseeing the environmental data collection effort for the 226 brownfields identified in the 105-acre project area, and for identifying strategic sites for which site assessment funding should be sought. She also prepared the Hazardous Materials section of the Wyandanch Downtown Revitalization Plan (which incorporates the Nomination, Urban Renewal Plan, and GEIS), involving a summary of available environmental reports, a review of regulatory records, and limited street-level site inspections.

Bayside Fuel Oil Depot, Brooklyn, NY

Ms. Brunner is managing the site assessment for a major oil storage facility (MOSF) located on the Gowanus Canal waterfront. Work included follow-up investigation related to a petroleum release and preparation of a remedial action plan. Additional investigation and initial remedial activities are expected to be completed in 2010, and the site is being considered for redevelopment for retail and residential use.

Fresh Kills Park, Staten Island, NY

AKRF is preparing the Generic Environmental Impact Statement (GEIS) for this large-scale, multi-phase project to turn the former Fresh Kills Landfill into a public park. The project involves New York City Department of Sanitation and Department of Parks with regulatory oversight and approval by both NYCDEP and NYSDEC. As part of the hazardous materials chapter for the GEIS, Ms. Brunner researched site history, performed a regulatory records review and prepared a data summary and recommendations for mitigation of potential future impacts.

Atlantic Yards Arena and Redevelopment Project, Brooklyn, NY

AKRF prepared the Environmental Impact Statement (EIS) and Blight Study for this ambitious and controversial land use initiative. The project, overseen by the Empire State Development Corporation (ESDC), calls for the redevelopment of an underutilized and underdeveloped 22-acre site in the Atlantic Terminal area of Brooklyn, adjacent to Downtown Brooklyn. The project includes a new arena for the Nets basketball team, along with mixed-income residential, commercial office, retail, hotel, and community facility uses. The total project cost is estimated at $4.5 billion. Key issues addressed in the EIS include: potential impacts on water quality in the Gowanus Canal and East River; concerns over land use compatibility and urban design; potential adverse traffic and air quality impacts; and potential adverse effects on socioeconomic conditions in the study area. In addition, the EIS presented a detailed description of construction activities and phasing, and an analysis of potential averse impacts during project construction. The FEIS was issued in December, 2006. Ms. Brunner served on a team of Hazmat staff conducting Phase I Environmental Site Assessments in accordance with ASTM E-1527-00 related to the potential development of up to 8 city blocks. As part of the study, Ms. Brunner coordinated with the client, property owners or their representatives, and tenants. Her work scope included site reconnaissance, site history and records review, interviews, report preparation, recommendations and data summary to be used in preparation of the EIS chapter.

Edgemere By the Sea, Rockaway, NY

Ms. Brunner performed a Phase I Environmental Site Assessment of 73 city lots located on nine blocks in accordance with ASTM E-1527-00 related to the potential development of the area. Her work scope included site reconnaissance, site history and records review, interviews, report preparation and recommendations. Based on the findings in the Phase I, Phase II was performed. Ms. Brunner coordinated and oversaw soil boring installation and collected soil and groundwater samples.

Fulton Street Transit Center, New York, NY

While working with another firm, Ms. Brunner worked with a multi-company project team assisting with work pertaining to subsurface environmental issues. Ms. Brunner provided general environmental oversight of soil borings, collected groundwater samples from wells, conducted rising head slug tests, and calculated hydraulic conductivity estimates. She prepared the Health and Safety Plan, environmental portions of the work plan, and the Environmental Subsurface Investigation Plan.

DaimlerChrysler, Kenosha, WI

While with another firm, Ms. Brunner assisted in multiple phases of work at an approximately 100-acre DaimlerChrysler manufacturing facility. During construction of a new building, Ms. Brunner observed excavation activities, directed contaminated soil excavation, and managed dewatering treatment and discharge. Post-construction, Ms. Brunner assisted in the reconstruction of two groundwater remediation systems and an SVE system, including plumbing an oil water separator and stripper, and installing appropriate venting and sampling ports. Ms. Brunner also assisted in equipment start-up and subsequent troubleshooting and sampling of influent and effluent. On a quarterly basis, routine and troubleshooting maintenance work was performed on the pumps, flow meters, strippers, oil/water separators and other system components for six remediation systems. Ms. Brunner also directed and documented monitoring well installation, collected groundwater samples from up to 50 monitoring wells and sumps, and air samples from soil vapor extraction systems, reviewed and summarized field and laboratory data, and assisted in writing semi-annual and annual reports for this facility. Report preparation included quality assurance calculations, determination of quantity of free product and dissolved phase contaminant removal, and project narrative of activities completed during the reporting period.

ERIC PARK

ENVIRONMENTAL ENGINEER

BACKGROUND

Working in the Hazardous Materials department, Mr. Park has been involved in various remediation oversight projects, in the planning, executing and reporting phases of work.

Education

B.S. Engineering, Cooper Union Albert Nerken School of Engineering, 2006

Licenses/Certifications

40-hour OSHA Certified

Order of the Engineer

Professional Memberships

Years of Experience

Year started in company: 2006

Year started in industry: 2006

RELEVANT EXPERIENCE

Brooklyn Bridge Park, Brooklyn, NY

Mr. Park has been involved in the application for the Department of Sanitation of New York (DSNY) Fill Materials Operation (FMO) permit. He has been working with project consultants and architects to complete the requirements necessary to obtain the FMO. The DSNY permit will allow for the import of gross amounts of approved fill to be used on-site for the construction of noise mitigating hills at the proposed park.

East Side Access, Long Island City, NY

Mr. Park has been working with the New York Metropolitan Transit Authority (MTA) in continued dust concentration analysis related to the East Side Access underground tunnel drilling operation. Mr. Park has been working with MTA and its subcontractors to ascertain the source of particulate in the local ambient air and mitigate all sources.

Queens West Remediation, Long Island City, NY

Mr. Park has been involved in the on-going post-remediation activities at various sites in the Queens West development community. Queens West has a long history of contaminated sites, mostly caused by coal tar-related industrial facilities that were located in the vicinity in the past. Working with other consultants, Mr. Park has taken part in groundwater, soil and soil gas sampling and has been involved in the post investigation documentation.

Halesite MGP RFP, Halesite, NY

Mr. Park was involved in the response to a Request for Proposal regarding the in-situ remediation of a former manufactured gas plant. Mr. Park researched the relevant current in-situ groundwater remediation technologies including Chemox and air sparging. Groundwater and soil beneath the property have been affected by MGP related contaminants such as coal tar. Mr. Park was involved in coordination meeting with in-house marketing and sub-contractors working in conjunction with AKRF for the submission of the proposal.

Flushing Industrial Park, Flushing, NY

Mr. Park was involved in the remedial activities at the Brownfield site in Flushing, New York. Mr. Park assisted in the installation and sampling of post-remediation groundwater monitoring wells. Mr. Park has also been involved in the preparation of the Site Management Plan and Final Engineering Report, detailing the on-site remedial activities to date.

Columbia University Manhattanville Academic Mixed-Use Development, New York, NY

Mr. Park was involved in the preparation of the Remedial Action Plan / Construction Health and Safety Plan for the redevelopment of Columbia University. Due to the scope and scale of the intended development, many issues concerning hazardous materials (auto-industry related facilities, historic MGP sites) were addressed in conjunction with issues from the associated Environmental Impact Statement.

AvalonBay Gold Street, Brooklyn, NY

Mr. Park was involved in subsurface investigations at the proposed AvalonBay development site. The work entailed collecting soil samples for waste characterization and groundwater data. The site work was used as part of the ongoing pre-construction phase activities.

AvalonBay Willoughby West, Brooklyn, NY

Mr. Park has conducted Phase I and Phase II subsurface investigations at the proposed AvalonBay development in Downtown Brooklyn. Working closely with the landowner and AvalonBay, Mr. Park has been evaluating subsurface conditions at the site concerning a known fuel oil spill and potential solvent and gasoline contamination plumes within the site.

Paragon Paint, Long Island City, NY

Mr. Park oversaw the installation of ten soil borings at the abandoned Paragon Paint facility. Soil, soil vapor, and groundwater samples were collected to determine the severity of the contamination associated with ten on site underground storage tanks as well as the paint operations formerly conducted on site.

Gedney Way Landfill, White Plains, NY

Mr. Park has been involved in the ongoing landfill closure procedures at the Gedney Way composting facility. The investigation consisted of the installation of monitoring wells, soil gas points, soil borings and test pits to delineate the extents of both subsurface fill material associated with the landfill as well as the extent of VOC contamination associated with a known incident in the 1980's. Groundwater samples were collected using low-flow sampling methods.

Mott Haven School Campus, Bronx, NY

Mr. Park was involved in the continuing environmental monitoring efforts at the School Construction Authority site at Mott Haven. In addition to monitoring for particulate and contamination, the work also involved coordinating with the SCA, engineers and other contactors.

Lincoln Center Tank Closure, New York, NY

Mr. Park was involved in the closure of 12 underground fuel oil storage tanks at the parking facility at Lincoln Center. The work involved the closure in place and removal of piping associated with the underground storage tanks. Tanks were closed to specification by exposing and vacuuming the contents and using a two-part foam to fill the tanks in place.

STEPHEN R. GRENS, JR.

ENVIRONMENTAL SPECIALIST

Stephen Grens, Jr. is an Environmental Specialist with expertise in Phase I and II site assessments and comprehensive asbestos surveys. He has completed assessments in New York, New Jersey, Connecticut, Pennsylvania, North Carolina, South Carolina, and Georgia. Mr. Grens is also actively involved in data interpretation and report preparation.

BACKGROUND

Education

B.S., Environmental Sciences, State University of New York (SUNY), Purchase, Expected Graduation Date: May 2012

Licenses/Certifications

New York State Certified Asbestos Inspector, Asbestos Project Monitor, and Air Sampling Technician, 1998

LIRR Roadway Worker, 2007

OSHA HAZWOPER Site Safety Supervisor, 2006

NYC Department of Buildings (DOB) Expediter, 2000

Years of Experience

Year started in company: 1996

Year started in industry: 1996

RELEVANT EXPERIENCE

Domino Sugar, Brooklyn, NY

The Refinery LLC is proposing to redevelop the former Domino Sugar site located along the Williamsburg waterfront in Brooklyn with residential and mixed-use buildings. Mr. Grens performed environmental oversight for the installation of numerous groundwater monitor wells, soil borings and soil and groundwater sampling. Soil and groundwater sampling and monitoring are being performed in accordance with the NYCDEP approved workplan.

Triangle Parcel, Orangeburg, NY

Mr. Grens performed environmental oversight for the installation of numerous groundwater monitor wells, soil borings and soil and groundwater sampling. Soil and groundwater sampling and monitoring are being performed in accordance with the NYSDEC approved workplan.

Gedney Way Landfill, White Plains, NY

Mr. Grens performed environmental oversight for the installation of numerous groundwater monitor wells, soil gas vapor extraction points, test pits, soil removal and soil and groundwater sampling. Remedial activities at the landfill are being performed for landfill closure in accordance with the NYSDEC approved workplan.

Flushing Industrial Park, Flushing, NY

Mr. Grens performed environmental and remediation oversight including the implantation of the site specific health and safety plan (HASP) during excavation activities at the Flushing Industrial Park site. Approximately 22,762 tons of PCB contaminated soil and 55,629 tons of non-hazardous soil were remediated and disposed of at the appropriate receiving facilities. The environmental clean-up activities at the Flushing Industrial site were done in accordance with the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) under the Brownfields Clean-Up Program.

Queens West Development Project, Long Island City, NY

Mr. Grens performed environmental oversight including the implantation of the site specific health and safety plan (HASP) during excavation activities at the site. The environmental clean-up activities were done in accordance with the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) under the Brownfields Clean-Up Program.

Bridgeport Municipal Stadium (Former Jenkins Valve Property), Bridgeport, CT

As part of the City of Bridgeport's revitalization program for the construction of a minor league baseball facility, Mr. Grens supervised and documented the removal of approximately 14,000 tons of solvent, petroleum, and metal-contaminated soil. He was responsible for the delineation of contaminated areas as well as subsequent confirmation soil sampling for the local sponsoring municipality. Additional on-site activities included the installation of groundwater monitoring wells, removal of underground storage tanks, and management of the current groundwater monitoring program.

Catskill/Delaware Water Treatment Facility, Mount Pleasant and Greenburgh, NY

Mr. Grens was responsible for the contaminated materials analysis as part of the Environmental Impact Statement (EIS) for the New York City Department of Environmental Protection (DEP). The analysis included the Phase I site assessment, a description of the chemicals to be used in the direct filtration process, and their alternatives. Mr. Grens also worked on the Electromagnetic Fields (EMF) analysis for this EIS.

East 75th/76th Street Development Site, New York, NY

As the designated health and safety officer (HSO), Mr. Grens' responsibilities included the personal well-being of all on-site personnel during Phase II activities. He managed and supervised the excavation, removal, and off-site disposal of numerous hazardous materials and petroleum-containing underground storage tanks, associated hazardous and contaminated soil, and stained bedrock.

Memorial Sloan Kettering Cancer Center, New York, NY

Mr. Grens has performed numerous noise impact studies on the east side of midtown Manhattan to assist in the determination of the various project scenarios within each site's respective EIS. Mr. Grens' tasks included collecting relevant noise data at numerous locations during morning, afternoon, and evening rush hours to determine real time noise levels utilizing a Larsen Davis decibel level indicator.

Columbia University Manhattanville Academic Mixed-Use Development, New York, NY

Mr. Grens performed numerous Phase I Environmental Site Assessments for the Columbia Manhattanville re-zoning project. Phase II activities included the installation of soil borings and groundwater monitoring wells and the collection of soil and groundwater samples.

St. Agnes Hospital Redevelopment, White Plains, NY

AKRF is currently working for North Street Community, LLC on the former St. Agnes Hospital campus in White Plains, New York. The project involves redeveloping the property into an assisted living and nursing home facility. Some of the existing buildings and uses will remain and several new buildings will be built for the new facility. AKRF's assignment includes preparing the site plan package to accompany the Draft Environmental Impact Statement (DEIS) for the project. Mr. Grens performed a Phase I Environmental Site Assessments of the numerous structures located on the property.

ELIZABETH J. BAIRD

ENVIRONMENTAL SCIENTIST

Ms. Baird is an environmental scientist with three years of professional environmental consulting experience working in both the firm's Hazardous Materials and the Natural Resources departments. Her range of expertise within Hazardous Materials includes completing environmental site assessments, remediation oversight, subsurface soil investigations, groundwater monitoring, waste characterization, waste removal documentation, soil boring installation and sampling, test pit oversight, and air monitoring. As a member of the Natural Resources Department, Ms. Baird conducts vegetation and wildlife surveys, provides permitting support, and writes Environmental Impact Statements (EISs).

Prior to joining AKRF, Ms. Baird conducted wildlife research for the Arizona Game and Fish Department, National Park Service in Colorado, and Ecosystem Management Research Institute in Wyoming. Currently, Ms. Baird is pursuing a Master of Science at Hofstra University. Her research focuses on habitat selection of diamondback terrapins (*Malaclemys terrapin*) and the implications of salt marsh loss on terrapin conservation in Jamaica Bay Wildlife Refuge.

Education

M.S., Wildlife Science, Hofstra University, expected 2010

B.S., Environmental Biology, SUNY—College of Environmental Science and Forestry, 2005

Professional Memberships

Society of Conservation Biology

Society of the Study of Amphibians and Reptiles

Licenses/Certifications

40-Hour Hazardous Waste Operations Site Worker

New York State Licensed Asbestos Inspector

Years of Experience

Year Started in Company: 2006

Year Started in Industry: 2005

RELEVANT EXPERIENCE

NYSDOT West Shore Expressway, Staten Island, NY

Ms. Baird performed threatened and endangered species surveys for a NYSDOT Highway Improvement Project located on West Shore Expressway. Extensive habitat assessments and wildlife surveys were conducted for the state-endangered eastern mud turtle (*Kinosternon subrubrum*) and the state-threatened eastern fence lizard (*Sceloporus undulates*). Survey methodology was coordinated with New York State Department of Environmental Conservation (NYSDEC).

Flushing Industrial Park, Flushing, NY

Ms. Baird performed environmental and remediation oversight including the implementation of the site-specific health and safety plan (HASP) during excavation activities at the Flushing Industrial Park site. The environmental remediation was performed under the U.S. Environmental Protection Agency (EPA) and NYSDEC Brownfield Clean-Up Program. Approximately 23,000 tons of PCB/lead contaminated soil and 95,400 tons of non-hazardous waste were remediated at this large PCB-contaminated former utility site. For this project, she has completed field work for geotechnical oversight, soil sample collection, low-flow groundwater monitoring, air quality monitoring, and field screening of PCB contaminated soil. Ms. Baird is also actively involved in data interpretation and report preparation.

New York State Department of Transportation (NYSDOT)

AKRF is responsible for environmental permit support of approximately 150 NYSDOT Region 11 projects. Ms. Baird serves as a Project Manager for more than 15 NYSDOT highway improvement projects. As part of her responsibilities, she works closely with design engineer consultants to facilitate the procurement of permits and also prepares permit applications.

Charleston Natural Resources Study, Staten Island

Ms. Baird conducted wildlife surveys for a one-year study of natural resources at a New York city-owned parcel in Staten Island, NY. This sensitive site is known to contain numerous state-threatened and endangered species and has potentially important hydrological connects to adjacent state parklands.

Roosevelt New Middle School, Roosevelt, NY

AKRF was retained by the Roosevelt Union Free School District to oversee remediation of a former Nassau County Department of Public Works Pesticide Mixing Facility. For this project, she oversaw remediation activities and completed field work for geotechnical oversight, working closely with construction managers and subcontractors. Ms. Baird performed air quality monitoring, soil sample collection, groundwater monitoring, and implementation of the site-specific HASP. Ms. Baird was actively involved in data interpretation and remedial action report documentation.

Amtrak & NJ Transit Portal Bridge Capacity Enhancement EIS, Hackensack River, NJ

The Portal Bridge is a critical link on the Northeast Corridor line, and its timely replacement is essential to Amtrak and NJ Transit's long-term plans to increase transit service between New Jersey and New York. Ms. Baird serves on a large multi-firm team to aid in the coordination efforts between engineering and environmental sub-consultants and in the procurement of permits. The environmental review is being overseen by the Federal Railroad Administration. Both wetlands and historic resources are key issues for this project, as the bridge is listed in the New Jersey Register of Historic Places and is located in the New Jersey Meadowlands on the Hackensack River.

The Watchtower Bible and Tract Society Amended Site Plan, Patterson, NY

The Watchtower Bible and Tract Society of New York has requested an amendment to its site plan from the Patterson Planning Board. The proposed action includes the construction of an additional 172,800 square feet of building space, which will include two new residence buildings, an office building, additions to the audio/video building, and a new maintenance building. AKRF has been selected to prepare an EIS to asses the potential effect of the proposed project on the environment and community. Ms. Baird serves on the project team for the preparation of the EIS and has conducted wildlife and habitat surveys on the project site.

NYC School Construction Authority: Mott Haven Remediation, Bronx, NY

On behalf of the NYC School Construction Authority, AKRF has been retained to set up and implement a Community Air Monitoring Plan (CAMP) as well as work zone air monitoring for the entire site during all remediation activities. The site, designated in the Brownfield Cleanup Program (BCP), was formerly used as a Manufactured Gas Plant (MGP) site as well as a facility run by Metro-North Railroad. Ms. Baird performed air monitoring of volatile organic compound levels and dust particulate levels in both the work zone and community area.

Route 17 Conversion to Interstate 86, Orange County, NY

The NYSDOT is currently upgrading portions of Route 17 between Exits 122 and 131 to meet federal interstate standards. AKRF has been retained to assess the environmental impacts of this project. For this project, Ms. Baird has conducted habitat assessments for the NYS-endangered bog turtle along the entire 19-mile stretch of the proposed project.

2350 Fifth Avenue, New York, NY

Ms. Baird has performed field work for multiple subsurface investigations at this former commercial dry cleaning facility, which has been identified as an inactive hazardous waste Superfund site. Her work for this project included groundwater monitoring, oversight of geoprobe investigations, and soil vapor sampling.

Ulysses Byas Elementary School, Roosevelt, NY

Ms. Baird has conducted several dry well investigations and performed oversight for the remediation and closure of dry wells on the reconstruction site of the Ulysses Byas Elementary School in Roosevelt, NY. In addition, she was actively involved in report preparation.

Gedney Way Landfill, White Plains, NY

Ms. Baird has been involved in the ongoing landfill closures procedures at the Gedney Way composting facility. She was involved in groundwater sampling using low-flow sampling methods and soil gas sampling.

GREGORY D. BAIRD

ENVIRONMENTAL SCIENTIST

Mr. Baird is an Environmental Scientist with 4 years of professional environmental consulting experience. His range of expertise includes remediation oversight, subsurface soil investigations, waste characterization sampling, groundwater monitoring, well sampling, soil boring sampling, test pit oversight, and air monitoring.

Prior to joining AKRF, Mr. Baird was employed by Brookside Environmental for two years where he was responsible for various remediation activities such as, waste characterization sampling, under ground storage tank removal and closures, and hazardous/non-hazardous waste documentation and removal.

BACKGROUND

Education

B.S., Geology, State University of New York at New Paltz, New York, 2004

Licenses/Certifications

40 Hour Hazardous Waste Operations Site Worker, 2005

Asbestos Project Monitor, Air Technician and Inspector, 2008

Lead Based Paint Risk Assessor and Inspector, 2009

Lead Risk Assessor, 2009

Erosion and Sediment Control Site Inspector, 2009

Confined Space Entry, 2006

Asbestos Inspector, 2008

Professional Memberships

Years of Experience

Year Started in Company: 2006

Year Started in Industry: 2004

RELEVANT EXPERIENCE

Roosevelt New Middle School, Roosevelt, NY

AKRF has been retained by the Roosevelt Union Free School District to oversee remediation of a former Nassau Count Department of Public Works Pesticide Mixing Facility. Mr. Baird oversaw remediation activities which included excavation and disposal of contaminated soils. He also performed soil sample collection, groundwater and air monitoring, and prepared remedial action work documents. In addition to remedial over site, the work also involved coordinating with the construction managers and subcontractors.

MGP Remediation, Halesite, NY

AKRF

Mr. Baird oversaw remediation activities at a former MGP site, which included excavation and disposal of coal tar contaminated soils, screening of soils for potential on-site reuse as subsurface backfill and prepared weekly SWPP reports. He conducted endpoint and waste characterization sampling, perimeter community air monitoring, and collected verification VOC samples. He coordinated efforts with on-site contractors, project managers, and the NYSDEC

Muss Flushing Remediation, Flushing, NY

Mr.Baird oversaw remediation activities, which included excavation and disposal of non-hazardous soils and dewatering of excavations. He conducted waste characterization sampling, imported backfill sampling, and low-flow groundwater sampling.

Mott Haven Remediation, Bronx, NY

Mr. Baird was involved in the continuing environmental monitoring efforts at the School Construction Authority site at Mott Haven. He performed air monitoring at the site which involved monitoring volatile organic compound levels and dust particulate levels in both the work zone and community area.

Gedney Way Landfill, White Plains, NY

Mr. Baird has been involved in the ongoing landfill closure procedures at the Gedney Way composting facility. He was involved in groundwater sampling using low-flow sampling methods and soil gas sampling.

AvalonBay Gold Street, Brooklyn, NY

Mr. Baird was involved in subsurface investigations at the proposed AvalonBay development site. The work entailed collecting and logging soil samples for waste characterization and groundwater data. The site work was used as part of the ongoing pre-construction phase activities.

Centennial Elementary School, Roosevelt, NY

Mr. Baird was the project monitor for the removal of all asbestos containing material throughout the elementary school before its demolition.