

Prepared for:  
**Consolidated Edison Co. of New York, Inc.**  
**31-01 20<sup>th</sup> Avenue, Astoria, NY 11105**

# Remedial Investigation Report

## Stuyvesant Town

### Former Manufactured Gas Plant Sites

Former East 14th Street Station Site (NYSDEC Site #V00535),  
Former East 17th Street Station Site (NYSDEC Site #V00541), and  
Former East 19th Street Station Site (NYSDEC Site #V00542)  
**New York, New York**

**VCA Index D2—0003-02-08**

AECOM, Inc.  
October 2009  
**Document No.: 01869-164**

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# Contents

<b>1.0 Introduction .....</b>	<b>1-1</b>
1.1 Remedial Investigation Purposes and Objectives .....	1-2
1.2 Scope of Work .....	1-2
1.3 Report Organization .....	1-3
<b>2.0 Site Location, Description, and Setting .....</b>	<b>2-1</b>
2.1 Site History .....	2-2
2.1.1 Pre-Manufactured Gas Plant.....	2-2
2.1.2 Manufactured Gas Plant.....	2-2
2.1.3 Post-Manufactured Gas Plant .....	2-3
2.2 Physical and Environmental Setting .....	2-4
2.2.1 Site Design and Infrastructure.....	2-4
2.2.2 Environmental Setting .....	2-5
2.3 Previous Investigations.....	2-6
2.3.1 MGP Research Reports – Langan (2002, 2003).....	2-7
2.3.2 Air and Soil Gas Sampling – RETEC (2003).....	2-8
2.3.3 Site Characterization – Haley & Aldrich (2004) .....	2-9
2.3.4 Interim Remedial Investigation – GEI (2007).....	2-10
2.3.5 Valve Replacement Project – GEI (2007).....	2-11
<b>3.0 Supplemental Remedial Investigation Field Activities .....</b>	<b>3-1</b>
3.1 Underground Utility Clearance .....	3-1
3.2 Community Air Monitoring .....	3-3
3.3 Surface Soil Sampling and Analysis .....	3-3
3.3.1 Upper Fill Sampling and Analysis .....	3-4
3.3.2 Lower Fill/Native Soil Sampling and Analysis.....	3-4
3.4 Monitoring Well Installation and Development .....	3-6
3.4.1 Groundwater Elevation and Nonaqueous Phase Liquid Thickness Measurements.....	3-6
3.4.2 Groundwater Sampling and Analysis.....	3-6
3.4.3 Aquifer Conductivity Testing.....	3-7
3.5 Indoor Air Survey .....	3-7
3.6 Soil Gas Sampling .....	3-8
3.7 Chemical Analytical Program .....	3-8
3.8 Management of Investigation-Derived Waste .....	3-8
3.9 Survey of Remedial Investigation Sampling Locations and Basemap Development .....	3-9
3.10 Quality Assurance/Quality Control .....	3-9

**4.0 Regional Geology/Hydrogeology ..... 4-1**

4.1 Site Geology ..... 4-1

    4.1.1 Fill ..... 4-1

    4.1.2 Organic Deposits/Peat..... 4-1

    4.1.3 Glacial Deposits ..... 4-2

    4.1.4 Bedrock ..... 4-2

4.2 Site Hydrogeology ..... 4-3

    4.2.1 Upper Glacial Aquifer – Shallow (Water Table) Zone ..... 4-4

    4.2.2 Upper Glacial Aquifer – Intermediate and Deep Groundwater Zones..... 4-4

    4.2.3 Vertical Head Gradients ..... 4-5

**5.0 Analytical Results and Subsurface Observations ..... 5-1**

5.1 Surface Soil..... 5-1

    5.1.1 Former East 14th Street Station Results ..... 5-1

    5.1.2 Former East 17th Street Station Results ..... 5-1

    5.1.3 Former East 19th Street Station Results ..... 5-2

5.2 Subsurface Soils..... 5-2

    5.2.1 Former East 14th Street Station Results ..... 5-2

    5.2.2 Former East 17th Street Station Results ..... 5-5

    5.2.3 Former East 19th Street Station Results ..... 5-7

    5.2.4 First Avenue Loop Road Results ..... 5-7

5.3 Groundwater ..... 5-7

    5.3.1 Background Groundwater Results ..... 5-8

    5.3.2 Former East 14th Street Station Results ..... 5-9

    5.3.3 Former East 17th Street Station Results ..... 5-11

    5.3.4 Former East 19th Street Station Results ..... 5-12

5.4 Indoor Air and Soil Gas ..... 5-12

    5.4.1 Former East 14th Street Station Results ..... 5-13

    5.4.2 Former East 17th Street Station Results ..... 5-13

    5.4.3 Former East 19th Street Station Results ..... 5-14

**6.0 Qualitative Human Health Exposure Assessment ..... 6-1**

6.1 Site Setting..... 6-1

6.2 Exposure Assessment..... 6-1

    6.2.1 Conceptual Site Model ..... 6-1

    6.2.2 Potential Sources of Residuals ..... 6-2

    6.2.3 Potential Release Mechanisms..... 6-2

    6.2.4 Potential Human Receptors and Exposure Pathways ..... 6-2

6.3 Conclusions ..... 6-4

**7.0 Summary and Conclusions ..... 7-1**

7.1 Former East 14th Street Station..... 7-1

7.2 Former East 17th Street Station..... 7-1

7.3 Former East 19th Street Station..... 7-2

7.4 Conclusions ..... 7-3

**8.0 Recommendations..... 8-1**

**9.0 References..... 9-1**

## List of Appendices

Appendix A Historic Site Maps

Appendix B Boring and Well Construction Logs

Appendix C GEI Valve Replacement Project Summary Report

Appendix D Groundwater Sampling Forms

Appendix E GEI Aquifer Conductivity Data

Appendix F Investigation-Derived Waste Management

Appendix G Summary Tables and Data Usability Reports

Appendix H Background Statistical Analysis

## List of Tables

3-1	Sample Location and Collection Rationale
3-2	Monitoring Well Construction Data Summary
3-3	Groundwater Elevation Summary
3-4	Hydraulic Conductivity and Gradient Values for Upper Glacial Aquifer
3-5	Summary of Investigation-Derived Waste
3-6	Environmental Investigation and QA/QC Sample Collection Summary
4-1	Vertical Hydraulic Head Differential Summary
5-1	East 14th Street Station Surface Soil Analytical Results Summary
5-2	East 17th Street Station Surface Soil Analytical Results Summary
5-3	East 19th Street Station Surface Soil Analytical Results Summary
5-4	East 14th Street Station Subsurface Soil Analytical Results Summary
5-5	East 17th Street Station Subsurface Soil Analytical Results Summary
5-6	East 19th Street Station Subsurface Soil Analytical Results Summary
5-7	First Avenue Loop Road Subsurface Soil Analytical Results Summary
5-8	Background Groundwater Analytical Results Summary
5-9	East 14th Street Station Groundwater Analytical Results Summary
5-10	East 17th Street Station Groundwater Analytical Results Summary
5-11	East 19th Street Station Groundwater Analytical Results Summary
5-12	Ambient Air Analytical Results Summary
5-13	Air and Soil Gas Analytical Results Summary
6-1	Exposure Pathway Analysis - Potential Area Receptors

## List of Figures

2-1	Site Location Map
2-2	Current Site Layout and Former MGP Structures
2-3	Previous Investigation Locations
3-1	RI Investigation Locations
4-1	Cross Section Location Map
4-2A	Cross Section A-A'
4-2B	Cross Section A-A'
4-3	Cross Section C-C'
4-4	Cross Section B-B'
4-5A	Cross Section D-D'
4-5B	Cross Section D-D'
4-6	Cross Section E-E'
4-7A	Cross Section F-F'
4-7B	Cross Section F-F'
4-8	Groundwater Contour Map
5-1	Concentrations of Compounds Detected in Surface Soils
5-2A	Target Compound Exceedance Summary Shallow Soils
5-2B	Target Compound Exceedance Summary Intermediate Soils
5-2C	Target Compound Exceedance Summary Deep Soils
5-3A	East 14th Street Station Subsurface Soil Analytical Exceedance Summary
5-3B	East 17th Street Station Subsurface Soil Analytical Exceedance Summary
5-3C	East 19th Street Station Subsurface Soil Analytical Exceedance Summary
5-3D	First Avenue Loop Road Subsurface Soil Analytical Exceedance Summary
5-4A	Target Compound Exceedance Summary – Groundwater 2006
5-4B	Target Compound Exceedance Summary – Groundwater 2008
5-5A	Background Wells Groundwater Analytical Exceedance Summary

- 5-5B East 14th Street Station Groundwater Analytical Exceedance Summary
- 5-5C East 17th Street Station Groundwater Analytical Exceedance Summary
- 5-5D East 19th Street Station Groundwater Analytical Exceedance Summary
- 6-1 Conceptual Site Model

## Executive Summary

As required under the terms of Voluntary Cleanup Agreement Index N. D2-0003-02-08 (VCA) by and between the New York State Department of Environmental Conservation (NYSDEC) and Consolidated Edison Co. of New York, Inc. (Con Edison), this report presents the results and findings of the remedial investigation (RI) that was performed on Con Edison's behalf by AECOM Environment ([AECOM] formerly ENSR Corporation [ENSR]), for the former manufactured gas plant sites (MGP) of the East 14th Street Station (NYSDEC Site #V00535), East 17th Street Station (NYSDEC Site #V00541), and East 19th Street Station (NYSDEC Site #V00542) sites located in the borough of Manhattan in New York City, New York. Except as otherwise indicated, the RI was conducted in two phases and in conformance with GEI's NYSDEC-approved RI Work Plan dated February 2006 and with AECOM's NYSDEC-approved supplemental RI Work Plan dated May 2008 (ENSR, 2008).

As approved by the NYSDEC, the RI was designed to be an extension of the Site Characterization Study (SCS) that was conducted for the East 14th Street Station, East 17th Street Station, and East 19th Street Station sites during 2004, and it focused primarily on the horizontal and vertical delineation of previously identified MGP-related impacts. RI activities were performed at the site in 2006 by GEI in accordance with the NYSDEC-approved RI Work Plan (GEI 2006). The 2006 RI results were presented in the Draft Remedial Investigation Report for the site (GEI 2006). Based on NYSDEC comments on the Draft RI Report, additional investigation was requested and the Draft RI report was finalized as the Interim Remedial Investigation Report (IRIR) in September 2007. Based on the NYSDEC August 24, 2007 comments, AECOM, on behalf of Con Edison, developed a supplemental RI Work Plan (ENSR 2008) to further investigate the impacts associated with the site.

This document presents the results of the remedial investigation performed for the former East 14th Street, East 17th Street, and East 19th Street holder stations. These sites were located within the footprint of the current Stuyvesant Town residential apartment complex in the Borough of Manhattan in New York City, New York. RI activities included delineation of the MGP-related soil and groundwater impacts within the property boundary of Stuyvesant Town, including immediately adjacent sidewalks up to the curb along surrounding streets. In addition, two borings were completed on the south side of East 14th Street to delineate MGP-related soil impacts south of the former holder station. Previously installed groundwater monitoring wells on the east side of Avenue C were also sampled to determine MGP-related groundwater impacts attributable to the former East 14th Street holder station. Also presented in this report are the data collected from a single boring completed on the First Avenue Loop Road that was installed in accordance with comments from the NYSDEC dated August 24, 2007.

The East 14th Street, East 17th Street, and East 19th Street Station sites are comprised the former grounds of three MGP holder stations that were owned and operated by Con Edison and its corporate predecessors from approximately 1857 until 1945. The East 14th Street Station site occupied the majority of the block between Avenue B and Avenue C and East 14th and East 15th Streets on the western side of Avenue C. The East 17th Street Station site is situated approximately mid-way between Avenues B and C and extends from East 17th Street to East 18th Street. The East 19th Street Station site occupied the least amount of property of the three station sites located at the present-day Stuyvesant Town apartment complex and was located on the south side of East 19th Street between Avenues A and B.

These station sites were decommissioned between 1921 and 1934 when they were sold by Con Edison's predecessors. In 1945, the grounds of the former holder stations were sold to Stuyvesant Town Corporation and the Metropolitan Life Insurance Company (MetLife) for the construction of the Stuyvesant Town housing complex.



The site geology generally consists of four units. These units, from ground surface downward include fill; a layer of organic deposits and/or peat; a layer of glacial lacustrine/glacial outwash deposits; and bedrock. Bedrock, identified as the Ravenswood Granodiorite, is present at varying depths beneath the three former MGP station sites ranging from approximately 40 to 80 feet (ft) below ground surface (bgs) in the area near the former East 14th Street Station to more than 80 ft bgs in the footprint of the former East 17th Street Station. In addition to the Ravenswood Granodiorite underlying the Stuyvesant Town property, the Inwood Marble underlies the area of the former East 19th Street Station and is present at approximately 60 to 80 ft bgs in this area.

A single unconfined, unconsolidated overburden aquifer is present beneath the Stuyvesant Town property and therefore, the three former holder stations. Shallow (approximately 5 to 15 ft bgs), intermediate (approximately 25 to 35 ft bgs), and deep (approximately 50 to 70 ft bgs) zones within the overburden aquifer were evaluated during the investigations. The groundwater flow direction in all of the depth zones is to the east-northeast towards the East River. The vertical gradient is generally downward throughout the site, however it is locally influenced by heterogeneities in the subsurface and exhibits an upward gradient in select monitoring wells pairs.

Based on site observations and analytical data, it appears that surface soils were imported to the site after the MGP operations ceased, possibly for final grading purposes during the construction of the Stuyvesant Town housing complex. The concentrations of compounds detected in the SCS and RI surface soil samples are considered to be attributable to fill material quality, anthropogenic sources, or naturally occurring sources unrelated to former MGP operations.

The fill soils underlying Stuyvesant Town are generally distinct from the lower organic deposits and glacial deposits at the site. The majority of the fill appears to represent imported material brought to the property following the cessation of MGP operations. In general shallow subsurface soils, defined as those soils between 0.1 and 17 ft bgs, did not exhibit MGP-related materials.

A capital improvement project to replace the water and hydrant valves across the Stuyvesant Town apartment complex property was completed prior to beginning Supplemental Remedial Investigation (SRI) work. A total of six soil borings were advanced during the SRI to investigate the potential MGP-related impacts encountered in the water valve excavations near the former East 17th and East 19th Street Stations, as well as to investigate shallow subsurface soil impacts observed at the excavations on the First Avenue Loop Road. The information gathered during the SRI from these borings, including analytical samples and visible and olfactory impacts observed during drilling indicate that significant MGP-related impacts are not present at the valve locations.

Intermediate soils were defined as those soils between 17 ft bgs and native soils with the deep soils being defined as native material. At the former East 14th Street Station site, MGP-related impacts were generally observed between 24 and 28 ft bgs. Petroleum-related impacts, however, were observed to a depth of approximately 35 ft bgs. MGP-related subsurface soil impacts have been horizontally and vertically delineated at the East 14th Street Station site. Subsurface soils at the former East 17th Street Station site exhibited MGP-related impacts between 26 and 29 ft bgs including staining and naphthalene-like odors. At the former East 19th Street Station site, impacts were observed in subsurface soils between 4.6 and 16.6 ft bgs with the highest concentrations of total VOCs and SVOCs generally being present in the more shallow fill material. The single boring advanced along the First Avenue Loop Road was completed at 20 ft bgs within the fill. No odors or visible impacts related to former MGP activities were encountered during drilling at this location.

A bedrock investigation was not performed at the site during the RI, however four borings were extended to bedrock during the various investigations that have taken place on this site. MGP-related impacts were not encountered at the overburden-bedrock interface during any of these investigations.

Non-aqueous phase liquid (NAPL) was noted in some of the monitoring wells at the site. Due to the presence of NAPL in monitoring wells at the site, Con Edison submitted an Interim Remedial Measure Work Plan for NAPL Monitoring and Recovery (ENSR 2008a). This work plan was submitted to NYSDEC in December 2008 and is considered to be part of the draft Interim Site Management Plan (SMP), dated August 15, 2008.

Groundwater in the shallow, intermediate, and deep unconfined aquifer zones beneath the sites have been impacted by former MGP operations. The greatest MGP-related groundwater impacts were detected in the vicinity of the former gas holders at the East 14th and East 17th Street Station sites. In the area of the former East 19th Street Station site, the general area of shallow and intermediate groundwater impacts has been determined. At the former East 14th and East 17th Street Station sites, the lateral extent of groundwater impacts in the shallow, intermediate, and deep aquifer zones to the east, southeast, and northeast has not been specifically defined based on comparison with groundwater standards. The vertical extent of groundwater impacts has also not been fully defined. However, unless the evaluation of remedial alternatives or the implementation of remedial actions requires that the groundwater be more fully delineated, additional field work for delineation is not proposed at this time. If additional groundwater data are necessary for remedial alternative evaluation or remedial action implementation, they would be collected during a pre-design investigation.

Soil gas and indoor air sampling was performed during the 2006 phase of the RI and during a prior investigation performed by RETEC in 2003. Indoor air sampling was performed in the following buildings: 522 East 20th Street, 16 Stuyvesant Oval, 245 Avenue C, and 615, 625, 629, 635, and 645 East 14th Street. The results from these sampling events indicated that the indoor air quality within the residential buildings of Stuyvesant Town, as measured on each sampling day, was not likely to have been adversely impacted by subsurface intrusion of MGP-related vapors. Based on the results of these sampling events, intrusion of vapors emanating from MGP-related material that may be present at the site was not evident. In addition, air quality within all Stuyvesant Town buildings was investigated in 2007 on behalf of the Owners. These data have not been reviewed by Con Edison or NYSDEC and are not presented in this report. Although indoor air sampling has not indicated that subsurface vapors associated with former MGP residuals affect indoor air quality, Con Edison is performing additional sampling to determine that there has been no significant change of indoor air quality. Con Edison submitted an Interim Remedial Measure Work Plan (IRMWP) for Indoor Air Sampling (ENSR 2008c) to NYSDEC on November 18, 2008. This IRMWP is also considered to be part of the draft SMP, dated August 15, 2008. The first round of indoor air sampling and analysis was performed in February and March 2009.

A qualitative human health exposure assessment (QHHEA) was performed to identify the potential exposure pathways associated with impacted media for residents, day-care attendees, commercial building occupants, parking lot attendants, maintenance workers, utility workers, and site visitors and pedestrians. Maintenance or utility workers who perform subsurface excavation work and/or repairs could possibly be exposed to impacted media and controls are recommended to limit potential exposures in these areas. Additionally, building residents, day-care attendees, occupants, visitors, and workers could potentially be exposed to indoor air impacts if sub-slab construction activities are performed and controls are recommended to limit exposure during these activities. Remedial options for these areas will be evaluated in an alternatives analysis report. Exposure of residents of the Stuyvesant Town apartment complex to MGP residuals is considered to be unlikely.

A Draft Interim Site Management Plan (ENSR 2008d) (SMP) was developed and submitted to NYSDEC on August 15, 2008. The SMP specifically details institutional controls enacted on the Stuyvesant Town property to protect maintenance, utility and landscape workers from soil impacts present below 5 feet. The plan outlines procedures for detecting and managing impacted soil and groundwater if they are encountered. While still draft, property owner personnel, and all others doing subsurface work, are currently operating under and are subject to the procedures in the SMP..

Based on the combined findings of the SCS and RI, the following activities are recommended for the site:

Delineation of subsurface soil and groundwater impacts associated with the former MGP Stations within Stuyvesant Town has been completed to a sufficient degree to evaluate appropriate remedial technologies and begin development and evaluation of remedial alternatives for the impacts identified at the site for inclusion in an alternatives evaluation report. It is recommended that the alternatives analysis for Stuyvesant Town be initiated. If additional delineation data are necessary for remedial alternatives evaluation or remedial action implementation, it is recommended that they be collected during a pre-design investigation. It is recommended that the Site Management Plan, which includes the Interim Remedial Measure Work Plan for NAPL Monitoring and Recovery and the Interim Remedial Measure Work Plan for Indoor Air Monitoring be implemented at the site..

## List of Acronyms

AECOM – AECOM Environment  
 ADT – Aquifer Drilling and Testing, Incorporated  
 AGS – Advanced Geophysical Services  
 ASP – NYSDEC Analytical Services Protocol  
 AWQSGV – NYSDEC Ambient Water Quality Standard Guidance Values  
 BaP – benzo(a)pyrene equivalents  
 bgs – below ground surface  
 BTEX – benzene, toluene, ethylbenzene, xylene  
 CAMP – Community Air Monitoring Program  
 C&D – construction and debris material  
 CEC – Community Environmental Corporation  
 Chemtech – Chemtech Laboratories  
 COC – constituent of concern  
 EDC – Economic Development Corporation  
 EDD – electronic data deliverables  
 EH&S – Environmental Health & Safety  
 EM – electro-magnetic  
 ENSR – ENSR Corporation (now AECOM)  
 GEI – GEI Consultants  
 GPR – ground penetrating radar  
 HASP – Health and Safety Plan  
 H&A – Haley & Aldrich  
 HSA – hollow stem auger  
 IDW – Investigation-derived Waste  
 IRMWP – Interim Remedial Measure Work Plan  
 IRI – Interim Remedial Investigation  
 IRIR – Interim Remedial Investigation Report  
 ISMP – Interim Site Management Plan  
 Langan – Langan Engineering and Environmental Services, P.C.  
 MetLife – Metropolitan Life Insurance Company  
 mg/kg – milligram per kilogram  
 mg/L – milligram per liter  
 mg/m<sup>3</sup> – milligram per cubic meter  
 MGP – Manufactured Gas Plant  
 MPE – Multi-phase Extraction  
 MSL – Mean Sea Level  
 MS/MSD – matrix spike/matrix spike duplicate  
 MTA – Metropolitan Transportation Authority  
 MTBE – meth-tert-butyl-ether  
 NAVD88 – North American Vertical Datum 1988  
 NAD83 – North American Datum 1983  
 NAEVA – NAEVA Geophysics, Incorporated  
 NAPL – Nonaqueous Phase Liquid  
 NCP – National Contingency Plan  
 NY – New York  
 NYCDEP – New York City Department of Environmental Protection  
 NYCRR – New York Code of Rules and Regulations  
 NYSDEC – New York State Department of Environmental Conservation  
 NYSDOH – New York State Department of Health  
 PAH – Polycyclic Aromatic Hydrocarbon

PEC – Paragon Environmental Construction, Incorporated  
PVC – polyvinyl chloride  
PID – photoionization detector  
PPE – personal protection equipment  
QAPP – Quality Assurance Project Plan  
QA/QC – Quality Assurance/Quality Control  
QHHEA – Qualitative Human Health Exposure Assessment  
RETEC – The RETEC Group, Incorporated  
RI – Remedial Investigation  
RIWP – Remedial Investigation Work Plan  
ROW – Right-of-Way  
RSCO – NYSDEC Recommended Soil Cleanup Objective  
SC – Site Characterization  
SCR – Site Characterization Report  
SCS – Site Characterization Study  
SMP – Site Management Plan  
SRI – Supplemental Remedial Investigation  
SRIWP – Supplemental Remedial Investigation Work Plan  
SSBV – Site-Specific Background Value  
SVI – soil vapor intrusion  
SVOC – Semi-Volatile Organic Compound  
TLM – tar-like material  
USEPA – United States Environmental Protection Agency  
USC – Utility Survey Corporation  
USGS – United States Geologic Survey  
UST – Underground Storage Tank  
ug/m<sup>3</sup> – micrograms per cubic meter  
ug/L – microgram per liter  
VCA – Voluntary Cleanup Agreement  
VOC – Volatile Organic Compound

## 1.0 Introduction

As required under the terms of Voluntary Cleanup Agreement Index No. D2-0003-02-08 (VCA) by and between the New York State Department of Environmental Conservation (NYSDEC) and Consolidated Edison Company of New York, Inc. (Con Edison), this report presents the results and findings of the supplemental remedial investigation (SRI) that was performed on Con Edison's behalf by AECOM Environment ([AECOM]. formerly ENSR Corporation [ENSR]), for the East 14th (NYSDEC Site #V00535), East 17th (NYSDEC Site #V00541), and East 19th (NYSDEC Site #V00542) Street Station sites located in the Borough of Manhattan in New York City, New York. In addition, data from the 2006 interim RI (IRI) activities performed on Con Edison's behalf by GEI Consultants, Inc. (GEI) were previously presented in the Interim Remedial Investigation Report dated September 2007 (GEI, 2007a) and are summarized in this report. The 2006 IRI was carried out in accordance with the NYSDEC-approved RI Work Plan (RIWP) entitled *Remedial Investigation Work Plan, Stuyvesant Town Former Manufactured Gas Plant Sites* (GEI, 2006). 2008 RI activities were carried out in accordance with AECOM's Supplemental Remedial Investigation Work Plan (SRIWP), *Stuyvesant Town Former Manufactured Gas Plant Sites* (ENSR 2008). The SRI was also carried out in general accordance with the most recent and applicable guidelines of the NYSDEC, the United States Environmental Protection Agency (USEPA), as well as the National Contingency Plan (NCP).

GEI performed IRI activities on the site in 2006 in accordance with the NYSDEC-approved RI Work Plan (GEI 2006). The 2006 results were presented by GEI in the Interim Remedial Investigation Report, *Stuyvesant Town Former Manufactured Gas Plant (MGP) Sites*, dated September 2007. Based on the August 24, 2007 NYSDEC comments on the Draft Remedial Investigation Report (GEI, 2007a) and subsequent addendum, *Valve Replacement Project Observation Summary Report for the Stuyvesant Town MGP Sites* (GEI, 2007b), additional investigation was required at all three former MGP stations and the Draft RI report was finalized by GEI as the Interim Remedial Investigation Report, *Stuyvesant Town Former MGP Sites* and dated September 2007. Based on the NYSDEC August 24, 2007 comments, AECOM developed a SRI Work Plan (ENSR 2008d) as an extension of the IRI to further investigate the impacts associated with the three former MGP holder stations.

This report presents the results of the remedial investigation activities performed on the East 14th, East 17th, and East 19th Street Station sites, as well as further investigation of the subsurface on the First Avenue Loop Road associated with impacts found during the water valve replacement activities conducted in 2006 and 2007 as part of a capital-improvement plan to the property. The East 14th, East 17th, and East 19th Street Stations were located in what is presently the Stuyvesant Town apartment complex in the Borough of Manhattan in New York City, New York. The areas of concern associated with these station sites include MGP-related soil and groundwater impacts within the property boundary of Stuyvesant Town, including immediately adjacent sidewalks up to the curb of surrounding streets.

This RI Report incorporates the findings of other phases of environmental investigation work performed at the sites. MGP Research Reports were completed by Langan Engineering & Environmental Services, P.C. (Langan) in 2002 and 2003 for the former station sites. An evaluation of indoor air and soil gas sampling was performed in the residential apartment buildings at Stuyvesant Town in 2002 by The RETEC Group, Inc. (RETEC). The Site Characterization Study (SCS) was conducted by Haley & Aldrich, Inc. (H&A) during 2004, the findings of which were reported in the Site Characterization Report (SCR) dated October 2004 and revised in April 2005. GEI completed an IRI in 2007 and reported its findings in the Interim Remedial Investigation Report, *Stuyvesant Town Former MGP Sites*, dated September 2007. In addition, this report includes observations made during a large-scale capital improvement project to replace the water and hydrant valves servicing Stuyvesant Town during 2006 and 2007. During this project, 58 underground water and hydrant valves were replaced across the property. GEI and AECOM both served as third-party oversight on behalf of Con Edison at various parts of the water valve replacement project.

## 1.1 Remedial Investigation Purposes and Objectives

The purpose of this SRI was to gather sufficient information and assess whether remedial actions are necessary at the former MGP station sites and, if such actions are necessary, to support analysis of remedial alternatives and selection of a remedy. The scope of this RI was developed to supplement previous investigation findings including those of the IRI conducted by GEI as well as the SCS conducted by H&A.

The goals of the SRI were to:

- 1) Further delineate the extent of MGP staining and brown product-like globules observed during the valve excavation activities.
- 2) Further delineate the extent of MGP impacts noted in subsurface soils at the former East 17th Street Station and East 14th Street Station.
- 3) Further develop the dataset necessary to allow preparation of an Alternative Analysis Report to evaluate and select possible remedial alternatives for site clean-up.

The purpose and objectives described above for the SRI are consistent with the NYSDEC's comprehensive site characterization and remedial investigation goals as described in the NYSDEC Draft DER-10 Technical Guidelines for Site Investigation and Remediation (December 2002).

## 1.2 Scope of Work

The scope of work for this SRI was defined by the NYSDEC-approved RI Work Plan (GEI, 2006) and the NYSDEC-approved SRI Work Plan (ENSR, 2008d). The SRI included the following tasks:

- Underground utility clearance
- Community air monitoring
- Soil boring advancement and subsurface soil sample collection and analysis
- Groundwater level and nonaqueous phase liquid (NAPL) thickness measurements
- Groundwater sampling and analysis
- Surveying of new sampling locations
- Management of investigation-derived waste (IDW)

All activities were performed in accordance with the methods specified in the Supplemental Remedial Investigation Work Plan (SRIWP) (ENSR, 2008d), including the site-specific Quality Assurance Project Plan (QAPP) included in Appendix A of the 2008 ENSR SRIWP and the site-specific Health and Safety Plan (HASP) included in Appendix B of the 2008 ENSR SRIWP.

### 1.3 Report Organization

The remainder of this RI report is organized into the sections and appendices listed below.

- Section 2 provides a description of the East 14th, East 17th, and East 19th Street former MGP Station sites and surrounding properties, a summary of information regarding site ownership and operational history, and a summary of previous investigations.
- Section 3 provides a description of field investigation activities and sample analyses performed during the RI.
- Section 4 provides a discussion of the site geology and hydrogeology.
- Section 5 provides a discussion of the observations regarding the extent of observed MGP residuals, and a summary of the analytical results for environmental media sampled during the SC and RI.
- Section 6 presents a qualitative evaluation of the risk associated with the MGP constituents for the site.
- Section 7 presents a summary and conclusions of the RI.
- Section 8 presents recommendations for future activities at the site.
- Section 9 presents references cited.

Tables and figures are included in the sections immediately following the text of this report.

Appendices to this report include the following:

- Appendix A – Historic site maps
- Appendix B – Boring and well construction logs
- Appendix C – GEI Valve Replacement Project Summary Report
- Appendix D – Groundwater sampling forms
- Appendix E – GEI Aquifer Conductivity Data
- Appendix F – Investigation-derived waste management
- Appendix G – Summary Tables and Data Usability Reports
- Appendix H – Background statistical analysis



## 2.0 Site Location, Description, and Setting

The former MGP station sites located at East 14th, East 17th, and East 19th Streets, are located within the present-day residential campus of Stuyvesant Town. Stuyvesant Town occupies Block 972 Lot 1 in the Borough of Manhattan within the City, County, and State of New York and is located in the Lower East Side section of Manhattan (Langan, 2003). It is bounded by and extends from East 14th Street north to East 20th Street and from First Avenue east to Avenue C. Figure 2-1 illustrates the site location on a portion of the Brooklyn, New York quadrangle topographic map.

Stuyvesant Town apartment complex extends from First Avenue to Avenue C and from East 14th Street to East 20th Street and includes 35 high-rise buildings, playgrounds, sport courts, and underground parking garages across a 61-acre area. Figure 2-2 shows the current site layout and the former MGP structures. The East 14th Street Station was located on a 2-acre area at the corner of East 14th Street and Avenue C. The station was used for gas storage and gas purification from circa 1857 to sometime between 1903 and 1920. The land was subsequently used for storage by Con Edison. The East 17th Street Station was located on a 1.5-acre area off the current Avenue C Loop Road. The station was used for gas storage from between 1860 and 1867 to between 1920 and 1924. Following decommissioning, the land was used for cinder storage and then bought by the Reconstruction Garage, Inc. in 1943. The East 19th Street Station was located on a 0.3-acre area off the current East 20th Street Loop Road. The station stored gas starting between 1863 and 1868 until between 1920 and 1921 when it was replaced by an auto/truck garage and then sold to Improvement Garage, Inc. in 1943. Stuyvesant Town Corporation acquired the land of all three stations in 1944 for the development of the Stuyvesant Town apartment complex.

The former East 14th Street Works site existed on several city blocks, mostly on the east side of Avenue C, and is designated as Tax Block 988, Lot 1, a portion of Block 990, Lot 1, and a portion of Block 972, Lot 1 on the tax map of the City of New York, New York (Langan, 2003). Only a portion of the former East 14th Street Works is located on the land presently occupied by the Stuyvesant Town apartment complex and is referred to as the East 14th Street Station. The former East 17th Street Station site existed on what was formerly Tax Block 985, but is currently designated as Tax Block 972. In addition, the former East 19th Street Station site existed on what was formerly Tax Block 976, but is currently designated as part of Tax Block 972 (Langan, 2002b).

The Stuyvesant Town residential campus encompasses approximately 61 acres and contains residential high-rise apartment buildings, playgrounds and courts, a fitness center, and private underground parking garages. Four loop roads onto the property are accessible from 20th Street, 14th Street, Avenue C, and First Avenue, and a service road with additional parking is located along the northern, western, and southern boundaries of the complex. Currently, the majority of the property is designated a R7-2: Moderate to High-Density Residential District, according to Zoning Map 12C of the New York City Planning Commission (GEI, 2007a). A bank, laundry service, and a number of retail stores are also located on the perimeter of the property and are designated as commercial segments (C1: Light Commercial). In addition, the management office for both the Peter Cooper Village and Stuyvesant Town apartment complexes is located at 317 Avenue C, and a day care center (Manhattan Kids Club II), is located at 629 East 14th Street, on the south side of the complex (GEI, 2007a). The Stuyvesant Town property was sold to an affiliate of Tishman Speyer Properties, L.P. and Blackrock Realty Advisors, Inc. by Metropolitan Tower Insurance Company, an affiliate of the Metropolitan Life Insurance Company (MetLife), in 2006.

Current surrounding land uses consist of residential, commercial, and institutional. North of the site, on the north side of East 20th Street, is the Peter Cooper Village apartment complex and a restaurant on the northeast corner of the First Avenue and East 20th Street intersection. First Avenue consists of several

northbound traffic lanes with an access road which includes parking and sidewalks along the east side. Commercial establishments such as delis, a grocery store, restaurants, etc., are located along the west side of First Avenue across from the site. In addition, there are a number of retail stores and restaurants on the east side of First Avenue adjacent to the site. John Murphy Park, an off-site playground, is located approximately ¼ mile southeast of the site, and two schools, PS 34 at 730 East 12th Street and Saint Emeric's Church and School at 740 East 13th Street are located approximately ½ mile south of the site (Langan, 2002). In addition, a public esplanade (Stuyvesant Cove Park) to the east of the site is located between the site and the East River, across Avenue C (Langan, 2002a and 2002b).

The section of Avenue C and the elevated FDR Drive between East 20th Street and Avenue C are situated east of the grounds of the former MGP stations. Parking areas are located beneath the FDR and a waterfront park, Stuyvesant Cove Park, is located further east between the parking areas and the East River. The park property is owned by the City of New York and managed by the New York City Economic Development Corporation (EDC). The Community Environmental Corporation (CEC) leases the property from EDC and manages and operates Stuyvesant Cove Park. The park consists of landscaped areas, bike and walking paths, benches and tables. An Environmental Education Building (Solar One) is located in the northern portion of Stuyvesant Cove Park.

A gasoline station is located north of Stuyvesant Cove Park, northeast of the site. Previous releases of petroleum products have been documented from a former service station facility with several underground storage tanks (USTs) at this location. Two multi-phase extraction (MPE) systems were installed within Stuyvesant Cove Park between East 18th Street and East 23rd Street to address this contamination and have been decommissioned.

Con Edison facilities are located east of Stuyvesant Town between East 18th and East 14th Streets and Avenue C and the FDR Drive. These facilities include the East River Generating Station, various substations, an administration building, ball fields, and parking areas.

## **2.1 Site History**

### **2.1.1 Pre-Manufactured Gas Plant**

The 18-block area developed as Stuyvesant Town in the 1940s was formerly part of the East River and associated marsh lands well into the 1800s, as can be seen on the historic survey maps and plates available in Appendix A. There were a number of small creeks and streams feeding the East River that ran through the area during the colonial period, during which the area appears to be mainly farms and orchards (GEI, 2007a). With the increasing population and growing demands of New York City, the area gave way to more industrial planning and development in the early 1800s and as a result, the area east of First Avenue between East 13th and East 26th Streets required filling and reworking to extend the shoreline to its present location and elevate the grade of the land. There were some tenements on the reclaimed land before the development of the former MGP station sites as gas storage and/or gas plant facilities (GEI, 2007a). As stated above, the historic maps are included as Appendix A to this report.

### **2.1.2 Manufactured Gas Plant**

Detailed historic information was previously compiled and presented in three reports entitled *MGP Research Report, East 14th Street Works* prepared by Langan in January 2003, *MGP Research Report, Volume I of III, East 17th Street Station* prepared by Langan in September 2002, and *MGP Research Report, Volume I of III, East 19th Street Station* prepared by Langan in August 2002. The historical information provided herein was derived from the Interim Remedial Investigation Report (GEI, 2007a) which referenced those reports as well as the Site Characterization Report prepared by Haley & Aldrich in 2005. Figure 2-2 illustrates the former MGP structures associated with the East 14th, East 17th, and East 19th Street Stations.

The East 14th, East 17th, and East 19th Street Stations, located within present-day Stuyvesant Town, were operable between the mid-1800s and early 1900s and were owned and operated by Con Edison's predecessor companies including the Consolidated Gas Company of New York, the New York Steam Company, the Standard Gas Company, and the Manhattan Gas Light Company. A summary of each station's site history is provided below.

The East 14th Street Station was part of the larger facility called the East 14th Street Works, which was operated by Consolidated Gas Company. The majority of that larger facility was located on the eastern side of Avenue C between East 14th and East 16th Streets. The East 14th Street Station site occupied the majority of the block between Avenue B and Avenue C and East 14th and East 15th Streets on the western side of Avenue C and operated as a gas storage and purification facility from circa 1857 to some time in between 1903 and 1920. Historic Sanborn® maps show six gas holders (approximately 350,000 cubic feet capacity each), one meter house, and one purifying house on the station site prior to the 1920s. The 1920 Sanborn® map and aerial photographs taken in the 1920s, however, confirm the absence of the holders prior to demolition of the purifying house. Demolition occurred some time between 1924 and 1934.

Operations as a gas storage facility began at the East 17th Street Station between 1860 and 1867. Two gas holders, with a capacity of approximately 270,000 cubic feet each, were located on the western portion of the site while the eastern portion of the site was used for pipe and material storage, as well as office space. Situated approximately mid-way between Avenues B and C, stretching from East 17th Street north to East 18th Street, the station was in operation until some time between 1921 and 1924 when the station was decommissioned with removal of the holders. Based on historic Sanborn® maps, the area was then used as a cinder yard until the property was sold to Reconstruction Garage, Inc., in 1943. The Stuyvesant Town Corporation subsequently acquired the property in 1944.

The East 19th Street Station reportedly began operations between 1863 and 1868 as a holder site. This station occupied the least amount of property of the three station sites on the present-day Stuyvesant Town property, and was located on the south side of East 19th Street between Avenues A and B. Based on the historic maps of the area, a single gas holder (approximately 500,000 cubic feet capacity) and a small unidentified structure occupied the site. The station was replaced by an auto/truck garage between 1920 and 1921 and was sold to Improvement Garage, Inc., in 1943. The Stuyvesant Town Corporation subsequently acquired the property in 1944 for the construction of the Stuyvesant Town apartment complex.

### 2.1.3 Post-Manufactured Gas Plant

A number of residential, commercial, and industrial properties occupied the area that is now the Stuyvesant Town residential campus. Through private sale and eminent domain, along with the New York City Housing Authority, MetLife acquired the properties within the 18-block footprint of Stuyvesant Town during the early to mid-1940s to begin construction of the post-war housing. Approximately + 3,100 families and + 500 commercial and industrial facilities were razed as part of the project including the existing apartments and tenements within the project boundaries, as well as machine shops, ice plants, auto garages, iron works and foundry yards, brick works, coal yards, lumber and construction storage yards, livery stables, house-ware storage facilities, churches, and private and public schools. Any remaining aboveground structures initially related to the East 14th, East 17th, and East 19th Street holder stations would have been razed along with surrounding structures prior to the construction of the Stuyvesant Town apartment complex. Historical maps showing the area prior to construction of the Stuyvesant Town apartment complex are available in Appendix A.

Approximately four acres in total were at one point occupied by the three holder stations, though they were located on non-contiguous parcels as illustrated in Figure 2-2. The following information is excerpted from the IRI Report prepared by GEI, dated September 2007:

- The East 14th Street Station was located near the corner of East 14th Street and Avenue C. Sanborn® maps show six gas holders, one meter house, and one purifying house on the + 2-acre station site.

Currently, portions of residential buildings at 245 Avenue C and 625-645 East 14th Street, an underground parking garage, and a child day care center (629 East 14th Street) occupy the area of the former East 14th Street Station. In addition, a portion of the adjacent service road and pedestrian walkways along Avenue C and East 14th Street appear to have also been located within the former station footprint.

- The East 17th Street Station was located off the present-day Stuyvesant Town Avenue C Loop Road. Sanborn® maps show two gas holders, material-storage areas, and an area subsequently labeled “cinder yard” on the + 1.5-acre station site. Portions of residential buildings at 285-287 Avenue C and 16 Stuyvesant Oval, and an underground parking garage currently occupy the area of the former East 17th Street Station. Additionally, the segment of the Avenue C Loop Road between the noted residential buildings, as well as adjacent walkways and a small portion of a basketball court, lie within the former station footprint.
- The East 19th Street Station was located off the present-day Stuyvesant Town East 20th Street Loop Road. Sanborn® maps show one gas holder and a small unidentified structure located on the + 0.3-acre station site. Portions of a residential building at 522-524 East 20th Street and an underground parking garage currently occupy this area.

## 2.2 Physical and Environmental Setting

### 2.2.1 Site Design and Infrastructure

As discussed above and by GEI in the IRI (GEI, 2007a), the surface topography of Stuyvesant Town is made-land and ranges from approximately 4 to 22 feet above Mean Sea Level (MSL). The areas not covered by buildings were developed to include four loop roads with additional parking, corresponding to East 20th Street, East 14th Street, Avenue C, and First Avenue, paved walkways, playgrounds, multi-use game courts, and green space. There are also six parking garages on the property that are situated only slightly below the adjacent street grade and are single-level structures. Above the garage structures are playgrounds, landscaped areas, and paved walkways. They also provide building access to upper floors. The overall design, as can be seen on Figure 2-2, exhibits a general radial symmetry with a large fountain at the center of the property and plenty of landscaped areas throughout the property. This allows any precipitation reaching the ground to infiltrate those landscaped areas as well as drain towards the storm water basins located along the perimeter roads and loop roads.

The utility infrastructure underlying Stuyvesant Town is complex and not completely known. H&A conducted a review of available utility maps during their work on the SC in 2004 and determined that a dense network of numerous private and public utility lines of varying size cross beneath the site. There are also a large number of inactive and abandoned lines traversing the site subsurface that once served the pre-Stuyvesant Town community, and these utilities are largely unknown.

In addition, underground utilities and transportation corridors in the immediate vicinity of Stuyvesant Town must be taken into consideration when evaluating the environmental conditions below the former MGP stations. There is a Pollution Control Intercepting Sewer and several main feeders into the East River Generating Station, as well as the 14th Street – Canarsie Subway line beneath the city streets on the perimeter of the property. H&A cited the Metropolitan Transportation Authority (MTA) microfilm drawings 388 and 338, dated March 1916, and reported that the rail bases for the east and west bounds of the East 14th Street – Canarsie (“L”) subway Line that runs beneath 14th Street from 8th Avenue in Manhattan beneath the East River to Brooklyn, are located approximately 47 feet below East 14th Street at the intersection with Avenue C and the approximate tunnel cross section near the property boundary was 15 feet in diameter.

Also as part of the SC activities, H&A reviewed drawings, dated July 1967, from the New York City Department of Environmental Protection that showed the North Branch Intercepting Sewer. This intercepting

sewer was installed as a pollution-control measure and is approximately + 108 inches in diameter and located roughly 40 feet below grade on the east side of First Avenue between East 21st and East 23rd Streets. It then continues along the south side of East 20th Street and proceeds south along the west side of Avenue C where intercepted waste water from lateral-combined lines feeding into the East River is pumped to the Newtown Creek Water Pollution Control Plant via the East 13th Street Pump Station.

The abovementioned subsurface utilities and transportation corridors significantly impact the homogeneity of the subsurface at the former MGP station sites and create noteworthy heterogeneities within the subsurface that can influence groundwater and potential contaminant flow. In addition, these heterogeneities can provide insight into potential anomalies regarding subsurface contaminant chemistry.

## **2.2.2 Environmental Setting**

The regional geology and hydrogeology are summarized below and more expressly detailed in Section 4 of this report.

### **2.2.2.1 Regional Geology**

The geology beneath Stuyvesant Town is generally described by stratigraphic unit and included the following materials, which were encountered in order of increasing depth:

- Fill
- Organic Deposits/Peat
- Glacial Lacustrine/Glacial Outwash Deposits
- Bedrock

The following discussion is based on published information on the known and anticipated subsurface conditions in the vicinity of Stuyvesant Town and much of the information was detailed by GEI in the 2007 IRI Report and is detailed further in Section 4 of this report.

In the mid to late 1800s, the area of the Lower East Side of Manhattan was filled and leveled to extend the shoreline of the East River eastward and provide more land for construction for the inhabitants of New York City. As such, the materials constituting the fill layer include an assortment of soils and materials used in reclaiming the land.

Below the fill layer, Holocene age organic deposits consisting mainly of black to gray organic clays and silts with marine shell fragments and peat deposits are present. These peat deposits are associated with the marshland that was eventually filled over.

The glacial deposits in the area of Stuyvesant Town include fine to coarse grained silty sands (till) and varved silt and clay materials (rhythmites) (Baskerville, 1994). According to published information, as well as known information based on field activities, these deposits range in thickness from approximately 10 feet to 140 feet in Manhattan. Rhythmite deposits accumulated within an ancestral glacial lake associated with the damming of the Hudson River by the Harbor Till Terminal Moraine, which was located to the south at the Narrows section of New York Harbor (Meguerian 2003, Baskerville 1994).

The bedrock beneath Stuyvesant Town varies below the three former MGP station sites. According to published information, the bedrock beneath the East 14th and East 17th Street Stations is classified as the Ravenswood Granodiorite (Baskerville, 1994). The Ravenswood Granodiorite is igneous and described as a medium to dark gray granodiorite with a granitic or gneissic texture formed during the Middle Ordovician to

Middle Cambrian periods or approximately 460 to 500 million years ago (Baskerville, 1994). The surface dips sharply to the northeast and is located approximately 40 to 80 feet (ft) below ground surface (bgs) in the area near the former East 14th Street Station and more than 80 ft below the footprint of the East 17th Street Station (Baskerville, 1994).

Also underlying the Stuyvesant Town apartment complex is the Inwood Marble, which underlies the area of the former East 19th Street MGP Station. The Inwood Marble is a metamorphic rock generally described as white to blue-gray, fine to coarse grained calcitic to dolomitic marble, middle Ordovician to Late Cambrian in age (Baskerville, 1994). It is present approximately 60 to 80 ft bgs at the East 19th Street Station site and is part of the northeast-southwest trending Cameron thrust fault which reportedly bisects the Stuyvesant Town property. According to the 2002 MGP Research Reports published by Langan, bedrock in the vicinity of the fault dips roughly 45 degrees to the northwest.

### **2.2.2.2 Regional Hydrology/Hydrogeology**

This section summarizes the regional Upper Glacial Aquifer present beneath Stuyvesant Town, as well as the nearest surface water body, the East River. Additional site-specific information is discussed in further detail in Section 4 of this report.

The Upper Glacial Aquifer is comprised of Pleistocene and Holocene aged deposits that cover the lower portion of Manhattan and can yield large quantities of water (Baskerville, 1994). The aquifer is generally unconfined; however less permeable silts and clays may confine it locally. According to research by GEI, the Upper Glacial Aquifer is characterized by typical horizontal conductivities of approximately 270 ft per day ( $9.5 \times 10^{-2}$  centimeters per second [cm/s]) within the glacial outwash sand and approximately 135 ft per day ( $4.4 \times 10^{-2}$  cm/s) within the poorly sorted till deposits located nearby on Long Island (GEI, 2007).

Baskerville (1994) indicated that streams and tidal marshes buried during the mid-1800s can and do influence water flow on Manhattan. These filled tidal wetlands beneath Stuyvesant Town can also be affected by tidal fluctuations within the East River and the water within the Upper Glacial Aquifer is somewhat impacted with salt water from that river due to those tidal fluctuations. Historic maps and stream patterns indicate that the general groundwater flow beneath Stuyvesant Town is eastward towards the East River. As previously reported in H&A's SC Report (2005) and in GEI's IRI Report (2007a), the depth to groundwater at Stuyvesant Town is approximately 10 ft bgs and the water is classified by the NYSDEC as GA (aesthetic – fresh waters), indicating that the water is potable water, suitable for drinking. The Stuyvesant Town apartment complex, along with surrounding areas of Lower Manhattan, however, is served by the New York City Water Supply System which obtains water from reservoirs within the Catskill, Delaware, and Croton watersheds located 50 to 125 miles north of New York City (GEI 2007a).

The nearest surface water body to Stuyvesant Town is the tidally influenced, saline East River. It is located east of the property approximately 200 to 1,500 ft at the eastern boundary of the property to 1,750 to 2,250 ft from the western boundary of the property, as can be seen in Figure 2-1. The East River is classified by the NYSDEC as a Class I saline surface water which is used for ship traffic and non-contact recreational purposes. Class I saline surface waters are also designated for fishing, however, numerous New York State Department of Health (NYSDOH) health advisories exist for consumption of fish caught in the East River. The western shoreline of the East River in the vicinity of the site is listed in the National Wetlands Inventory (Langan, 2002a and 2002b).

## **2.3 Previous Investigations**

Previous investigations performed at the site prior to the RI are summarized in the following sections. Previous investigation locations are shown on Figure 2-3. The areas of concern of this RI include those where the former East 14th, 17th, and 19th Street MGP Stations were located, as well as an area on the First Avenue

Loop. Boring logs and well construction diagrams for both the 2006 and 2008 RI, along with those from the 2004 SC, are available in Appendix B to this report.

### **2.3.1 MGP Research Reports – Langan (2002, 2003)**

#### **2.3.1.1 East 14th Street Works**

Historical research regarding the former East 14th Street MGP Works was conducted by Langan in 2003 on behalf of Con Edison. The findings were reported in the MGP Research Report, East 14th Street Works, dated January 19, 2003. The former East 14th Street Works was defined as two areas: the eastern portion, which is comprised of the majority of the works site and encompassed 9.2 acres, including area between East 14th Street to East 16th Street between Avenue C and the FDR Drive; and the western portion (East 14th Street Station), which included 1.8 acres in the southeastern corner of the Stuyvesant Town apartment complex. The objective of the research report was to review historical and environmental records and summarize the former MGP operations of Con Edison and its predecessor companies and was conducted as a part of Con Edison's efforts to prioritize its sites with MGP operations for future investigations.

A summary of Langan's findings regarding the western portion of the former East 14th Street Works (ie., the East 14th Street Station) is provided below:

#### **2.3.1.2 East 14th Street Station**

The area formerly occupied by the East 14th Street Station is located in the southeastern corner of the Stuyvesant Town apartment complex and is privately owned. Prior to being sold in 1944, Con Edison used the area as a warehouse and storage yard. The property has since been redeveloped with multi-story residential buildings with basements, underground parking, a day care facility, playgrounds, and landscaped areas. There was no regulatory information encountered regarding this portion of the former East 14th Street Works.

Langan reported that there was a limited potential of exposure to MGP-related impacts at this site, including potential exposure to soil vapor for building occupants and for exposure for subsurface utility activity. In addition, Langan stated that the East River and its shore were potential environmental receptors of offsite impacts from the former East 14th Street Works.

#### **2.3.1.3 East 17th Street Station**

Under contract to and on behalf of Con Edison, Langan conducted research regarding the former MGP operations at the East 17th Street Station site, located within the Stuyvesant Town apartment complex property. Langan documented their findings in the report entitled MGP Research Report, East 17th Street Station, dated September 9, 2002.

Results of the 2002 Langan research report are summarized below:

- Site reconnaissance revealed that there are no former holder structures in public areas, however the location and existence of potential buried structures and foundations is unknown. Also, it is unknown how decommissioned wastes were handled during the construction of the Stuyvesant Town residential complex.
- Potential pathways by which residents and utility workers could be exposed to impacts (if further investigation provides evidence of those impacts) include soil vapor, groundwater, soils, and utility conduits. In addition, the East River and its shore were identified as potential environmental receptors of offsite impacts, should they be present.
- There was no regulatory information encountered regarding the East 17th Street Station.

Prior to any further excavation at the site, Langan proposed visual inspection of basement foundations and utility manholes as well as characterization of subsurface materials, based on their reported findings.

#### **2.3.1.4 East 19th Street Station**

Under contract to and on behalf of Con Edison, Langan conducted research regarding the former MGP operations at the East 19th Street Station site, located within the Stuyvesant Town apartment complex property. Langan documented their findings in the report entitled MGP Research Report, East 19th Street Station, dated August 30, 2002.

Results of the 2002 Langan research report are summarized below:

- The East 19th Street Station encompassed approximately 0.3 acres of land that have since been redeveloped as a single 13-story residential building with a basement, a portion of an underground parking garage, and landscaped areas.
- Site reconnaissance revealed that there are no former holder structures in public areas, however the location and existence of potential buried structures and foundations is unknown. Also, it is unknown how decommissioned wastes were handled during the construction of the Stuyvesant Town residential complex.
- If impacts are present, residents and utility workers could be exposed through soil vapor, groundwater, and utility conduits, which Langan identified as potential pathways. Potential environmental receptors identified by Langan include the East River and its shore, which are located east of the former MGP station.
- There was no regulatory information encountered regarding the East 19th Street Station.

Prior to any further excavation at the site, Langan proposed visual inspection of basement foundations and utility manholes as well as characterization of subsurface materials, based on their reported findings. In addition, a limited characterization of subsurface materials was proposed, prior to any future intrusive work at the site, to address potential health, safety, and regulatory compliance issues that may arise.

#### **2.3.2 Air and Soil Gas Sampling – RETEC (2003)**

Under contract to and on behalf of Con Edison, RETEC conducted an evaluation of indoor air and soil vapor at the Stuyvesant Town apartment complex in January and August of 2003. The primary goal of this sampling effort was to determine if the volatile organic compounds (VOCs) associated with former MGP activities at Stuyvesant Town were adversely affecting the air quality of the apartment buildings on the property. In January 2003, RETEC collected indoor and ambient air samples from buildings and exterior areas within the footprints of the former MGP stations. The August 2003 sampling event focused on collecting soil gas samples from the East 14th, East 17th, and East 19th Street Station sites and the findings were documented in their report, E.14th Works and E.17th and E.19th Street Stations, Report of Evaluation of Indoor Air and Soil Gas Sampling. The report was dated October 7, 2003.

The soil gas, indoor air, and ambient air sampling locations are shown on Figure 2-3 of this report and the analytical findings are discussed in Section 5. Information from this report is also incorporated into the figures, tables, and discussion of this RI report. A summary of RETEC's findings is provided below:

- At the East 14th Street Station site, both potential MGP-related and non-MGP-related compounds were detected in the soil gas samples collected. The elevated detection of methyl-tert-butyl-ether (MTBE, a common gasoline additive) suggests the concentrations are not MGP-related. Concentrations of



naphthalene and/or xylenes above the typical background indoor air values were found in two of the seven indoor air samples from this station as well.

- The indoor air samples from within the former East 17th Street Station footprint did not contain any concentrations of MGP-related constituents above background levels, however the soil gas sample collected contained low levels of both potentially MGP-related and non-MGP-related compounds.
- The majority of detected concentrations of potentially MGP-related compounds found in the samples from within the former East 19th Street Station footprint were within the range of typical background levels for indoor air. There was, however, naphthalene detected above the range of background levels, though the elevated concentrations were attributable to naphthalene-containing mothballs used nearby. The VOCs detected in the soil gas samples at the former East 19th Street Station were attributed to non-MGP-related compounds due to the detection of MTBE.

The 2003 RETEC report concluded that the air quality at Stuyvesant Town is not impacted by MGP-related compounds, though they did recommend reviewing the air sampling results as needed based on future intrusive site characterization findings. The sources of VOC concentrations found in the indoor air samples were attributed to non-MGP-related sources including mothballs, cleaning products, paint, etc. In addition, the VOC concentrations found in the soil gas and ambient air samples were attributed to non-MGP-related sources, due to the presence of compounds typically found in vehicle emissions.

### 2.3.3 Site Characterization – Haley & Aldrich (2004)

Haley & Aldrich (H&A) conducted an environmental site investigation for the former MGP stations within the Stuyvesant Town apartment complex on behalf of Con Edison in 2004. The work was completed in accordance with the VCA between Con Edison and the NYSDEC and the 2003 NYSDEC-approved H&A SC Work Plan. H&A documented their methods and findings of their work in the report dated October 2004 and subsequently revised April 2005.

The purpose of the SC was to investigate impacts of the former MGP stations at Stuyvesant Town through test pit excavations, soil borings, soil sampling, monitoring well installation, and groundwater sampling. As previously stated, their findings were documented in the SC Report (2005). The report also included evaluation of groundwater and soil in areas not impacted by MGP operations to establish background levels of constituents of concern (COCs) in non-MGP areas of the site. Investigation locations are shown on Figure 2-3 and their findings are addressed in later sections of this report.

The following summarizes the results of the SC Report and is taken directly from that document:

- A total of six background borings were conducted during the investigation. The surface and subsurface soils were found to contain concentrations of semivolatile organic compounds (SVOCs) and arsenic above NYSDEC Recommended Soil Cleanup Objectives (RSCO). The surface and subsurface soil samples also contained lead and the subsurface soils contained cyanide; there is no specific RSCO criterion for lead and cyanide.
- Two monitoring well couplets were installed to evaluate background groundwater quality. Analytical results indicate that all four monitoring wells exceeded NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGV) primarily for metals and inorganic parameters, many of which are not typically associated with MGP-related materials. One monitoring well exceeded the VOC criteria. Cyanide, which is related to MGP operations, was detected in a background well.
- At the former East 14th Street Station, subsurface soil and groundwater exceeded their applicable screening criteria. Seventeen soil borings were conducted to investigate the former gas holders, meter house and purifying house. Although a total of 17 soil borings were conducted at this station, only one

surface soil sample was collected because most of this area is covered with concrete and cobblestones. The surface soil sample was below RSCO criteria for VOCs and SVOCs and below Site-Specific Background Values (SSBV) and RSCO for arsenic, lead and cyanide. Subsurface soil testing results indicate concentrations of VOCs and SVOCs above RSCO and arsenic, lead and cyanide concentrations above RSCO and/or SSBV. Two well couplets were installed and groundwater testing results show concentrations of VOCs, SVOCs and cyanide above the AWQSGV.

- At the former East 17th Street Station, surface soil, subsurface soil and groundwater exceeded their applicable screening criteria. A total of 14 surface soil samples were collected from this area and all 14 samples exceeded either RSCO for SVOCs or SSBV for arsenic and lead. Sixteen subsurface soil borings were conducted to investigate the former gas holders and cinder yard. The soil borings contained concentrations of VOCs and SVOCs above RSCO and arsenic and lead above RSCO and/or SSBV. Groundwater contained concentrations of VOCs, SVOCs, lead and cyanide above AWQSGV.
- At the former East 19th Street Station, surface soil, subsurface soil and groundwater exceeded applicable screening criteria. In general, this station has fewer soil and groundwater exceedances than the other two MGP stations. One surface soil sample was collected from the area. The surface soil sample exceeded RSCO for SVOCs. Arsenic exceeded RSCO and/or SSBV in the surface soil sample. Three subsurface soil borings were conducted to investigate the former gas holder and adjacent building. The soil samples collected from the three borings exceeded RSCO for SVOCs. Arsenic exceeded RSCO and SSBV in one soil sample. Groundwater testing results from the monitoring well couplet contained concentrations of SVOCs and lead slightly exceeding AWQSGV.

In addition, the SC Report reviewed the information from the RETEC 2003 report and stated:

- Indoor air and soil gas sampling and evaluation were conducted in January 2003 and August 2003 by RETEC. The results of the indoor air and soil gas sampling were presented separately in a report entitled *E. 14th Works and E. 17th and E. 19th Street Stations, Report of Evaluation of Indoor Air and Soil Gas Sampling*, dated October 7, 2003. The report concluded that the sources of the VOC detected in the indoor air samples collected in the Stuyvesant Town apartment buildings appear to be moth balls, cigarette smoke, floor waxes, paints, or cleaning products used in the building, with a contribution from vehicle emissions (as evidenced by VOC detections in outdoor air). However, based on the results of the SC, MGP-related compounds could be contributing to the VOCs in the soil gas. The concentrations of these compounds were at low levels – at least two orders of magnitude below the Worker Guidance Values and similar to typical background concentrations.
- A qualitative human health exposure assessment (QHHEA) identified potentially completed exposure pathways at the former East 14th Street, East 17th Street, and East 19th Street MGP Stations for surface soil, subsurface soil, groundwater and outdoor air due to the presence of VOCs, SVOCs, lead, arsenic and/or cyanide in these exposure media. Some or all of these exposure pathways may be rendered incomplete upon further assessment or action. Since potentially complete exposure pathways have been identified, further evaluation of contaminant fate and transport is needed.

As a result of their findings, H&A stated that additional investigation and sampling would be required to delineate the extent of impacts at both the former East 14th and East 17th Station sites, as well as to confirm the absence of MGP residuals at the former East 19th Street Station site.

#### **2.3.4 Interim Remedial Investigation – GEI (2007)**

GEI undertook remedial investigation activities at all three former MGP stations at the present-day Stuyvesant Town apartment complex in 2006. Sampling included indoor air, soil gas, groundwater, and soil and took place in accordance with Con Edison's VCA with the NYSDEC, the February 2006 RI Work Plan, and the March 6, 2006 addendum. Data generated during the IRI conducted by GEI will be discussed in detail, along

with the data generated during the 2008 SRI conducted by AECOM on behalf of Con Edison. Therefore, the IRI sample locations are illustrated on figure 3-1 and discussed in Section 3.

### 2.3.5 Valve Replacement Project – GEI (2007)

Unrelated to the RI activities, valves on water mains and hydrants servicing the Stuyvesant Town apartment complex were replaced as part of a capital-improvement plan during 2006 and 2007. A report entitled *Valve Replacement Project – Observation Summary Report* was prepared by GEI and included as an appendix to the 2007 Interim Remedial Investigation Report. Due to the presence of the three former MGP stations located within the Stuyvesant Town complex, GEI and RETEC provided third-party oversight of the water valve replacement activities on behalf of Con Edison. The previously mentioned report summarizes the quality of the soil and groundwater encountered in the excavations associated with valves and also provides a summary of the material disposed during excavation activities. A copy of the report is provided as Appendix C to this report and the conclusions are summarized below:

- MGP-related impacts were observed in soil and/or groundwater outside of the former MGP station sites and Site Characterization and Remedial Investigation areas, including in the excavations along the Avenue C and East 20th Street Loop Roads. These areas are beyond the former station and investigation areas for the former East 17th and East 19th Street Stations.
- A single excavation (number 31) along the First Avenue Loop Road showed MGP-related impacts at approximately 12 ft bgs.
- The observations made during excavations at the former East 14th Street Station site support the findings of previous reports and indicate that MGP-related subsurface impacts do not extend west of the former station.

GEI concluded that the presence of MGP-related impacts at the Avenue C and East 20th Street Loop Roads may require additional investigation, however no further investigation would be necessary at that time at the First Avenue and East 14th Street Loop Road. Comments from the NYSDEC dated August 24, 2007 indicated the need for further investigation at the First Avenue Loop Road. Observations indicate that MGP-related impacts within the variable fill beneath Stuyvesant Town were not generally seen above 5 ft bgs and would only be exposed during major construction events. These events would be managed by the appropriate soil and groundwater management plans for the site, along with the site-specific worker and community health and safety plans.

### 3.0 Supplemental Remedial Investigation Field Activities

This section provides a description of the methodologies used during the field investigation of the former East 14th, East 17th, and East 19th Street MGP Stations sites. The first round of RI field tasks was completed by GEI between March and June 2006. Additional aquifer conductivity testing was completed by GEI in October 2006. GEI field activities were conducted in accordance with their NYSDEC-approved RIWP (GEI, 2006). Following comments from the NYSDEC dated August 24, 2007, the second round of RI field activities was completed by AECOM between March and September 2008. AECOM field activities were conducted in accordance with the methods and procedures specified in the NYSDEC-approved SRIWP (ENSR, 2008d) for the site. Representatives of the NYSDEC, Division of Environmental Remediation of Albany, New York, were on site at various points throughout the project to observe boring installation and soil sampling.

The location and number of samples collected, along with corresponding analytical parameters, are presented in the following subsections and are available in Table 3-1. Descriptions of all field activities are included by field task and/or environmental media and sample locations are illustrated on Figure 3-1. Specific tasks performed during the RI include the following:

- Underground utility clearance
- Community air monitoring
- Surface soil sampling and analysis
- Upper fill sampling and analysis
- Lower fill/native soil sampling and analysis
- Monitoring well installation and development
- Groundwater elevation and NAPL thickness measurements
- Groundwater sampling and analysis
- Aquifer conductivity testing
- Indoor air survey
- Soil gas sampling
- Management of Investigation-Derived Waste
- Survey of remedial investigation sampling locations and basemap development
- Quality Assurance/Quality Control

#### 3.1 Underground Utility Clearance

As part of GEI's RI program at the sites, GEI contracted with Utility Survey Corporation (USC), a geophysical survey and private utility clearance survey company, to complete a limited geophysical survey within the

footprint of the former East 19th Street Station, not presently covered by buildings or other structures. This survey was completed on March 5, 2006 and was done instead of supplemental test pitting within close proximity of existing building foundations.

In addition to the survey completed on March 5, 2006, USC was contracted by GEI to survey the area between the East 20th Street Loop Road and the 522-524 East 20th Street building. Using ground penetrating radar (GPR), USC was able to indicate and/or confirm the presence of a number of utilities and/or subsurface debris beneath the surface. Boring locations were then advanced or moved accordingly to avoid debris and/or utilities.

Underground utility clearance for both phases of intrusive RI field activities was performed in accordance with the Con Edison Utility Clearance Process for Intrusive Activities EH&S Remediation Program, Revision 2, dated September 24, 2004.

Under contract to GEI, Aquifer Drilling and Testing, Inc. (ADT) notified the New York City One Call Center to coordinate utility mark outs of underground utilities including electric, gas, and communication lines, on public Right-of-Ways (ROWs) adjacent to the Stuyvesant Town property, prior to the initiation of intrusive fieldwork during the 2006 field activities. In addition, sewer and water utility line maps were obtained from the NYCDEP for the public ROWs adjacent to Stuyvesant Town and a utility map of the property previously compiled by H&A were referenced prior to beginning intrusive fieldwork.

ADT performed intrusive utility clearance at each proposed boring location, on behalf of GEI, during the 2006 field activities. This pre-clearance included saw cutting concrete surfaces, as needed, and employed a combination of hand tools and vacuum extraction for clearing the locations to a minimum depth of 5 ft bgs. In the event an obstruction was encountered, the boring location was moved and a new location was cleared prior to commencing with the drilling.

Prior to the initiation of intrusive fieldwork during the 2008 SRI performed by AECOM, the drilling subcontractor, Paragon Environmental Construction, Inc. (PEC), contacted Dig Safely New York to arrange for location and marking of all underground utilities in the vicinity of proposed soil borings, as required by New York Code of Rules and Regulations (NYCRR) Part 753. Where possible, AECOM worked directly with the representatives of each utility company to ensure that all underground lines were properly identified and marked-out, on the perimeter sidewalks of the Stuyvesant Town property. In addition, a utility map of the property previously compiled by H&A, was referenced prior to beginning intrusive fieldwork.

For the 2008 SRI, utility clearance was performed by NAEVA Geophysics, Inc. (NAEVA) and Advanced Geophysical Services (AGS) under contract to AECOM. These companies used GPR as well as electro-magnetic (EM) survey methods to scan each proposed investigation location. Con Edison provided utility plates of gas and steam mains, high tension lines, low tension lines, and composite feeders. The sewer as-builts were prepared and provided by the City of New York Department of Public Works, Division of Sewage Disposal, and Bureau of Sewage Disposal Design.

Prior to advancing soil borings using a drill rig or geoprobe, each boring location was hand cleared to a minimum depth of 5 ft bgs with 2 foot by 2 foot dimensions. These excavations were performed in accordance with applicable guidelines and meant to locate any utilities that may have been incorrectly marked, are privately owned, have been abandoned, were not known to exist, or were not detectable by surface investigation methods. Under contract to AECOM, hand clearing was performed by PEC using shovels, posthole diggers, and other non-mechanical means.

As locations were pre-cleared for drilling activities, the material was logged for lithology, visually inspected for MGP-related impacts, and field screened for VOCs with a photoionization detector (PID), during both the 2006 and 2008 phases. In some cases, soil grab samples were collected to further characterize surficial and/or shallow subsurface soil conditions (Table 3-1).

### 3.2 Community Air Monitoring

Community air monitoring was performed and documented during both the 2006 and 2008 field programs to provide real-time measurements of total VOCs and particulate (airborne dust) concentrations upwind and downwind of each designated work area during intrusive investigation activities. Site personnel monitored any odors produced during these activities. The monitoring was designed to provide protection to the public downwind of the work area from any potential releases of airborne contaminants due to investigation activities and to document air quality during intrusive activities.

Instrumentation used during the Community Air Monitoring Program (CAMP) was located upwind and downwind of the work area on stands located in the breathing zone. The instruments were calibrated daily and recorded on separate field forms. The instrumentation used during the 2008 investigation activities included the following: a photoionization detector (PID) 10.6 eV to measure volatiles in parts per million (ppm) and a Dustrak meter to detect the particulate concentrations in milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ). A Dräger pump and benzene colorimetric tubes were used to detect the presence of benzene. Equipment used by GEI during the 2006 field activities included a PID, used to measure and record VOC concentrations, and a MIE pDR-1000AN connected to a SKC single-port low-flow module, used to measure particulate dust. Response levels were programmed into the meters at the beginning of the field programs. Exceedance of these response levels would trigger an alarm to alert site workers that targeted compounds had exceeded the response levels.

During the 2008 field activities, the instruments were programmed to log air quality data once per minute during intrusive work activities. Personnel recorded readings and any observations from these instruments every 15 minutes on a separate CAMP field form. If elevated readings were observed, they were noted and the PID used to screen soil samples was placed next to the CAMP PID for direct comparison of readings. If both PIDs indicated sustained elevated readings for 15 minutes, a Dräger pump with a colorimetric tube was used to test for the presence of benzene. Data from the PID and Dustrak monitors were downloaded to a field laptop computer on a daily basis. The recorded logs were reviewed for any exceedances and downloaded to a daily file with the work area location as the file name.

During the 2006 SRI, there were a few instances where CAMP action levels (PID readings greater than 1 ppm) were reached or exceeded at downwind locations during subsurface investigation activities. According to GEI, exceedances were generally due to humidity and ambient background conditions. None of the colorimetric benzene tubes indicated the presence of benzene. Exceedances recorded during the 2006 field activities were outlined by GEI in Section 3.11 of the IRIR (GEI, 2007a). During the 2008 RI activities, there were also a few instantaneous exceedances of CAMP action levels; however these exceedances were not sustained and were attributed to humidity and/or the presence of dust near roadways and/or landscaping equipment and were not due to invasive RI field activities. Based on the air quality monitoring data, the intrusive activities performed during both phases of the RI did not negatively impact the air quality at the site.

### 3.3 Surface Soil Sampling and Analysis

During the IRI in 2006, eight surface soil samples were collected to evaluate the extent of surface soil impacts noted during previous investigations at the Stuyvesant Town former MGP sites. No surface soil samples were proposed or taken as a part of the SRI work completed by AECOM in 2008. The location of the surface soil samples are shown on Figure 3-1. Table 3-1 summarizes the surface soil sample designation, depth, date, collection method, rationale, and laboratory analyses of each surface soil sample.

Surface soil samples were collected as grab samples from the walls of utility clearance excavations prior to the commencement of drilling and were collected from 0 to 0.2 ft below the vegetative root mat where “exposed” soils were present. In those areas where concrete or cobblestones were present, the “surface” soil samples were collected from the 0 to 0.2 ft below the base of the concrete or cobblestone.

Surface soil samples were collected for laboratory analysis, including Quality Assurance/Quality Control (QA/QC), and were placed directly into laboratory-supplied containers, placed in coolers, and preserved by ice. They were then sent under chain-of-custody protocol to Chemtech Laboratories (Chemtech) of Mountainside, New Jersey for analysis.

Excavated soils that showed evidence of contamination were placed in 55-gallon drums and managed in accordance with Subsection 3.8 of this report. Excavated soils that did not show signs of contamination were placed back in the utility clearance test pit.

### **3.3.1 Upper Fill Sampling and Analysis**

The upper fill is comprised of material from 0.2 ft to 17 ft bgs, as originally characterized by GEI during the IRI in 2006. Thirteen upper fill soil samples were collected from 2 to 17 ft bgs by GEI during the 2006 IRI activities. The location of the upper fill soil samples are shown on Figure 3-1 and details including sample designation, depth, date, collection method, rationale, and laboratory analyses of each surface soil sample are summarized on Table 3-1. These samples were taken to delineate horizontal and vertical impacts observed during SC activities performed by H&A in 2004. Upper fill soil samples taken by GEI below the initial pre-clear depth were collected from split spoon recovery. These upper fill samples were collected for laboratory analysis, including QA/QC, and were placed directly into laboratory-supplied containers, placed in coolers, and preserved by ice. They were then sent under chain-of-custody protocol by courier to Chemtech.

Eleven upper fill soil samples were collected during the 2008 SRI to evaluate the extent of upper fill impacts noted during the 2006 IRI, as addressed by the NYSDEC August 24, 2007 comment letter. The location of the upper fill soil samples are shown on Figure 3-1 and details including sample designation, depth, date, collection method, rationale, and laboratory analyses of each upper fill soil sample are summarized on Table 3-1.

Upper fill samples from 0.2 to 5 ft bgs were collected during utility clearance activities. Aliquots of soil were collected at 1-foot intervals with a steel trowel to a depth of 2 feet. A hand auger, posthole digger, or shovel was used to collect soil aliquots at 1-foot intervals from a depth of 2 to 5 ft bgs. The steel trowel was decontaminated between each use. Upper fill samples collected from 5 to 17 ft bgs were sampled directly from either split spoon or macro-core recovery, depending on drilling method used to advance the boring. Further explanation of drilling and sampling procedures for the 2008 work can be found in the following subsection of this report. Sample aliquots were placed in plastic bags and screened with a PID for VOCs. The sampling instrument was decontaminated between each sample aliquot collection. If there were no olfactory or instrument indications of contamination, the sample for VOC analysis was collected by scraping soil from along the side of the utility clearance hole, split spoon, or macro-core liner. If there were olfactory or instrument indications of contamination, the soil aliquot exhibiting the highest PID reading was jarred and submitted for VOC analysis. The soils for the remaining analyses were composited and placed in the appropriate sample jars. Sample jars were labeled, placed in a cooler of ice, and sent under chain-of-custody protocol by courier to Chemtech.

Excavated soils from the utility clearance excavation that showed evidence of contamination were placed in 55-gallon drums and managed in accordance with Subsection 3.8 of this report, as were remaining soils in split spoons and macro-cores. Excavated soils from the utility clearance excavation that did not show signs of contamination were placed back in the utility clearance test pit.

### **3.3.2 Lower Fill/Native Soil Sampling and Analysis**

During the 2006 IRI activities, 13 soil borings with continuous sampling were advanced and 40 lower fill/native soil samples were taken. Table 3-1 describes the purpose and sampling rationale for each sample taken, as well as which constituents the samples were analyzed for. Locations of the borings are presented on Figure 3-1. Of the borings proposed in GEI's RIWP (GEI, 2006), only two were not completed. ST17SB02 was to be

located within the Underground Parking Garage # 5, shown on Figure 2-2, between ST14SB01 and the entrance to the garage on the western side of Avenue C. The presence of boulders and fill materials within the subsurface prevented this boring from being advanced. The second proposed boring that was not completed during the IRI was ST14SB07, which was meant to be completed on the eastern side of Avenue C between ST14SB06 and ST14SB08. Active underground and adjacent station utilities located in the vicinity of the proposed boring posed a safety concern for Con Edison and the boring location was abandoned.

According to the IRIR, soil borings were advanced using either a hollow stem auger (HSA) drill rig outfitted with stainless steel split spoon samplers or using a propane-powered geoprobe-type rig outfitted with macro-core samplers with dedicated and disposable acetate liners. Those borings advanced outside of the parking garage areas were generally completed with HSA drill rigs using either mud-rotary or driving casing drilling methods. Mud-rotary methods were required due to the presence of silty sands and widely-graded running sands. Though this method was used, continuous split spoon sampling was maintained. A geoprobe-type rig was required for advancing borings within parking structures. Continuous cores were taken using macro-core samplers.

Drilling was performed by ADT and soil borings were advanced to the target depth or equipment refusal, whichever occurred first. Soils were logged in the field by GEI. Additional information regarding IRI sampling is available in Subsection 3.6 of the IRIR (GEI, 2007a). GEI boring and monitoring well completion logs are provided in Appendix B of this report.

The SRI soil borings were completed by PEC under contract to AECOM between March and July 2008 under the supervision of an AECOM geologist or engineer. Soil borings were advanced using HSA drilling rigs (truck- and track-mounted variations) or direct-push technology using a geoprobe rig. Continuous soil samples were generally collected from a depth of 5 ft to the base of each borehole. The upper 5 ft of each boring was logged continuously during utility clearance. The soils were logged for composition and presence of visual and olfactory impacts and were field screened with a PID for the presence of VOCs. Boring logs are provided in Appendix B of this RI report.

Samples were collected using a 2-inch outside diameter, 2-foot long split-spoon sampler. Soil samples were collected in advance of the augers by driving the split-spoon sampler through the sample interval with a 140 pound hammer on an anvil attached to the drive head on the sampler (via automatic hammer). Blow counts were recorded for every 6-inch interval. Split-spoon sampler refusal was considered 100 blows per 6-inches. Split spoons were decontaminated with Alconox<sup>®</sup> and water between each sample. The downhole drilling equipment was decontaminated by steam cleaning between each boring.

Soil borings advanced by direct-push geoprobe used a 5-foot long steel sampling tube (macro-core sampler) with an acetate liner. New liners were used for each 5-foot sample interval.

Upon completion, boreholes were grouted from the base of the boring. IDW was managed in accordance with Subsection 3.8 of this SRI report.

During 2008 SRI activities, 37 lower fill/native soil samples were taken. Information regarding sample location, depth, date, rationale, and analyses is available in Table 3-1 and boring locations are shown on Figure 3-1. Lower fill/native soil samples were collected in accordance with proposed samples from the SRIWP (ENSR, 2008d) and taken mainly to delineate the horizontal and vertical extent of impacts from the former MGP station sites, as requested by the NYSDEC in the August 24, 2007 comment letter.

Soil for VOC analysis was collected directly from the interval exhibiting the highest PID readings when detected. Soil collected for the remaining analyses was sampled across the sample interval. Soil samples were collected in jars, labeled, placed in coolers of ice, and sent under chain-of-custody protocol by courier to Chemtech.



Soils remaining in split spoon and/or macro-core samplers following sample collection were containerized in 55-gallon drums and managed in accordance with Subsection 3.8 of this report.

Four proposed borings, 19WVSB03, 17WVSB01, ST14SB14, and ST14SB15, were not completed during SRI field activities, and therefore their associated samples were not taken. Borings 19WVSB03 and 17WVSB01 were not completed due to refusal at 12.3 ft and 8 ft bgs, respectively. Borings ST14SB14 and ST14SB15 were not installed due to access constraints.

### **3.4 Monitoring Well Installation and Development**

There were no additional monitoring wells installed during the 2008 SRI field activities. As such, the following section summarizes the work performed by GEI in 2006 and submitted as Subsection 3.7 of the IRIR in 2007.

Under the direction of GEI, 13 monitoring wells were installed as part of the IRI field program and were located within or adjacent to the former East 14th and East 17th Street Stations. The rationale for these wells and associated groundwater samples can be found on Table 3-1 and the wells may be seen on Figure 3-1. All IRI monitoring wells were installed by ADT under contract to GEI and were completed as a 2-inch inner diameter monitoring well with flush-threaded polyvinyl chloride (PVC) 0.010-inch slotted screen, a solid PVC riser, and a flush-mounted protective cover. Five wells were installed within or near the former East 14th Street Station site and eight wells were installed within or near the former East 17th Street Station site.

Wells were installed as clusters and screened intervals were identified as shallow (S), intermediate (D), and deep (DD) to indicate the groundwater flow zone within which each well was screened. In general, shallow monitoring wells were installed to a depth of 17 ft bgs, intermediate wells were installed to a depth of approximately 32 ft bgs, and deep wells were installed to a depth below 50 ft bgs. Monitoring well construction logs for wells installed during the GEI IRI and the H&A SCS are available in Appendix B of this RI report and the details of monitoring well construction are available in Table 3-2.

The monitoring wells installed during the IRI in 2006 were developed by GEI to remove silt and clays from the well, as well as stabilize the well filter pack. Additional information on monitoring well installation and development may be found in Subsection 3.7 of the IRIR (GEI, 2007).

#### **3.4.1 Groundwater Elevation and Nonaqueous Phase Liquid Thickness Measurements**

As part of the SRI field activities, AECOM conducted a round of water level and NAPL thickness measurements in 25 of the 29 monitoring wells on September 24, 2008, in addition to recording the depth to water and presence or absence of NAPL during groundwater sampling. Water level and NAPL measurements were recorded in four wells (00MWS06, 00MWD06, 17MWDD04, and MW-10) during groundwater sampling activities in August 2008. Depths were measured using electronic water level meters and/or oil-water interface probes. The August 2008 and September 24, 2008 groundwater elevation data were compiled and are presented in Table 3-3 along with the June 2006 RI data.

#### **3.4.2 Groundwater Sampling and Analysis**

Groundwater sampling took place during both phases of remedial investigation field work. GEI took 28 groundwater samples from 11 well clusters, along with QA/QC samples, in June 2006. Groundwater was not sampled from monitoring well 14MWD02 due to the accumulation of NAPL in the bottom of the well. Monitoring well locations are shown in Figure 3-1 and sample collection rationale and laboratory analyses are provided in Table 3-1. Additional information regarding the 2006 groundwater sampling event is available in Subsection 3.8.4 of the IRIR (GEI, 2007). In addition, groundwater sampling forms for this sampling event are available in Appendix D of this RI report, along with those forms generated during AECOM's 2008 groundwater sampling event.

Twenty-eight monitoring wells were sampled between August 19 and September 29, 2008 as part of the SRI field activities. As with the previous sampling event, NAPL was encountered at 14MWD02 and a sample was not taken from that well. AECOM took 29 groundwater samples from the 28 wells that were sampled. Monitoring well 17MWS05 was sampled on September 10, 2008 and re-sampled on September 29, 2008 due to limited volume submitted to the laboratory after the first round of sampling. Monitoring well locations are shown in Figure 3-1 and sample collection rationale and laboratory analyses are provided in Table 3-1. Field forms for the groundwater sampling events are included as Appendix D to this report.

Monitoring wells were purged and groundwater samples were collected using a peristaltic pump and low-flow sampling methodologies. Prior to purging and sampling the depth to water and presence/thickness of NAPL were measured to the nearest 0.01 of a foot in each monitoring well. NAPL was only found in monitoring well 14MWD02 where approximately one foot was noted. Tubing (and for the deep DD-series wells, a foot valve) was placed at the approximate midpoint of the screened interval unless NAPL was observed/detected in the well.

Groundwater purge rates were set below the maximum sustainable flow rate to ensure that the water table remained within 0.3 feet of the initial depth to water reading in the well. During purging activities, groundwater passed through a Horiba U-22 flow-through cell which contained probes to measure the water temperature, pH, conductivity, and oxidation-reduction potential. Samples of water discharging from the cell were collected at 5-minute intervals and analyzed for turbidity using a LaMotte® 2020 turbidity meter. After passing through the cell, the water was discharged and temporarily contained in 5-gallon buckets. The purged water was later transferred to 55-gallon closed top drums and managed in accordance with Subsection 3.8 of this report.

Once the water quality parameters had stabilized, the Horiba U-22 flow-through cell was disconnected and groundwater samples were collected directly into appropriate laboratory-supplied glassware. Sample bottles were labeled, wrapped in plastic, placed in coolers with ice, and sent by courier to Chemtech for analysis under chain-of-custody protocol.

### 3.4.3 Aquifer Conductivity Testing

Aquifer conductivity testing was performed at the site by conducting slug tests at three locations: 14MWS01, 17MWS04, and 14MWD01. This testing was done by GEI in October 2006 and is summarized below. Additional information is provided in subsection 3.9 of the IRIR (GEI, 2007a) and Section 4 of this report.

On October 9 and 10, 2006, GEI conducted in-situ (slug) tests on three wells (14MWS01, 17MWS04, and 14MWD01) screened in the shallow and intermediate groundwater zones of the Upper Glacial Aquifer underlying Lower Manhattan, including the Stuyvesant Town property. These tests were conducted using a downhole data logger. The data were analyzed by the Bouwer and Rice method (1989) to calculate aquifer hydraulic conductivity values for the two depth intervals within the overburden aquifer. Table 3-4 shows a summary of the hydraulic conductivity values and Appendix E includes the data files for the slug tests and subsequent hydraulic conductivity calculations provided by GEI.

## 3.5 Indoor Air Survey

GEI simultaneously completed a building assessment survey and the collection of indoor air samples within the Stuyvesant Town buildings at the former East 14th Street Station site on March 16, 2006. These sample locations were generally coincident with those that had been sampled by RETEC in 2003 as shown on Figure 2-3. A total of eight (seven samples, one duplicate sample) indoor air samples were taken from within five buildings located within the footprint of the former East 14th Street Station. Additional information regarding this survey was reported in the IRIR by GEI and is available in Subsections 3.3 and 3.8.1 of that report (GEI, 2007a).

Indoor air samples were neither proposed in the SRIWP (ENSR, 2008d) nor collected during the SRI activities.

### 3.6 Soil Gas Sampling

GEI also collected 13 soil vapor samples and one duplicate sample from 11 temporary soil vapor monitoring points and 2 temporary sub-slab vapor points installed during the IRI activities in 2006. Sample locations are shown on Figure 3-1 and were within the footprints of all three former MGP station sites. The two temporary sub-slab vapor points were installed in Underground Parking Garage #5, also illustrated on Figure 3-1, and the vapor samples were collected. These samples were taken in accordance with GEI's RIWP (GEI, 2006) and further information regarding sampling procedures are available as Section 3.5 of the IRIR (GEI, 2007a).

No soil gas or sub-slab vapor samples were proposed in the SRIWP (ENSR, 2008d) or collected during the SRI activities.

### 3.7 Chemical Analytical Program

The majority of the soil and groundwater samples collected during both phases of this RI were analyzed for the following:

- VOCs by USEPA SW-846 Method 8260B
- SVOCs by USEPA SW-846 Method 8270C
- Metals by USEPA SW-846 6000/7000 Series
- Total cyanide by USEPA SW-846 Method 9012A

Additionally, the 2006 IRI samples were analyzed for amenable cyanide by USEPA SW-846 Method 9012A, and select groundwater samples were analyzed for dissolved metals. These analyses were performed by Chemtech in accordance with NYSDEC Analytical Services Protocol (ASP).

### 3.8 Management of Investigation-Derived Waste

GEI outlined their management of IDW in Section 3.12 of the IRIR (GEI, 2007a). A total of 103 IDW drums were generated during the 2006 IRI activities, including 32 classified as construction and debris material (C&D), 29 classified as soil, and 42 classified as liquids. IDW records from that report are included as Appendix F to this report.

The management of IDW was performed by AECOM field personnel during the SRI activities at the site. Waste generated during the SRI included soil cuttings, decontamination fluids, groundwater purge and development water, and C&D, including personal protection equipment (PPE). All of the waste was containerized in either closed-top (liquid) or open-top (soil and C&D) 55-gallon drums. The drums were collected at the end of each day and transported to the equipment storage area underneath the FDR Drive. Drums were labeled and composite samples were collected from the soil and water drums for waste characterization analysis, which was completed by Chemtech. Samples submitted to the laboratory for analysis were requested for a 5-day turnaround time to expedite disposal. Clean Earth of North Jersey, Inc. provided transport and disposal of the drums.

A field log was developed and maintained to keep track of the number of drums, waste type, and designation. Table 3-5 provides a summary of the 2008 data, including date, manifest number, and the total number and type of drums included on the manifest for the waste that was generated and disposed during the RI field activities. The waste generated during the investigation was separated as per waste profiling with the transport/disposal facility (Clean Earth of North Jersey, Inc.). The manifests for the IDW are located in Appendix F, preceding the information provided by GEI for the 2006 IDW management. In total, 73 drums were generated during SRI activities, including: 14 liquid, 38 C&D, and 21 soil.

### 3.9 Survey of Remedial Investigation Sampling Locations and Basemap Development

The 2006 IRI sample locations were surveyed by a surveyor licensed in the State of New York. Although previously reported by GEI as having been surveyed in the East Zone of the New York State Plane Coordinate System, the 2006 sample locations were actually surveyed in the Long Island Lambert Zone of the New York State Plane Coordinate System. These locations were then tied into the site map prepared by H&A during the SCS. That map is based on the Borough of Manhattan Vertical Datum which is equivalent to +2.75 United States Geologic Survey (USGS) Vertical Datum of 1929. Elevations were surveyed to the nearest 0.01 foot. The 2006 RI locations were tied into the site plan using coordinates provided for previously installed monitoring wells, fixed utility locations (lights), and buildings on the Stuyvesant Town property. Surveyed property features were referenced to the Borough of Manhattan Horizontal Coordinate System.

The AECOM 2008 RI sample locations were surveyed by Geod, Inc. These locations were surveyed in the 1983 North American Datum (NAD 83) Long Island Lambert Zone of the New York State Plane Coordinate System and were referenced to the 1988 North American Vertical Datum (NAVD88). Surveyed locations were then added to the previous data to create the new basemap (Figure 3-1).

### 3.10 Quality Assurance/Quality Control

QA/QC protocols and procedures were implemented during both phases of the remedial investigation at the Stuyvesant Town former MGP station sites, in order to ensure accuracy, precision, and completeness of chemical data collected during investigation activities. Samples for QA/QC were taken during all portions of environmental work done at the site in order to evaluate the validity of sampling, decontamination, and analytical methods employed throughout the work.

QA/QC samples were taken of soil, groundwater, and air and included trip blanks, duplicates, and field blanks or equipment rinsates. The samples taken for QA/QC have been summarized in Table 3-6. There were two types of field duplicates taken during RI activities: "blind" duplicates and matrix spike/matrix spike duplicate (MS/MSD) samples. Blind duplicates were labeled in such a manner that the laboratory would not know which samples they were duplicating, nor that they were actually duplicates in some cases. This process allowed both GEI and AECOM to verify laboratory reproducibility of analytical data. MS/MSD samples were also submitted and were identified as such on the chain-of-custody so the laboratory could perform internal quality checks on instrument performance.

Field blanks were used to monitor equipment decontamination procedures and lower the possibility of cross-contamination between samples and sample locations. Trip blanks were submitted to monitor possible sources of contamination during the transportation of analytical samples from the site to the laboratory.

During both the 2006 and 2008 RI activities, QA/QC samples were submitted to Chemtech for analysis. The samples were analyzed for the following:

- VOCs by USEPA SW-846 Method 8260B
- SVOCs by USEPA SW-846 Method 8270C
- Metals by USEPA SW-846 6000/7000 Series
- Total cyanide by USEPA SW-846 Method 9012/9013

Full data evaluation packages were submitted to GEI and AECOM by Chemtech for the 2006 and 2008 data, respectively, in accordance with NYSDEC Electronic Data Deliverables (EDD) requirements. Data usability summary reports were conducted by GEI and AECOM based on the following parameters:

- Preservation and technical holding times
- Calibration verification results
- Blanks
- Field duplicates
- Laboratory fortified blank recovery

Copies of both the GEI and AECOM data packages and data usability summary reports (DUSRs) that were provided by Chemtech are provided in Appendix G of this report. Qualifiers are included in those reports as well as in the summary tables within this report.

## 4.0 Regional Geology/Hydrogeology

Information concerning the site stratigraphy and hydrogeology were obtained from observations made during the installation of environmental borings and monitoring wells during the SRI performed by AECOM in 2008, IRI performed by GEI in 2007, and during the SC by H&A in 2004. This section discusses the geologic and hydrogeologic characteristics of the subsurface in and adjacent to the First Avenue Loop, East 14th Street, East 17th Street, and East 19th Street Station footprints.

### 4.1 Site Geology

There were four major stratigraphic units identified during investigation drilling programs. As shown on the boring logs and cross sections, the site geology generally consists of the following four units from ground surface downward:

- Fill
- Organic Deposits/Peat
- Glacial Lacustrine/Glacial Outwash Deposits
- Weathered Bedrock

Six geologic cross sections (A-A' through F-F') were developed based on boring log data collected during the various investigation activities and are based on the original cross sections created by H&A and expanded upon by GEI and AECOM. In addition to the geological conditions, the cross sections illustrate the physical and analytical observations of MGP-related impacts and petroleum impacts related to non-MGP sources. Geologic cross section locations are illustrated on Figure 4-1 and the cross sections are provided on Figures 4-2A through 4-7B. The boring logs and well construction diagrams on which the cross sections are based are provided in Appendix B.

The site geology was described in detail in the IRIR (GEI 2007a) by depositional environment. The SRI borings encountered subsurface material consistent with that described in that and as such, much of the geologic information below is excerpted from the IRIR with additional detail or modifications provided from observations made during the SRI field activities.

#### 4.1.1 Fill

The fill layer beneath the former MGP station sites, as well as the First Avenue Loop Road, consists of intermixed sand, silt, and gravel with varying amounts of brick, concrete, boulders, wood, ash, cinders, metal fragments, and glass. Clinker and ash-like material along with bricks and concrete, were occasionally observed in the split-spoon samples.

The depth of fill at the site ranged from approximately 20 ft near the First Avenue Loop Road to almost 50 ft bgs at boring location ST17SB04, located just off of the Avenue C Loop Road on the eastern portion of the site. In general, the fill depth is between 20 and 30 ft bgs across the site and most likely reflects man-made disturbances to pre-existing natural soils from historical building construction and eastern expansion of the shoreline.

#### 4.1.2 Organic Deposits/Peat

Deposits of organic material were encountered within and beneath the fill layer at the former MGP station sites, as well as nearby adjacent areas. The deposits consist mainly of gray to black clayey silt, organic silt,

and brown to black peat and are characterized by an organic or hydrogen sulfide-like odor. In a number of borings, shell fragments were found, along with plant material, in addition to the organic odor. This layer, though sporadic, was found at a number of borings at each of the former MGP station sites, however was not encountered at the boring on the First Avenue Loop (A4WVSB01). This is most likely due to the fact that the boring did not extend deep enough and was completed to 20 ft bgs, within the fill layer.

The organic deposits found during the various drilling activities are consistent with low energy marsh and mud flat environments, which existed in the area up through the early 1800s, at which time the area was filled in to extend the shoreline and create more land for industrial use. The organic deposits, therefore, reflect those former mud flats and stream and creek beds known to have fed the East River in this area. The inconsistencies in the presence of these deposits are attributable to the infilling and leveling activities associated with extending the shoreline eastward.

### 4.1.3 Glacial Deposits

Beneath the fill and peat/organic deposit layers, glacial deposits were encountered. The deposits range in depth from approximately 16 ft to 85.5 ft bgs and consist primarily of glacial lacustrine deposits, interbedded and underlain by layers of glacial till and outwash. The majority of the environmental borings drilled during site characterization and remedial investigation activities at Stuyvesant Town were completed within the glacial deposits, however four borings in the footprint of the former East 14th Street Station extended to bedrock. Samples from these four borings suggest that the thickness of the glacial deposit layer exceeds approximately 60 ft at some areas beneath Stuyvesant Town.

The glacial lacustrine deposits consist of layers of gray to red-brown sand, silty sand, silt and clay, and clay layers and are thinnest beneath the former East 14th Street Station. These deposits get thicker beneath the former East 17th Street Station, as can be seen in the cross sections (Figures 4-2A through 4-7B) and boring logs (Appendix B). There is a fine-grained sand layer present at each of the former stations, beneath the fill or organic deposits, where they are present. This fine-grained sand layer may be remnants of the damming of the Hudson River by the Harbor Hill Terminal Moraine, which dammed the river to the south (Meguerian, 2003). Some glacial outwash sands were encountered within and below the fine-grained glacial lacustrine deposits near the southeastern portion of the former East 14th Street Station, however they were not continuous and were in rather isolated layers. These sands are generally red-brown to olive-gray and brown with occasional fine-grained silt and clay lenses. They were found between approximately 30 ft and 85 ft bgs.

### 4.1.4 Bedrock

The bedrock beneath Stuyvesant Town varies below the three former MGP station sites. During AECOM's RI activities, bedrock was only encountered in a single boring (ST14SB09) and is described as crushed mica schist at 45 ft bgs, which is interpreted as being the surface of bedrock. The inferred bedrock surface was encountered beneath the southeastern portion of the former East 14th Street Station in three borings between 49.5 ft bgs (ST14SB05) and 85.5 ft bgs (ST14SB03). The inferred bedrock surface was encountered on the south side of East 14th Street between 41 ft bgs (ST14SB10) and 44 ft bgs (ST14SB11). The surface of bedrock was determined through split- spoon and auger refusal. Black and white striated weathered rock fragments were encountered and previously identified as the Ravenswood Granodiorite. As previously noted and according to published information, the bedrock beneath the East 14th and East 17th Street Stations is classified as the Ravenswood Granodiorite (Baskerville, 1994). The Ravenswood Granodiorite is igneous and described as a medium to dark gray granodiorite with a granitic or gneissic texture formed during the Middle Ordovician to Middle Cambrian periods or approximately 460 to 500 million years ago (Baskerville, 1994). The surface dips sharply to the northeast and is located approximately 40 to 80 ft below ground surface in the area near the former East 14th Street Station and more than 80 feet below the footprint of the East 17th Street Station (Baskerville, 1994).

Also underlying the Stuyvesant Town apartment complex is the Inwood Marble, which underlies the area of the former East 19th Street MGP Station. The Inwood Marble is a metamorphic rock generally described as white to blue-gray, fine to coarse grained calcitic to dolomitic marble, middle Ordovician to Late Cambrian in age (Baskerville, 1994). It is present approximately 60 to 80 ft bgs at the East 19th Street Station site and is part of the northeast-southeast trending Cameron thrust fault which reportedly bisects the Stuyvesant Town property. According to the 2002 MGP Research Reports published by Langan, bedrock in the vicinity of the fault dips roughly 45 degrees to the northwest (GEI, 2007a). Borings advanced at the former East 17th Street and East 19th Street Stations, as well as boring A4WVSB01, which was advanced on the First Avenue Loop Road, did not extend to bedrock.

## 4.2 Site Hydrogeology

The site hydrogeology was described by GEI (2007a) in terms of the closest surface water body, the East River, and the groundwater table aquifer, Upper Glacial Aquifer, located beneath Stuyvesant Town. As such, the majority of the information below is excerpted from the IRI report, with additional detail or modifications provided from observations made during the 2008 SRI field activities.

The nearest surface water body to the Stuyvesant Town site is the East River, which is located approximately 200 ft to 2,250 ft from the property boundaries to the east. The East River is classified by the NYSDEC as a Class I saline surface water which is used for ship traffic and non-contact recreational purposes. Class I saline surface waters are also designated for fishing, however, numerous NYSDOH health advisories exist for consumption of fish caught in the East River. The west shoreline of the East River in the vicinity of the site is listed in the National Wetlands Inventory (Langan, 2002). A single groundwater aquifer, the Upper Glacial Aquifer, has been identified beneath the property, and is generally an unconfined aquifer exhibiting some semi-confined conditions at depth because of the presence of tighter silty sand and clay materials.

Fourteen monitoring wells were installed by H&A during the SC field activities in 2004, and 13 monitoring wells were installed by GEI during the IRI field activities in 2006. Two monitoring wells (MW-36 and MW-10) were installed prior to 2004 and are closest to the former East 14th Street Station. These 29 monitoring wells are used to evaluate groundwater conditions at the site. Table 3-2 provides a summary of the monitoring well designations, screened intervals and aquifer zones, total depth, and top of casing and screened interval elevations. No monitoring wells were installed during the SRI field activities, however a round of groundwater sampling was completed in September, 2008.

As shown in Table 3-2, the monitoring wells are screened at three general depth zones within the unconfined overburden aquifer beneath the site. The shallow zone wells (S-series) are generally screened between 5 and 15 ft bgs. The intermediate zone wells (D-series) are generally screened between approximately 21 and 31 ft bgs. The deep zone wells (DD-series) are generally screened between approximately 40 and 50 ft bgs. Seven each of the S and D-series wells were installed by H&A during SC activities in 2004. All eight of the DD-series wells, along with two S-series wells and three of the D-series wells were installed by GEI during IRI activities in 2006. The wells were constructed using 2-inch PVC casing threaded to 2-inch Schedule 40 PVC riser.

GEI evaluated groundwater flow in the Upper Glacial Aquifer by dividing the aquifer into a shallow (water table) zone and a deeper intermediate groundwater zone. Groundwater elevation data are summarized in Table 3-3. Groundwater contour maps are shown on Figure 4-8 and were initially created using depth to groundwater measurements taken on June 6, 2006. The 2008 contours are based on measurements taken AECOM during groundwater sampling events in August and September, 2008. The shallow contours were created using data from the following wells: 14MWS01, 14MWS02, MW-36, MW-10, 17MWS03, 17MWS04, 17MWS05, 17MWS06, 19MWS05, 00MWS06, and 00MWS07. Contours in the intermediate zone were created using the following wells: 14MWD01, 14MWD02, 14MWD05, 17MWD03, 17MWD04, 17MWD06, 17MWD06, 19MWD05, 00MWD06, and 00MWD07. Groundwater flow and hydraulic gradients for the two zones beneath Stuyvesant Town were determined based on the groundwater contours.



Horizontal hydraulic conductivities were calculated by GEI using the Bower Rice Method based on in-situ tests performed on two monitoring wells screened in the shallow water table zone and one well screened in the intermediate groundwater zone. Table 3-4 provides hydraulic conductivity data calculated by GEI (2007a).

#### **4.2.1 Upper Glacial Aquifer – Shallow (Water Table) Zone**

Water level data collected during the 2006 IRI and the 2008 SRI were converted to groundwater elevations using surveyed well elevations and are presented on Table 3-3. Groundwater elevation contour maps for these data are illustrated on Figure 4-8. Direction of flow can be inferred from this figure and is shown as a blue arrow.

During the IRI, water table elevations in the shallow zone ranged from 4.75 ft NAVD88 (00MWS06) to -0.17 ft NAVD88 (17MWS05). During the 2008 SRI, water table elevations in the same zone ranged from 6.25 ft NAVD88 (00MWS06) to -0.62 ft NAVD88 (14MWS01). The top of the screened intervals within the shallow zone wells range from 7.25 feet NAVD88 (00MWS07) to -0.85 ft NAVD88 (17MWS05).

As can be seen in Figure 4-8, the general trend for groundwater flow in the shallow upper glacial aquifer is east-southeast towards the East River, however flow may vary locally due to the heterogeneity of fill materials in the upper portions of the aquifer, thereby causing localized disparities in the flow direction.

According to calculations by GEI, the average hydraulic gradient of the shallow groundwater aquifer ranges from 0.0019 foot/foot to 0.01 foot/foot with the steepest hydraulic gradient being located in the southeast corner of the former East 14th Street Station along East 14th Street. Based on the 2008 data, the average hydraulic gradient of the shallow groundwater aquifer ranges from 0.016 foot/foot to 0.0025 foot/foot. Generally, the horizontal hydraulic gradients were lower in the central portion of Stuyvesant Town, to the west of the former MGP station sites (GEI, 2007a).

Rising head slug tests conducted on monitoring wells 14MWS01 and 17MWS04 were conducted by GEI on October 26, 2006 to determine the hydraulic conductivity of the shallow zone of the Upper Glacial Aquifer. The two wells used in this test are screened in a sand-and-clay fill material and silty-sand fill material and the calculated hydraulic conductivity is 15 ft per day for 14MWS01 and 169 ft per day for 17MWS04 (GEI, 2007a).

Average linear flow velocities were also calculated by GEI for the shallow zone. Calculations were based on the calculated horizontal hydraulic gradients and hydraulic conductivities. The estimated average linear flow velocities range from 390 ft per year in the central portion of Stuyvesant Town, near monitoring well 17MWS04, to roughly 182 ft per year in the southeastern portion of the former East 14th Street Station (GEI, 2007a). The calculated average linear flow velocity for the central portion of Stuyvesant Town using the 2008 data is approximately 514 ft per year, while the calculated average linear flow velocity in the southeastern portion of the property is approximately 292 ft per year. An estimated porosity of 30% was used for calculating the average linear flow velocity.

#### **4.2.2 Upper Glacial Aquifer – Intermediate and Deep Groundwater Zones**

The deep groundwater zone within the footprints of the former East 14th, East 17th, and East 19th Street Stations and adjacent areas is located within fill material, organic deposits, and glacial deposits, as can be seen on the cross sections (Figures 4-2A through 4-7B). There were 16 monitoring wells located within this deeper groundwater zone, as well as two background monitoring wells located west of the former stations within the Stuyvesant Town property. These wells (00MWD06 and 00MWD07) are screened within glacial deposits.

Below the shallow (water table) groundwater zone, groundwater is monitored by wells screened in the intermediate and deep groundwater zones. Wells screened in the intermediate zone are screened from approximately -8.17 ft NAVD88 (19MWD05) to -26.23 ft NAVD88 (14MWD05) and are labeled as “D” wells

within each well cluster. These wells are screened within fill material, organic deposits, and glacial deposits. Those wells screened within the deep groundwater zone are screened from approximately -29.51 ft NAVD88 (17MWDD04) to -52.52 ft NAVD88 (14MWDD03) and are labeled as "DD" wells. These wells are primarily screened within glacial deposits at or near the former East 14th and East 17th Street Stations. All wells were constructed using Schedule 40, 20-slot PVC and have a 10-foot screened interval.

During the IRI, groundwater elevations in the intermediate zone ranged from 4.86 ft NAVD88 (00MWD07) to 0.43 ft NAVD88 (14MWD05). During the 2008 SRI, water table elevations in the same zone ranged from 5.00 ft NAVD88 (00MWD07) to 0.13 ft NAVD88 (14MWD05).

Deep ("DD") groundwater monitoring wells were not used in generating the groundwater elevation contour map for the deep groundwater zone (Figure 4-8) due to the lack of these wells throughout the site. Only seven monitoring wells designated as "DD" wells were installed, none of which were installed as background wells or at the former East 19th Street Station. Groundwater elevations, however, ranged from 2.66 ft NAVD88 (17MWDD04) to -0.43 ft NAVD88 (14MWDD05) during SRI 2008 field activities.

As seen in Figure 4-8, the groundwater in the intermediate zone appears to flow eastward towards the East River. In addition to the man-made structures and heterogeneity of the fill beneath Stuyvesant Town causing local variations in groundwater flow, two sewer lines flowing east to west bisect the Stuyvesant Town property and most likely intersect the Pollution Control Interceptor Sewer running along East 20th Street and south along Avenue C. Though not seen in the "D" wells near the former East 14th Street Station, groundwater flow in that area may be affected by the MTA subway structures and foundations for the "L" line located beneath the East 14th Street ROW and roadway (GEI, 2007a).

According to the 2006 GEI data, the average hydraulic gradient of the intermediate groundwater zone within the aquifer underlying Stuyvesant Town ranges from 0.00046 foot/foot to 0.008 foot/foot with the steepest gradient being located in the southeast corner of the former East 14th Street Station along East 14th Street. Hydraulic gradient calculations were made based on groundwater elevations between two well pairs: 17MWD04, 17MWD06 and 14MWD01, 14MWD02. Using the same well pairs, the average hydraulic gradient of the intermediate groundwater zone according to the 2008 data ranges from 0.003 foot/foot in the central portion of the Stuyvesant Town property to 0.006 foot/foot at the former East 14th Street Station site with the steeper gradient being found in the central portion of the property near 17MWD04.

A single rising head slug test conducted on monitoring well 14MWD01 was conducted by GEI on October 26, 2006 to determine the hydraulic conductivity of the intermediate zone of the Upper Glacial Aquifer. The well used in this test is screened in a silty-sand material and the calculated hydraulic conductivity for 14MWD01 is 129 ft per day (GEI, 2007a).

Average linear flow velocities were also calculated by GEI for the intermediate zone and are based on the calculated horizontal gradients and hydraulic conductivities. The estimated average linear flow velocities range from 72 ft per year in the area of Stuyvesant Town near the former East 17th Street Station to 1,255 ft per year within the East 14th Street Station footprint, near the East 14th Street ROW and the "L" subway line (GEI 2007a). Using the 2008 calculated horizontal gradients and the 2006 hydraulic conductivity of 129 ft per day the average linear flow velocities range from approximately 471 ft per year near the former East 17th Street Station to approximately 942 ft per year within the footprint of the former East 14th Street Station. An estimated porosity of 30% was used in these calculations.

### 4.2.3 Vertical Head Gradients

The potential for vertical groundwater flow between flow zones within an aquifer is of interest because of the potential for groundwater contaminant migration between different zones. The calculation of the vertical head gradient between the two groundwater flow zones, therefore, can provide a means to assess the potential for groundwater, and thus contaminant, flow between separate flow zones. Groundwater may not actually move

vertically between two aquifers or flow zones, however, if a confining layer, such as varved silt-clay or rhythite deposits, is present.

Based on groundwater elevations collected in both 2006 and 2008, vertical head gradients were calculated to assess the potential for vertical movement of groundwater between flow zones within the Upper Glacial Aquifer underlying Stuyvesant Town and the former MGP stations sites. These calculated values are provided in Table 4-1. According to the 2006 data, there was a slight downward gradient between the shallow and intermediate groundwater zones for the majority of the well clusters within the former East 14th, East 17th, East 19th Street Stations and surrounding areas. These downward gradients ranged from -0.014 for 17MWS06/17MWD06 to -0.137 for 19MWS05/19MWD05. GEI also noted slight upward gradients within the background monitoring well cluster 00MWS07/00MWD07 at 0.009 and at the 17MWS05/17MWD05 well cluster at 0.053 (GEI, 2007a).

Groundwater elevations and subsequent calculations of vertical head gradient using 2008 data showed some change from a more downward gradient to a slightly more upward gradient for flow between the shallow and intermediate groundwater flow zones within the Upper Glacial Aquifer. A downward gradient was only seen in six well clusters, as opposed to the eight well clusters that had previously exhibited the potential for downward flow. The downward gradient ranged from -0.008 at 17MWS04/17MWD04 to -0.073 at the 17MWS05/17MWD05 well cluster. The upward gradient ranged from 0.071 in the 17MWS03/17MWD03 well cluster to 0.305 in the 14MWS01/14MWD01 well cluster.

Also shown in Table 4-1 are the vertical head gradients for the intermediate to deep groundwater flow zones. The data from the 2006 as well as the 2008 field activities show both upward and downward head gradients observed between the "D" and "DD" well pairs and do not exhibit a similar change of gradient over time as seen in the shallow to intermediate data. In 2006 upward gradients were noted in well pairs 14MWD01/14MWDD01, 17MWD03/17MWDD03, and 17MWD04/17MWDD04. The remaining intermediate and deep well pairs exhibited a downward vertical gradient in 2006. In 2008 only one intermediate/deep well pair exhibited an upward vertical gradient, 14MWD02/14MWDD02. The remaining intermediate/deep well pairs exhibited downward vertical gradient in 2008.

## 5.0 Analytical Results and Subsurface Observations

This section presents and describes the analytical results for the soil, groundwater, and soil gas samples collected during the RI and SCS as well as the visible MGP-related impacts noted during subsurface intrusive activities including the capital improvement campaign to replace water and hydrant valves throughout the Stuyvesant Town property. Analytical results tables for the surface soil, upper fill soil, lower fill/native soil, groundwater, and soil gas samples collected during the RI and SCS are presented in the following subsections. The analytical results were compared to applicable NYSDEC guidance values and/or standards, as well as site-specific background values. The discussion is presented by environmental media and area of concern.

### 5.1 Surface Soil

A total of 44 surface soil samples and 4 duplicate samples of surface soils were collected at the Stuyvesant Town property by H&A and GEI. The majority (36) were collected by H&A during the 2004 SC work. There were no surface soil samples collected during the 2008 RI. Surface soil samples were taken beneath concrete, cobblestone, or landscaped surfaces and extended to a depth of 0.2 ft. Analytical results for surface soils can be found in Tables 5-1, 5-2, and 5-3. Surface soil sample locations and concentrations of compounds detected in surface soil are illustrated on Figure 5-1.

#### 5.1.1 Former East 14th Street Station Results

Of the 44 surface soil samples and 4 duplicate samples taken at the Stuyvesant Town property, 18 soil and 3 duplicate samples were taken in the footprint of the former East 14th Street Station (Figure 5-1). Only one sample (ST14SB02) was collected by GEI in 2006. The rest were collected by H&A in 2004. As shown on the cross sections (Figures 4-2A through 4-7B) and in the boring logs (Appendix B), fill materials extend to approximately 14 to 25 ft bgs in this portion of the Stuyvesant Town property. As previously reported by GEI, the surface soil samples were taken from areas that did not show evidence of MGP-related impacts and as can be seen on Table 5-1, the concentrations of VOCs and non-carcinogenic PAHs were both below their respective RSCOs and SSBVs. The concentrations of some individual carcinogenic PAHs and several metals were consistent across the site and exceeded the individual RSCOs and SSBVs. Benzo(a)pyrene (BaP) equivalents concentrations exceeding both the RSCO (0.061 mg/kg) and SSBV (1.046 mg/kg) ranged from 1.188 mg/kg in sample 14PH003 to 14.37 mg/kg in sample 14GH007. The total SVOCs RSCO is 500 mg/kg. The maximum total SVOC concentration found in this portion of the site was 122.569 mg/kg (14GH007), well below the RSCO.

In addition to comparison with the RSCOs and SSBVs, concentrations of metals and carcinogenic PAHs were compared to the New England urban soil background levels and/or Eastern United States background values, as referenced in Appendix H – Table 1. The only exceedance of these PAH values was seen in sample 14GH007, which was collected beneath the floor of the parking garage near the corner of East 14th Street and Avenue C (Figure 5-1). In addition, the only two metals that exceeded both the RSCOs and/or SSBVs to also exceed the researched background values were copper and lead. These compounds are not typically associated with MGP operations and are most likely related to the quality of fill present at the site.

#### 5.1.2 Former East 17th Street Station Results

Fill extends to approximately 22 to 47 ft bgs at the former East 17th Street Station site, as shown on Figures 4-2A, 4-2B, and 4-3 and in the boring logs, found in Appendix B. Within the footprint of the former East 17th Street Station, 22 surface soil samples and 1 duplicate sample were collected. Six of the soil samples were collected by GEI in 2006 and the remainder, along with the duplicate sample, were collected by H&A in 2004. Analytical data and summary statistics for the East 17th Street Station surface soil samples are presented in Table 5-2 and illustrated on Figure 5-1. As shown on Table 5-2, detected VOCs and non-carcinogenic PAHs

did not exceed their respective RSCOs and SSBVs. The maximum detected concentration of benzene was 0.027 mg/kg (17CY009), which is well below the NYSDEC RSCO of 0.06 mg/kg for benzene. Individual carcinogenic PAH concentrations in the surface soil samples were generally consistent across the site and slightly exceeded the individual RSCOs and/or SSBVs. The maximum BaP equivalent concentration (3.863 mg/kg) was detected in sample ST17SB02 as was the maximum total SVOC concentration (34.6 mg/kg). While the BaP equivalent concentration exceeds both the RSCO (0.061 mg/kg) and the SSBV (1.046 mg/kg), the total SVOC concentration falls well below the 500 mg/kg RSCO for total SVOCs.

As with the carcinogenic PAHs and metals concentrations detected in the surface soil samples collected from the former East 14th Street Station, those of the East 17th Street Station samples were compared to New England urban soil background levels and/or Eastern United States background values found in Appendix H – Table 1 due to the urban setting and historic use of this station site and adjacent properties. As previously reported by GEI, all the detected carcinogenic PAHs, as well as those metals exceeding their RSCOs and/or SSBVs, were found to be within the researched background concentration ranges.

### 5.1.3 Former East 19th Street Station Results

The remaining four surface soil samples collected from the holder sites within the Stuyvesant Town property were collected from the former East 19th Street Station site. Three samples were collected by H&A in 2004 with the final one (19GHSB01) being collected by GEI in 2006 (Figure 5-1). Analytical results and statistics for the East 19th Street Station surface soil samples are presented in Table 5-3.

The fill layer in this portion of the property extends to approximately 23 to 25 ft bgs and, as shown in Table 5-3, all detected VOCs and non-carcinogenic PAHs were below both the respective RSCOs as well as SSBVs for samples collected at this former holder station. The BaP equivalents concentrations within these samples ranged from 0.09977 mg/kg (14GH002) to 1.1041 mg/kg (19GH001). The sample taken at 19GH001 exceeded the BaP equivalents RSCO (0.061 mg/kg) as well as its SSBV (1.046 mg/kg). Total SVOC concentrations ranged from 1.178 mg/kg (19GH002) to 10.664 mg/kg (19GH001), which is well below the 500 mg/kg RSCO for total SVOCs.

As with the carcinogenic PAHs and metals concentrations detected in the surface soil samples collected from the other former holder stations, those of the East 19th Street Station samples were compared to New England urban soil background levels and/or Eastern United States background values found in Appendix H – Table 1 due to the urban setting and historic use of this station site and adjacent properties. As previously reported by GEI, all the detected carcinogenic PAHs, as well as those metals exceeding their RSCOs and/or SSBVs, were found to be within the researched background concentration ranges.

## 5.2 Subsurface Soils

To facilitate illustration of subsurface soil quality, the soil results are shown by depth: shallow soils (0.1-17 ft bgs), intermediate soils (17 ft bgs to native soil), and deep soils (native soil). Generalized analytical results are shown on Figures 5-2A, B, and C for shallow, intermediate, and deep soils, respectively. Figures 5-3A, B, and C present summaries of compounds that were detected at concentrations exceeding RSCO and/or SSBV by former holder station. Analytical data are presented in Tables 5-4 through 5-7 for East 14th Street, East 17th Street, East 19th Street Stations, and the First Avenue Loop road (soil boring AWW4SB01), respectively.

### 5.2.1 Former East 14th Street Station Results

In addition to the borings completed during the SC and IRI field activities, six borings were completed in and around the footprint of the former East 14th Street Station during the 2008 SRI field activities for delineation purposes. As previously reported by GEI, physical evidence of MGP-related impacts were observed below 10 ft bgs at SC and IRI borings adjacent to the former holder locations as illustrated on Figures 5-2A, B, and C. GEI and H&A generally observed impacts in soils from borings located along East 14th Street, south of the holders, with heavier MGP-related impacts including tar-saturated soils, being observed in isolated and

discrete depths within and immediately adjacent to the northernmost former gas holders. More specifically, these tar-saturated soils were observed between 24 and 28 ft bgs at boring 14GH004 and between 14 and 15 ft bgs at boring 14GH007. A single isolated tar-saturated lens was also present at location ST14SB06 from 25 to 26 ft bgs. This lens was interpreted by GEI as being associated with the former East 14th Street Works located to the east of Avenue C, based on the non-impacted soils along the western ROW of Avenue C (Figures 4-6, cross section E-E').

Petroleum-like impacts were observed in several perimeter investigation locations. Petroleum-coated soils were encountered at or near the water table at ST14SB05 (along East 14th Street) and as deep as 35 ft bgs within ST14SB01 (northwest corner of East 14th Street and Avenue C.) Petroleum-like, oil-coated, and stained soils were also encountered at sample location ST14SB06 within the Avenue C ROW (east side) and may be associated with historic petroleum releases.

During the SC, H&A sent three samples exhibiting high PID readings and/or gasoline-like or petroleum-like odors for fingerprint analysis. Samples from 14GH002 and 14GH009 were surface soil samples collected directly beneath the floor of the parking garage. These samples exhibited fingerprint patterns suggesting highly-weathered coal tar and/or motor-oil type contaminants. The other sample was collected from 14PH001 (13-15) and exhibited gasoline-like and petroleum-like odors. This sample showed chemical signatures consistent with #6 fuel oil (H&A, 2005).

In general, the highest concentrations of total VOCs and SVOCs detected in subsurface soil samples were associated with soils exhibiting observable MGP-related impacts. Total BTEX and PAH concentrations were the primary contributors to the total VOC and total SVOC concentrations found within the subsurface soil samples. Comparatively, those locations with MGP-type odors only or no apparent MGP-related impacts generally exhibited total VOC and SVOC concentrations at least one to two orders of magnitude below the 10 mg/kg and 500 mg/kg RSCO, respectively.

Concentrations of total VOCs and SVOCs in the vicinity of the gas holders ranged from non-detect to 1,177 mg/kg and 7,927 mg/kg, respectively. Within the Stuyvesant Town property, the highest concentrations of VOCs and SVOCs were detected in sample 14GH004 (24-26), which was within a tar-saturated lens. The highest total VOC and SVOC detections of 1,520 mg/kg and 15,213 mg/kg, respectively, were detected in sample ST14SB06 (24-25), also within a tar-saturated lens. According to GEI, due to the location of this boring and its location on the corner of East 15th Street and Avenue C, it is more likely that this impact is associated with the former East 14th Street Works rather than the former East 14th Street Holder Station located within the Stuyvesant Town property (GEI, 2007). RSCO and SSBV exceedances of individual VOC and SVOC concentrations in the East 14th Street Station subsurface investigation samples are shown on Figure 5-3A and detailed in Table 5-4.

Cyanide was not detected in the majority of the subsurface soil samples collected at the East 14th Street Station (Table 5-4). Detected cyanide concentrations ranged from 0.77 mg/kg to 56 mg/kg, which was detected in sample 14PH002 (5-7), and is above the SSBV concentration of 0.705 mg/kg.

Minimal impacts were observed in the delineation borings drilled during the 2008 SRI field activities. As shown on Figures 5-2A, B, and C, the only boring installed within the footprint of the former East 14th Street Station was ST14SB09. ST14SB09 was also the only boring in which visible impacts were observed at this former holder station during the 2008 SRI. As described in the boring log (Appendix B), staining was observed between 24.5 and 24.7 ft bgs and between 28.3 and 28.5 ft bgs and MGP-odor was noted between 24.5 and 28.5 ft bgs. In addition, petroleum-like odors were observed between 14 and 15 ft bgs. As summarized in Table 5-4 and illustrated on Figure 5-3A, four analytical samples were collected from boring ST14SB09. Total VOCs and total SVOCs were detected at concentrations exceeding the RSCO of 10 mg/kg and 500 mg/kg for these compounds, respectively, in the sample collected from 22 to 24 ft bgs, generally coincident with visible staining observed in boring ST14SB09. The majority of the VOCs detected included BTEX compounds and the majority of the SVOCs detected included PAH compounds. Cyanide was also detected at a concentration

exceeding the SSBV in the 22 to 24 ft bgs sample collected from boring ST14SB09. The remaining samples collected from boring ST14SB09 generally did not contain concentrations of VOCs, SVOCs, or cyanide exceeding RSCO or SSBV. West of boring ST14SB09 and outside of the footprint of the former holder station, boring ST14SB16 exhibited no odor or visible impacts. Subsurface soil samples collected from 22 to 24 ft bgs and 48 to 50 ft bgs from boring ST14SB16 did not contain concentrations of compounds above the RSCO or SSBV as summarized in Table 5-2 and illustrated on Figure 5-3A. Therefore, MGP-related impacts associated with the former East 14th Street Station are delineated to the west.

Two borings, ST14SB10 and ST14SB11, were completed on the south side of East 14th Street to delineate the southern extent of impacts observed at the East 14th Street Station. These borings could not be drilled closer to the southern boundary of the East 14th Street Station due to underground and surface obstructions/utilities and the Canarsie Subway line. Other than asphalt-like material noted from 10.4 to 12 ft bgs in boring ST14SB10, no visible impacts were observed on the south side of East 14th Street. A slight MGP-odor was observed between 19.2 and 19.4 ft bgs and petroleum-like odors were observed at boring ST14SB11 between 6 and 10 ft bgs. Subsurface soil analytical results for borings ST14SB10 and ST14SB11 are summarized in Table 5-4 and illustrated on Figures 5-2A, B, C, and 5-3A and show that no compounds were detected at concentrations exceeding the RSCO. Therefore, the MGP-related impacts associated with the former East 14th Street Station are delineated to the south.

The SRI work plan included the installation of two borings (ST14SB14 and ST14SB15) within the underground parking garage at the East 14th Street Station to evaluate the extent of NAPL observed from 24 to 24.5 ft bgs and 27 to 28 ft bgs in boring 14GH004. These borings could not be drilled due to access constraints. Two borings were drilled further east along Avenue C (ST14SB12) and north along the south side of the Avenue C Loop (ST14SB13) for delineation purposes as agreed with NYSDEC. No odors or visible impacts were observed in these two borings. Subsurface soil samples were collected from 24 to 28 ft bgs in both borings and from 44 to 48 ft bgs in ST14SB12 and 49 to 50 ft bgs in ST14SB13. As illustrated in Table 5-4 and on Figures 5-2C and 5-3A, no organic compounds or cyanide were detected at concentrations exceeding RSCO in the samples collected from these locations. Therefore, MGP-related impacts associated with the East 14th Street Station are delineated to the north and east.

Subsurface soil samples were collected below the deepest observed visible and analytical impacts at the majority of the boring locations associated with the East 14th Street Station except for borings within or immediately adjacent to the former holders, where shallow refusal was generally encountered (14GH007 through 14GH013). The analytical results for the deeper subsurface soil samples collected from borings outside of the holder structures illustrate that the vertical extent of soils containing concentrations of organic compounds exceeding the RSCO has been defined except at locations 14GH004, ST14SB01, and ST14SB05 as illustrated in Table 5-4 and Figure 5-3A. The concentrations of organic compounds detected in subsurface soils in boring 14GH004 decreased by at least two orders of magnitude with depth (total VOCs of 1,177 mg/kg at 24 to 28 ft bgs to total VOCs of 10.02 mg/kg at 28 to 30 ft bgs). Benzene was detected at estimated concentrations of 0.21 and 0.13 mg/kg in the deepest samples collected from borings ST14SB01 and ST14SB05. Data from borings drilled to the north and east of 14GH004 and ST14SB01 and to the south, west, and east of ST14SB05 provide delineation of these impacts. Bedrock was encountered between 45 and 85.5 ft bgs at the East 14th Street Station. Boring refusal, inferred to be the top of bedrock, was encountered at 41 and 44 ft bgs on the south side of East 14th Street. No visible MGP impacts were noted at the top of the bedrock surface or the bottom of the boreholes at locations where bedrock was encountered or inferred (ST14SB03, ST14SB04, ST14SB05, ST14SB09, ST14SB10 and ST14SB11). As summarized in Table 5-4, no compounds were detected at concentrations exceeding RSCO at the top of the bedrock/bottom of the borehole at these locations except for the estimated 0.13 mg/kg benzene reported for the 48 to 49 ft bgs sample collected from boring ST14SB05. Therefore, the vertical extent of MGP-related impacts at the former East 14th Street Station has generally been defined.

## 5.2.2 Former East 17th Street Station Results

According to IRI report, isolated intervals of tar staining and/or sheens were observed within the fill and organic deposits beneath the former holder locations and adjacent areas at the East 17th Street Station, particularly at locations 17CY006, 17GH006, and ST17SB04, as illustrated on Figures 4-2A, B, C, and 4-3. These impacts were generally within the soils between 26 and 29 ft bgs and visible impacts were often accompanied by naphthalene-like odors. Naphthalene-like odors were also noted within fill materials from several borings conducted in the vicinity of the former southernmost gas holder. To the east of the Avenue C Loop Road (downgradient of the holders), naphthalene odors were the only MGP-related impacts noted in subsurface soils.

Six boring locations showed evidence of possible purifier materials in the form of sporadic wood chips within the fill layer, between approximately 7 and 25 ft bgs: ST17SB03, ST17SB04, 17GH002, 17GH005, 17CY006, and 17CY007 (GEI, 2007a). According to the IRIR, it appears that these materials were potentially incorporated into the fill used for the development of the residential site and may have been whole or partially imported from other local fill sources during the property-wide grading operations that took place prior to construction of the apartment complex.

Staining and petroleum-like odors were observed in a number of borings within the former station footprint, as shown on Figures 4-2A, B, C, and 4-3. Petroleum-related impacts were observed at or near the water table near 17MWS04 and as deep as 32 ft bgs within the fill layer at ST17SB04. Four subsurface soil samples exhibiting petroleum-, gasoline-, or paint thinner-like odors, collected from within the fill layer, were sent for fingerprint analysis during H&A's 2004 SC. Fingerprint analysis of 17GH001 (17-19) indicated that the soils contained chemical signatures consistent with petroleum products similar to #2 or #4 fuel oil. Analysis of 17CY007 (14-16) indicated potential coal tar and/or motor oil contaminants present. Motor oil was also suspected contaminant source in sample 17MWS04 (2-4). Analytical results of the fingerprinting of sample 17CY010 (9-11) indicated the presence of #2 fuel oil and potentially low-level, weathered coal-tar residues.

During the 2008 SRI activities at the East 17th Street Station, two borings were drilled to evaluate the MGP impacts observed during the valve replacement activities (17WVSB01 and 17WVSB02) and two borings were drilled to further delineate MGP-related subsurface soil impacts observed at the former East 17th Street Station (ST17SB07 and ST17SB08). Boring ST17SB08 was drilled further south than desired due to subsurface utility and above grade structure interference. Analytical results for the subsurface soil samples collected at the East 17th Street Station during the SC, IRI, and SRI are summarized in Table 5-5 and illustrated on Figures 5-2A, B, C, and 5-3B.

As with the previous station results, those samples from the East 17th Street Station with the highest concentrations of total VOCs and SVOCs were associated with subsurface soils exhibiting observable MGP-related staining and/or sheen. In general, the total BTEX and PAH concentrations were the primary contributors to the total VOC and SVOC concentrations in these samples. Comparatively, those locations with MGP-type odors only or no apparent MGP-related impacts generally exhibited total VOC and SVOC concentrations at least one to two orders of magnitude below the 10 mg/kg and 500 mg/kg RSCOs, respectively.

Within the vicinity of the former gas holders, concentrations of total VOCs ranged from less than 1 mg/kg within fill samples collected at sample locations 17GH001 through 17GH006 and ST17SB01 through ST17SB03 to 1,148.583 mg/kg at ST17SB04 (Table 5-5). Boring ST17SB08 was drilled to delineate the extent of the pockets of tar-like material (TLM) noted in the boring log for 17GH001 from 15.2 to 15.3, 15.9 to 16.2, and 21 to 27 ft bgs. No visible impacts were noted in boring ST17SB08 however, an MGP odor was noted between 4.5 and 5 ft bgs. Subsurface soil samples collected from 14 to 16, 22 to 26, and 32 to 36 ft bgs from ST17SB08 did not contain concentrations of organic compounds above RSCOs. The high VOC concentration in sample ST17SB04 (27-29) was collected from within a tar-stained fill interval. The only other exceedance of the 10 mg/kg RSCO for total VOCs was from sample 17CY006 (25-25.5), which yielded a total



VOC concentration of 39.48 mg/kg and was also collected from a tar-stained interval. Boring ST17SB07 was drilled to the east of boring 17CY006 to delineate the extent of impacts noted in 17CY006. Stain was observed in boring ST17SB07 between 14 and 14.6 ft bgs and 31.05 and 31.3 ft bgs. Accompanying this staining was a slight MGP-like odor from 26 to 28 ft bgs and from 31.05 to 31.3 ft bgs. The analytical sample collected from 26 to 28 ft bgs in boring ST17SB07 did not contain total VOCs exceeding the RSCO of 10 ppm, although benzene was detected at a concentration of 0.26 mg/kg (slightly above the 0.06 mg/kg RSCO). Apart from the two previously mentioned samples, all other SC, IRI, and SRI subsurface soil samples from within and adjacent to the former East 17th Street Station footprint had total VOC concentrations below the 10 mg/kg RSCO.

Total SVOC concentrations ranged from non-detect to a maximum of 2,253 mg/kg (17GH005 (27-27.8)) at the former East 17th Street Station. This boring was located within the former southernmost gas holder, and the sample exhibited heavy tar-like staining. The only other sample exceeding the 500 mg/kg RSCO for total SVOCs was ST17SB04 (27-29), which had a concentration of 887 mg/kg. The subsurface soil samples collected from 22 to 26 and 32 to 36 ft bgs in boring ST17SB08 to the southeast of ST17SB04 did not contain concentrations of SVOCs exceeding RSCOs. Apart from the two previously mentioned samples, all other SC, IRI, and SRI subsurface soil samples from within and adjacent to the former East 17th Street Station footprint had total SVOC concentrations below the 500 mg/kg RSCO.

RSCO and SSBV exceedances of individual VOC and SVOC concentrations in the East 17th Street Station subsurface investigation samples are illustrated on Figures 5-2A, B, C and 5-3B. As previously discussed in the IRI report, individual compound exceedances of PAHs were reported in shallow fill materials within and adjacent to the former station footprint and within the above-mentioned intervals of observed MGP-related impacts. Individual compound exceedances of BTEX were confined to discrete intervals of observed MGP-related impacts below 20 ft bgs. Additionally, a number of metals not associated with MGP operations were detected above the RSCOs and SSBVs in both the fill and native overburden horizons beneath the site and site perimeter.

Cyanide was not detected in the majority of the subsurface soil samples analyzed from the East 17th Street Station site. Analytical data are available in Table 5-5. The eleven detections of cyanide ranged from 0.891 mg/kg (ST17SB04 (2-4)) to 96 mg/kg (ST17SB04 (27-29)). These concentrations are above the SSBV of 0.705 mg/kg for cyanide (Figure 5-3B). Arsenic concentrations ranged from non-detect to 21.5 mg/kg (17CY008 (2-4)), which exceeded the RSCO of 7.5 mg/kg and the SSBV of 13.63 mg/kg.

Boring 17WVSB01 was proposed to evaluate subsurface soil quality where MGP-type odors and staining were noted at 10 to 12 ft bgs in water valve excavation 14 (see Figure 5-2A) and to evaluate the southern extent of soil impacts noted in borings ST14SB04 and 17GH001. This boring was drilled to a depth of 8 ft bgs where refusal on a water main was encountered. Visible impacts were not noted in 17WVSB01 however an MGP odor was noted from 4 to 5 ft bgs. No subsurface soil samples were collected for laboratory analysis from 17WVSB01. Boring 17WVSB02 was drilled to evaluate the subsurface soil quality where MGP-type odors and staining were noted at 10 to 13 ft bgs in water valve excavations 9 through 12. Gray staining was observed in 17WVSB02 between 13.2 and 14.1 ft bgs and between 16 and 20 ft bgs. A naphthalene-like odor was observed between 20 and 24 ft bgs in this boring. Subsurface soil samples were collected from 10 to 13, 20 to 23.5, and 28 to 30 ft bgs from boring 17WVSB02. No organic compounds were detected above the RSCO in the soil samples collected from 17WVSB02 except acetone (0.51 mg/kg at 20 to 23.5 ft bgs) and benzo(a)pyrene (estimated 0.11 mg/kg at 20 to 23.5 ft bgs). The sample collected between 10 and 13 ft bgs at boring 17WVSB02 did not contain arsenic, total cyanide, total VOC, or total SVOC concentrations above their respective RSCOs (Table 5-5). No significant MGP-related impacts were observed or detected analytically between 10 and 13 ft bgs in the vicinity of water valve excavations 9 through 12.

### 5.2.3 Former East 19th Street Station Results

Physical impacts observed in the subsurface at the East 19th Street Station during the SC included a piece of solid TLM encountered between 16 and 17 ft bgs in boring 19GH003 and slight petroleum/bituminous odors from 9 to 11 ft bgs in boring 19GH001. No MGP-related impacts such as tar-blebs, staining, or sheen were noted during the SC or IRI activities. Figure 4-4 illustrates the subsurface of the East 19th Street Station. Three borings were advanced during the 2008 SRI field activities outside the footprint of the former East 19th Street Station site to evaluate MGP-type impacts noted during excavation efforts at water excavations A and 24 through 27 and at hydrant valve excavation 17 (see Figure 5-2A). Some staining along with a hydrocarbon-like odor was noted from 4.6 to 5.3 ft bgs in boring 19WVSB01 which was drilled near valve excavation A and hydrant excavation 17. Hydrocarbon odor was also noted from 8.2 to 9.2 ft bgs and a fuel odor was noted from 13 to 16 ft bgs in 19WVSB01. Subsurface soil samples collected from 4 to 8 and 12 to 16 ft bgs from boring 19WVSB01 did not contain organic compounds exceeding their RSCOs except for an estimated concentration of 0.1 mg/kg benzo(a)pyrene in the the 4 to 6 ft bgs sample. Boring 19WVSB02 was drilled in the vicinity of valve excavations 24 through 27. Oil like material (OLM), sheen, and staining were encountered from 9.5 to 10.7 ft bgs along with a fuel like odor from 8.7 to 10.7 ft bgs in boring 19WVSB02. Additional fuel-like odor and staining and some sheen were also noted between 13.3 and 16.6 ft bgs in boring 19WVSB02. Subsurface soil samples were collected from 8 to 10 and 10 to 12 ft bgs in boring 19WVSB02. These samples did not contain concentrations of organic compounds exceeding RSCOs. No visible impacts or odors were noted in boring 19WVSB03. Based on these observations and analytical results, the borings drilled to evaluate MGP-related impacts reported at valve excavations did not encounter significant MGP impacts.

As shown on Table 5-6 and Figures 5-2A, B, C, and 5-3C, the highest concentrations of total VOCs and SVOCs, and total BTEX and PAHs, respectively, were generally present in the more shallow fill material. Total VOC and total SVOC concentrations within the subsurface samples were at least one order of magnitude below the 10 mg/kg RSCO for total VOCs and 500 mg/kg RSCO for total SVOCs, as shown on Figures 5-2A, B, and C. No detected VOCs exceeded either the RSCOs or SSBVs in any of the subsurface soil samples. Concentrations of individual PAH compounds and some metals exceeded the established RSCOs and/or SSBVs within shallow fill material at or adjacent to the former station footprint, however cyanide was not detected within the subsurface soils at the East 19th Street Station site.

### 5.2.4 First Avenue Loop Road Results

A single boring was advanced along the First Avenue Loop Road in order to investigate possible MGP-related impacts noted at 10.5 ft bgs in water valve excavation number 31. Boring A4WVSB01 was completed to 20 ft bgs and two subsurface soil samples were collected from 8 to 12 ft bgs and 16 to 20 ft bgs for laboratory analysis. No odors or visible impacts were encountered during drilling (see boring log in Appendix B), unlike the water valve report, which indicated MGP-related impacts in the vicinity. Those MGP-related impacts could not be confirmed during SRI fieldwork. Analytical results for the subsurface soil samples collected from A4WVSB01 are presented in Table 5-7.

The only detected VOC was trichloroethene, which was detected in sample A4WVSB01 (16-20) at a concentration of 0.055 mg/kg, exceeding the SSBV of 0.00021 mg/kg. Total VOCs were non-detect in the sample from 8 to 12 ft bgs and 0.055 mg/kg in the sample from 16 to 20 ft bgs. Total SVOCs were detected at concentrations of 0.155 mg/kg (8-12 feet bgs) and 0.982 mg/kg (16-20 feet bgs). Cyanide was not detected in either sample and arsenic was detected at a concentration of 3.45 mg/kg in sample A4WVSB01 (8-12) and at a concentration of 0.898 mg/kg in sample A4WVSB01 (16-20). Both of these concentrations are well below the SSBV of 13.63 mg/kg for arsenic.

## 5.3 Groundwater

As previously discussed, 29 wells were used in the groundwater investigation of the former station sites within Stuyvesant Town. These wells are screened in three groundwater zones (shallow, intermediate, and deep zones) of the Upper Glacial Aquifer underlying the Stuyvesant Town property. Two monitoring wells were

installed prior to 2004, fourteen monitoring wells were installed by H&A during the SC field activities in 2004, and the remaining thirteen wells were installed by GEI during IRI activities in 2006. No new monitoring wells were installed during the 2008 SRI field activities (Table 3-2). Monitoring well locations and the target compound exceedance summary are illustrated on Figures 5-4A and B. Figure 5-5A illustrates the background groundwater analytical exceedances. Groundwater analytical results for 2004, 2006, and 2008 are summarized on Tables 5-8 (background wells), 5-9 (East 14th Street Station), 5-10 (East 17th Street Station), and 5-11 (East 19th Street Station). Figures 5-5B, C, and D illustrate analytical exceedances at the former East 14th Street, East 17th Street, and East 19th Street Stations, respectively.

### 5.3.1 Background Groundwater Results

Two monitoring well clusters served as background monitoring wells for the former holder stations located within the Stuyvesant Town property: 00MWS06, 00MWD06 and 00MWS07, 00MWD07. These background wells were sampled during all three phases of investigation (2004, 2006, and 2008). All four monitoring wells were sampled for VOCs, SVOCs, total metals, and total and amenable cyanide during all three rounds of sampling. Samples were analyzed for dissolved metals in 2006. Groundwater analytical results for the background wells are provided in Table 5-8 and illustrated on Figures 5-4A and B and 5-5A.

#### 5.3.1.1 Shallow Zone

The two shallow zone wells (00MWS06 and 00MWS07) are screened between 4.06 to -5.94 ft NAVD88 and 7.25 to -2.75 ft NAVD88, respectively, within the sand and silty sand layer. Analytical data is presented in Table 5-8. The only VOC detected above its respective NYSDEC Ambient Water Quality Standards or Guidance Value (AWQSGV) was chloroform, which was detected at a concentration of 14 ug/L during the 2008 sampling event. The AWQSGV for chloroform is 7 ug/L. No other VOCs or SVOCs were detected above their AWQSGVs in the shallow wells.

Three dissolved metals (magnesium, manganese, and sodium) were detected above their respective AWQSGVs (35,000, 300, and 20,000 ug/L) during the 2006 sampling event in monitoring well 00MWS06. They were detected at concentrations of 48,700J ug/L, 977J ug/L, and 654,000 ug/L. Iron, manganese, and sodium were detected with total metal analysis at concentrations exceeding their AWQSGVs (300, 300, and 20,000 ug/L, respectively) in both of the shallow monitoring wells. Concentrations for total iron ranged from 671J ug/L to 11,700 ug/L. Concentrations for total manganese ranged from 452 ug/L to 1,610 ug/L and concentrations for total sodium ranged from 36,000 ug/L to 678,000J ug/L. Total and amenable cyanide, as well as other inorganics, were not detected above their appropriate AWQSGVs in the shallow background monitoring wells.

#### 5.3.1.2 Intermediate Zone

The two background monitoring wells screened in the intermediate aquifer zone were designated 00MWD06 and 00MWD07. They were screened from -10.54 to -20.54 ft NAVD88 (00MWD06) and from -8.27 to -18.27 ft NAVD88 (00MWD07) within the glacial lacustrine sand and clay layer.

Benzene was detected in concentrations above the NYSDEC AWQSGV of 1 ug/L in monitoring well 00MWD06 in both 2004 and 2008, as shown in Table 5-8. No other BTEX compounds were detected in any of the background wells. Other VOCs detected above their respective AWQSGVs include cis-1,2-dichloroethene (AWQSGV 5 ug/L), which was detected in 00MWD06 during each round of sampling with concentrations ranging from 5.4 ug/L to 18 ug/L. No non-carcinogenic PAHs were detected above the appropriate AWQSGV in the background wells, however the carcinogenic PAH, benzo(a)anthracene, was detected during the 2008 sampling event at a concentration of 0.020J ug/L, which is above the AWQSGV of 0.002 ug/L. No other carcinogenic PAHs were detected above the AWQSGVs, nor were any other SVOCs.

Groundwater samples from the background wells were also analyzed for dissolved metals during the 2004 and 2006 sampling events. In addition, these wells were analyzed for total metals during all three sampling events.

Dissolved iron was detected above the AWQSGV (300 ug/L) at a concentration of 305 ug/L in 00MWD06 during the 2006 sampling event. Dissolved sodium, AWQSGV 20,000 ug/L, was detected at a concentration of 67,300 ug/L in monitoring well 00MWD07 during the 2006 sampling event. Total iron and sodium were also detected in concentrations above their AWQSGVs in monitoring wells 00MWD06 and 00MWD07 during all three sampling events. Concentrations of total iron ranged from 307 ug/L to 963J ug/L and concentrations of total sodium ranged from 41,600 ug/L to 117,000 ug/L. Total manganese was only detected above its AWQSGV in monitoring well 00MW07 and the concentrations exceeding the standard ranged from 418 ug/L to 838 ug/L.

### 5.3.2 Former East 14th Street Station Results

During the RI, as well as previous investigations, groundwater was collected from two monitoring well clusters located within the footprint of the former East 14th Street Station, as well as two monitoring well clusters located east of the footprint along the eastern side of Avenue C (Figures 5-4A and B). Monitoring wells 14MWS01, 14MWD01, 14MWDD01, 14MWS02, 14MWD02, and 14MWDD02 are located within the footprint of the former holder station. Monitoring wells MW-36, 14MWDD03, MW10, 14MWD05, and 14MWDD05 are located on the east side of Avenue C, outside of the footprint of the former holder station. Well construction details are outlined in Table 3-2. As previously mentioned, monitoring well 14MWD02 was not sampled during the 2006 or 2008 RI activities due to the presence of NAPL within the well.

#### 5.3.2.1 Shallow Zone

As presented in Table 5-9 and on Figures 5-4A, B and 5-5B, several BTEX and PAH compounds exceeded the NYSDEC AWQSGVs. In the vicinity of the former holders, the total VOC concentrations have continued to decrease from 2004 to 2006 while the total SVOC concentrations have increased over the past two years in monitoring well 14MWS02. As previously reported, monitoring well 14MWS02 was installed in 2004 by H&A and was screened across soils exhibiting gasoline and petroleum odors characteristic of #6 fuel oil thereby suggesting that the shallow zone groundwater is influenced by non-MGP-related sources.

Downgradient of the former holders at 14MWS01, total VOC concentrations (predominantly benzene) increased from 3.7 ug/L to 10 ug/L between 2004 and 2008. Total SVOC concentrations increased from 0.4 ug/L to 4.2 ug/L between 2004 and 2006, and subsequently decreased to 0.257 ug/L in the 2008 sampling event. Although the data show some fluctuation at 14MWS01, concentrations of total VOCs and SVOCs remained higher at 14MWS02 than at 14MWS01 during all three events (Table 5-9).

Further downgradient monitoring wells MW-10 and MW-36 were not sampled by H&A during SC field activities in 2004, however they were sampled by both GEI and AECOM during the subsequent 2006 and 2008 RI field events. During the 2006 GEI groundwater sampling event, only a trace detection (estimated 0.4 ug/L) of xylene was present within the groundwater at MW-10. No other BTEX or VOCs were detected in that well during the 2006 event, nor were they detected during the 2008 RI field activities. The only SVOC detected in the groundwater collected from MW-10 2006 was bis(2-ethylhexyl)phthalate, which was detected at a concentration of 2.1J ug/L. During the 2008 sampling event, trace amounts of acenaphthene, fluoranthene, and pyrene were detected in the groundwater sample collected from MW-10 for a total SVOC concentration of 1.89 ug/L.

No BTEX compounds were detected in MW-36 during either of the sampling events, however trace concentrations of MTBE and non-carcinogenic PAHs were detected in the samples from MW-36. Some carcinogenic PAHs were also detected at concentrations exceeding AWQSGV in the groundwater collected from MW-36 in 2006 and 2008. Concentrations of compounds detected in groundwater on the east side of Avenue C may also be associated with impacts at the East 14th Street Works site.

Across the three sampling events, total cyanide concentrations ranged between non-detect at MW-10 to 91 mg/L at 14MWS01 (2008 result), which is below the established AWQSGV of 200 mg/L. Total arsenic was

detected at concentrations ranging from non-detect to 6.2 ug/L (2004 result) at 14MWS02, historically, also below the applicable standard of 25 ug/L. In 2008, total arsenic was not detected at 14MWS02 (Table 5-9). Iron, manganese, and sodium were the only metals detected at concentrations exceeding the AWQSGV in the shallow zone groundwater beneath the East 14th Street Station. These metals are not considered to be associated with the former MGP station operations. Lead was detected at concentrations exceeding the AWQSGV in groundwater collected from MW-36 on the east side of Avenue C during the 2006 and 2008 sampling events.

### 5.3.2.2 Intermediate Zone

As presented in Table 5-9 and on Figures 5-4A, B and 5-5B, several BTEX and PAH compounds exceeded the NYSDEC AWQSGV in groundwater samples collected from intermediate zone wells. In 2004, total VOCs and total SVOCs were generally present at the highest concentrations in monitoring well 14MWD02 which is located on the south side of the former gas holders and decreased in concentration in the downgradient intermediate zone well to the southeast (14MWD01). NAPL was observed in monitoring 14MWD02 during the 2006 and 2008 groundwater sampling events. Approximately one foot of NAPL was measured in monitoring well 14MWD02 during the 2008 groundwater sampling event. Due to the presence of NAPL in monitoring well 14MWD02 at the site, Con Edison directed AECOM to develop the Interim Remedial Measure Work Plan for NAPL Monitoring and Recovery (IRMWP) at the site. This work plan was finalized and submitted to NYSDEC in December 2008, and is considered to be part of the SMP.

The greatest groundwater VOC and SVOC concentrations were detected in the sample collected immediately downgradient of the former holders at 14MWD01 and exceeded AWQSGV and decreased in concentration to levels below the AWQSGV in downgradient monitoring well 14MWD05. Groundwater VOC concentrations increased in monitoring well 14MWD01 between 2004 and 2008. Groundwater SVOC concentrations increased between 2004 and 2006 and decreased between 2006 and 2008 in monitoring well 14MWD01. Groundwater collected from monitoring well 14MWD05 did not contain VOCs or SVOCs at concentrations exceeding AWQSGVs in the 2006 or 2008 groundwater sampling events.

Cyanide was detected at concentrations exceeding the AWQSGV in groundwater collected from monitoring well 14MWD01 and 14MWD05 in 2008. Iron, magnesium, manganese, and sodium were the only metals detected at concentrations exceeding the AWQSGV in the intermediate zone groundwater beneath the East 14th Street Station. These metals are not considered to be associated with former MGP station operations.

### 5.3.2.3 Deep Zone

The deep zone groundwater analytical results for the East 14th Street Station are presented in Table 5-9 and on Figures 5-4A, B and 5-5B. Several BTEX and PAH compounds exceeded the NYSDEC AWQSGVs. Similar to the shallow and intermediate zones, the greatest concentrations of VOCs and SVOCs were detected in groundwater in the vicinity of the former holders (14MWDD02) and generally decreased downgradient to the east (in monitoring wells 14MWDD01, 14MWDD03, and 14MWDD05). Concentrations of compounds detected in monitoring well 14MWDD03 may also be associated with the former East 14th Street Works site on the east side of Avenue C. The concentrations of VOC and SVOC compounds in the deep monitoring wells are relatively consistent between 2006 and 2008, although there was an order of magnitude decrease in total SVOCs concentrations in monitoring well 14MWDD03.

Cyanide was detected in the groundwater sample collected from 14MWDD02 in 2008 at a concentration above the AWQSGVs. No other groundwater samples collected from the deep zone beneath the East 14th Street Station contained concentrations of cyanide exceeding the AWQSGV. Iron, manganese, and sodium were the only metals detected at concentrations exceeding the AWQSGV in the deep zone.

### 5.3.3 Former East 17th Street Station Results

Groundwater was collected from four well clusters within and around the former East 17th Street Station during both phases of RI work at the Stuyvesant Town property. Two well clusters (17MWS03, 17MWD03, and 17MWDD03 and 17MWS04, 17MWD04, and 17MWDD04) are located within the former holder station while the other two well clusters (17MWS05, 17MWD05, and 17MWDD05 and 17MWS06, 17MWD06, and 17MWDD06) are located within the ROW of Avenue C to the east-southeast of the former station holders. In addition, monitoring wells 17MWS03, 17MWD03, 17MWS04, and 17MWD04 were sampled during the SC work completed in 2004 by H&A. The monitoring well locations can be seen on Figures 5-4A, B, and 5-5C. Analytical data from all three sampling events, including statistics, is presented in Table 5-10. A summary of the June 2006 sampling event is shown on Figure 5-4A, a summary of the August – September 2008 sampling event is shown on Figure 5-4B and a summary of detected compounds exceeding regulatory standards for the sampling events is shown on Figure 5-5C.

#### 5.3.3.1 Shallow Zone

Table 5-10 provides analytical data for all groundwater samples taken during SC and RI activities at and around the former East 17th Street Station site. Total VOC and SVOC concentrations for groundwater samples collected from the shallow aquifer zone within and adjacent to the former East 17th Street Station were greater downgradient of the former holders at 17MWS03 and 17MWS04 and decreased downgradient to the east at 17MWS05 and 17MWS06. The greatest total VOC concentration (165.3 ug/L) detected in the shallow zone was detected in the groundwater sample collected from monitoring well 17MWS03 in 2008. The greatest total SVOC concentration (81.9 ug/L) detected in the shallow zone was detected in monitoring well 17MWS04 in 2004. The detected concentrations of compounds are relatively consistent between 2004 and 2008 except for the decrease in total SVOCs in monitoring well 17MWS04. Cyanide was not detected at concentrations exceeding the AWQSGV in any of the groundwater samples collected from the shallow zone wells at the East 17th Street Station. The only metals detected at concentrations exceeding AWQSGV in groundwater samples from shallow zone wells at the East 17th Street Station were iron, magnesium, manganese, and/or sodium except for lead and mercury detected in the groundwater sample collected from 17MWS04 in 2004.

#### 5.3.3.2 Intermediate Zone

As shown in Table 5-10 and Figures 5-4A, B, and 5-5C, several compounds were detected in intermediate zone groundwater at concentrations exceeding their respective AWQGSV. In general, the greatest concentrations of VOCs and SVOCs were detected in the groundwater sample collected from 17MWD04 located immediately downgradient of the southernmost holder and decreased in concentration downgradient and to the east in groundwater samples collected from 17MWD03, 17MWD05, and 17MWD06. These results differ slightly from the shallower zone in that the greatest concentrations were detected in groundwater samples collected from the 17MWD04 well cluster rather than the 17MWD03 well cluster. Concentrations of VOCs and SVOCs have decreased over time in groundwater from 17MWD03 and 17MWD04 between 2004 and 2006 but remained relatively consistent between 2004 and 2006. VOC concentrations in groundwater at 17MWD05 are consistent between 2006 and 2008 however the SVOC concentrations decreased between 2006 and 2008. The VOC and SVOC concentrations in groundwater from 17MWD06 have been consistent and low to non-detect between 2006 and 2008. The organic concentrations in the intermediate zone groundwater samples are generally greater than the organic concentrations in the shallower zone.

Cyanide was only detected above the AWQSGV in one groundwater sample collected from the intermediate zone monitoring wells at the East 17th Street Station (17MWD04 in 2008) at a concentration of 493 mg/kg. The only metals detected at concentrations exceeding the AWQSGV in groundwater samples from the intermediate zone wells at the East 17th Street Station were iron, magnesium, manganese, and sodium except for lead detected in the groundwater sample collected from 17MWD05 in 2006 and 2008.

### 5.3.3.3 Deep Zone

The analytical data for the deep groundwater aquifer zone are presented in Table 5-10 and illustrated on Figures 5-4A and B and 5-5C. Similar to the shallow and intermediate zones, the highest VOC concentrations in groundwater were detected adjacent to and downgradient of the former holders in monitoring wells 17MWDD04 and 17MWDD03 and decreased in concentrations further east and downgradient in monitoring wells 17MWDD05 and 17MWDD06. Total SVOC concentrations were relatively low (generally less than 2 ug/L) in the groundwater samples collected from the deep zone wells except for the sample collected from monitoring well 17MWD06 in 2006 (contained a total SVOC concentration of 26 ug/L). The organic compound concentrations were generally consistent between the 2006 and 2008 sampling events except for the decrease in total SVOCs from 36 ug/L to 3 ug/L in the groundwater samples collected from 17MWDD06. The organic compound concentrations in the deep zone groundwater were similar to the concentrations in the shallow zone groundwater and less than the concentrations in the intermediate zone groundwater. Cyanide was not detected at concentrations exceeding the AWQSGV in any of the groundwater samples collected from the deep zone monitoring wells at the East 17th Street Station. The only metals detected at concentrations exceeding the AWQSGV in groundwater samples from the deep zone wells at the East 17th Street Station were iron, magnesium, manganese, and sodium.

### 5.3.4 Former East 19th Street Station Results

Groundwater was collected from a shallow monitoring well (19MWS05) and an intermediate monitoring well (19MWD05) during the SC in 2004 and during both rounds of RI activities. These wells are located adjacent to the former East 19th Street Station, as shown on Figures 5-4A and B and 5-5D. The analytical results from all three groundwater sampling events are presented in Table 5-11.

#### 5.3.4.1 Shallow None

As previously stated by GEI in the 2006 IRIR, the groundwater at the former East 19th Street Station does not appear to be impacted by MGP residuals. In 2004, low levels of BTEX were detected in the sample taken from 19MWS05, however in 2006 and 2008, BTEX were not detected in groundwater collected from this well. Total VOCs were also not detected during these last two rounds of sampling. Total SVOCs were initially detected at a concentration of 13.1 ug/L in 2004 and most recently were detected at a concentration of 0.034 ug/L. Cyanide was not detected within the groundwater samples during any of the sampling events. Arsenic was detected in 2004 at a concentration of 7.4 ug/L, which is well below the AWQSGV of 25 ug/L, and has not been detected in this well since. The only metals detected in the shallow groundwater at concentrations exceeding the AWQGSV were iron, magnesium, manganese, and sodium except for the detection of lead in the 2004 groundwater sample.

#### 5.3.4.2 Intermediate Zone

BTEX have not been detected in the intermediate groundwater zone in this area of the Stuyvesant Town property and total VOC concentrations have ranged from 4.1 ug/L in 2004 to 10 ug/L in 2008. The only detected VOC, cis-1,2-dichloroethene, was detected at a concentration of 10 ug/L, exceeding its AWQSGV of 5 ug/L. Total SVOCs were initially detected at a concentration of 0.8 ug/L and have most recently been detected at a concentration of 0.16 ug/L. Neither cyanide nor arsenic was detected within the groundwater samples during any of the sampling events. The only metals detected in the intermediate groundwater at concentrations exceeding the AWQGSV were iron, magnesium, manganese, and sodium.

## 5.4 Indoor Air and Soil Gas

Indoor air sampling was performed in the following buildings: 522 East 20th Street, 16 Stuyvesant Oval, 245 Avenue C, and 615, 625, 629, 635, and 645 East 14th Street during the IRI. In addition, air quality within all Stuyvesant Town buildings was investigated in 2007 on behalf of the Owners; these data have not been reviewed by Con Edison or NYSDEC and are not presented in this report.

The analytical results for the indoor air samples and soil gas samples collected during the IRI were compared to applicable New York State standards. As previously stated, no indoor air or soil gas samples were collected during the 2008 SRI and therefore, the data presented below has been summarized from the IRIR (GEI, 2007a).

Compounds detected in air and soil gas samples were compared to the 2004 NYSDOH study, *Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003*, (NYSDOH Air Study). Additionally, results from ambient air samples collected from Stuyvesant Town, presented in Table 5-12, were used to evaluate the soil gas in comparison with standard urban air quality.

Four ambient air samples were taken by GEI in 2006 to duplicate those taken by RETEC in 2003 however the results for only two samples were provided in the IRIR report. The data in Table 5-12 is for two of the initial ambient air samples taken in 2003 (STY-AMB-3 and STY-AMB-4) and two of the four samples taken in 2006 (AMB-2 and AMB-4). STY-AMB-2, STY-AMB-4, and AMB-4 were taken within the footprint of the former East 14th Street Station. STY-AMB-1 and STY-AMB-3 were taken within the footprint of the former East 19th Street Station. There were no ambient air samples taken at the former East 17th Street Station.

#### 5.4.1 Former East 14th Street Station Results

RETEC and GEI collected indoor air samples from crawl spaces, stairwells, and other interior areas within six buildings within the footprint of the former East 14th Street Station site in 2003 and 2006, respectively. GEI sample locations were set to duplicate those of RETEC to the extent practicable. Sample locations are shown in Figure 2-4 and analytical data is presented in Table 5-13.

Benzene concentrations in the indoor air samples ranged from non-detect to 13 ug/m<sup>3</sup> for all 15 samples collected. The NYSDOH Air Study's 75th percentile for benzene is 13 ug/m<sup>3</sup>. The other BTEX compounds found in both the RETEC and GEI air samples were only slightly above the NYSDOH Air Study's 75th percentile and were at or below the study's 95th percentile with only a few exceptions. Comparatively, the concentration of benzene within soil gas samples collected beneath or adjacent to the sampled buildings ranged from non-detect to 150 ug/m<sup>3</sup>. Toluene, ethylbenzene, and xylenes were typically detected in soil gas samples at concentrations at least one order of magnitude higher than those reported in the indoor air samples.

Compounds present in soil gas at significant concentrations were generally absent in indoor air samples. Carbon disulfide was detected in soil gas samples at concentrations ranging from 9 ug/m<sup>3</sup> to 746 ug/m<sup>3</sup>, however the compound was only detected in 2 indoor air samples and at a maximum concentration of 8 ug/m<sup>3</sup>. Cyclohexane was detected at concentrations ranging from 7 ug/m<sup>3</sup> to 230 ug/m<sup>3</sup> in soil gas samples, however was not detected in any of the indoor air samples taken. Concentrations of gasoline-related additives, including MTBE, found in soil gas were generally up to three orders of magnitude greater than respective concentrations in indoor air samples, when detected. Thus when comparing the soil gas and indoor air samples at the former East 14th Street Station, it appears that the indoor air more closely resembles the ambient air (Table 5-13) in chemical constituents and concentrations than it does the subsurface soil gas.

#### 5.4.2 Former East 17th Street Station Results

Three indoor air and one soil gas sample were taken at the former East 17th Street Station site by RETEC in 2003. Six soil gas samples were collected in 2006 by GEI in this area of the Stuyvesant Town apartment complex. The sample locations are shown on Figure 2-4. Analytical data is provided in Table 5-13.

There were BTEX compounds, acetone, ethanol, and a few other compounds were detected in the indoor air samples. The concentration of benzene ranged from 3 ug/m<sup>3</sup> to 4 ug/m<sup>3</sup>, which is below the NYSDOH Air Study's 75th percentile for benzene (13 ug/m<sup>3</sup>). The only individual BTEX compound detected at concentrations slightly above its NYSDOH Air Study 75th percentile concentration was m, p-xylene, which was



detected at  $6.9 \text{ ug/m}^3$  in sample STY-1A-2E17. Although this value is above the 75th percentile, it is still below the 95th percentile concentration of  $11 \text{ ug/m}^3$ . Of the VOCs detected in the indoor air samples, ethanol had the highest concentration ( $1,100 \text{ ug/m}^3$ ) in STY-1A-2E17. This concentration is above the NYSDOH Air Study's 75th percentile of  $540 \text{ ug/m}^3$ , however it is less than the 95th percentile concentration of  $1,300 \text{ ug/m}^3$ . Chloroform, chloromethane, 1,4-dichlorobenzene, and dichlorodifluoromethane were all detected in sample STY-1A-2E17 at concentrations greater than their respective 95th percentile concentrations. The chemicals present and concentrations detected during the 2003 indoor air sampling event are similar to those within the ambient air samples collected during that study. (GEI, 2007a)

The seven soil gas samples taken at the former East 17th Street Station site contained many of the same compounds as were found in the indoor air samples, however the concentrations were variable and two of the soil gas samples were found not to contain any ethylbenzene or xylenes, though the concentrations of BTEX compounds were generally found to be higher in the soil gas samples than in the indoor air samples. Benzene concentrations ranged from  $5 \text{ ug/m}^3$  to  $191.4 \text{ ug/m}^3$  in the soil gas samples with the highest concentration found in sample ST17SV01. Carbon disulfide, cyclohexane, heptane, and MTBE were some of the compounds detected in the soil gas samples that were not reportedly detected in indoor air.

### 5.4.3 Former East 19th Street Station Results

Indoor air was not sampled as part of GEI's 2006 IRI field activities, however two indoor air samples were collected by RETEC in 2003. Sample locations are shown on Figure 2-4 and analytical results are presented in Table 5-13. In addition to the two indoor air samples (STY-1A-1E19 CRAWL and STY-1A-2E19 STAIRS) in this area, RETEC took one soil gas sample (SG-1-E19) in 2003. In 2006, GEI took one soil gas sample (ST19SV01), which was co-located with the previous sample location.

Benzene was detected below the NYSDOH Air Study's 75th percentile of  $13 \text{ ug/m}^3$  in both indoor air samples, however m, p-xylenes were detected at concentrations of  $8.6 \text{ ug/m}^3$  in the crawlspace sample and  $8.2 \text{ ug/m}^3$  in the stairwell sample. These concentrations are above the NYSDOH Air Study's 75th percentile concentration of  $4.6 \text{ ug/m}^3$  for this compound, however they are below the 95th percentile concentration of  $11 \text{ ug/m}^3$ . Concentrations of other VOCs ranged from non-detect to a maximum concentration of  $370 \text{ ug/m}^3$  for acetone detected in the stairwell sample. This is well above the NYSDOH Air Study's 95th percentile concentration of  $115 \text{ ug/m}^3$ . Other VOCs detected in indoor air samples include chloroform, 1, 3-dichlorobenzene, tetrachloroethene, and 1, 2, 4-trimethylbenzene. In addition, naphthalene was detected in the crawlspace sample at a concentration of  $18 \text{ ug/m}^3$ . It was not detected in the stairwell sample.

The soil gas samples collected at the former East 19th Street Station contained higher concentrations of each of the BTEX compounds than did the indoor air samples, however the presence and concentrations of other VOCs found within the soil gas samples are inconsistent with those detected in the indoor air. While there were a number of VOCs detected in the soil gas samples that were not detected in the indoor air samples, there were also a few compounds, including chloromethane, ethanol, 2-propanol, and methylene chloride, that were detected in the indoor air but in only one or neither of the soil gas samples, and at lower concentrations. This suggests that the soil gas does not appear to be affecting indoor air quality at the former East 19th Street Station site..

## 6.0 Qualitative Human Health Exposure Assessment

This section integrates the data and information gathered during the RI and provides a qualitative assessment of the potential for exposure to MGP-related contaminants that are associated with the environmental conditions encountered at the site. This assessment was performed by identifying potential sources, migration routes for the COCs discussed in Section 5, potential receptors, and potential exposure pathways at and in the vicinity of the site. The assessment follows guidelines specified in the NYSDEC *DER-10 Draft Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2002).

### 6.1 Site Setting

A description of the site is presented in Section 2.1. Stuyvesant Town is comprised of the lands bounded by and extending from East 14th Street north to East 20th Street and from First Avenue east to Avenue C. Figure 2-1 illustrates the site location on a portion of the Brooklyn New York quadrangle topographic map.

The Stuyvesant Town apartment complex extends from First Avenue to Avenue C and from East 14th Street to East 20th Street and includes 35 high-rise buildings, playgrounds, sport courts and underground parking garages across a 61-acre area.

### 6.2 Exposure Assessment

Exposure is the process by which humans come into contact with COCs in their environment. Humans can be exposed to COCs in a variety of environmental media including surface soil, subsurface soil, surface water, sediment, groundwater, and air. Exposure to these media can occur through several routes including ingestion, dermal contact, and inhalation. The exposure assessment identifies pathways by which humans are potentially exposed to COCs. The assessment includes the following:

- 1) Development of a conceptual site model
- 2) Discussion of potential sources
- 3) Discussion of potential release mechanisms
- 4) Identification of potential human receptors and receptor-specific exposure pathways

Although the potential for exposure to MGP residuals for Stuyvesant Town includes an evaluation of the potential for exposure to COCs via drinking impacted site groundwater as previously mentioned, the City of New York obtains drinking water from sources located in upstate areas. Other than an evaluation of potential incidental ingestion of impacted groundwater during subsurface repair or construction activities, this pathway is not further discussed in this exposure assessment. The NYSDEC groundwater classification for the site area is GA (aesthetic-fresh waters). The management of groundwater impacted by site-related residuals will be addressed in the alternatives analysis report.

#### 6.2.1 Conceptual Site Model

Figure 6-1 presents the conceptual model for the Stuyvesant Town RI investigation area. Included on the figure is information regarding the known or potential sources of COCs, the identified release mechanisms, and the affected source media. The potential migration pathways, the exposure media, and the potential exposure routes are identified. Note that the exposure routes are considered potential unless there is an on-going or documented exposure.

Information regarding the potential receptors identified in each area of interest is presented on Table 6-1.

### 6.2.2 Potential Sources of Residuals

The sources of environmental impacts for the site are residual materials associated with the former MGP structures and process areas. Exposure to surface soil could be a potential exposure pathway; however, the upper five feet of soil is believed to have been imported to the site following cessation of the MGP operations, and the concentrations of COCs in the surface soil samples collected at the site are generally within the site background study values (H&A, 2005) with total PAH concentrations less than 500 ppm. Hydrocarbon materials, including NAPL, have been observed in subsurface soil of the site. VOCs and SVOCs in these materials have leached to groundwater and the dissolved groundwater plume extends from the site to the east with likely discharge to the East River. In the MGP-impacted areas, the lower molecular weight hydrocarbons could also volatilize and migrate into ambient and/or indoor air.

### 6.2.3 Potential Release Mechanisms

As shown on Table 6-1, there are several potential release mechanisms by which the constituents identified in the soil and groundwater may be transported to other media. Each mechanism is considered for the identified media and potential receptor group. Potential release mechanisms for soil include the following:

- 1) **Fugitive Dust.** Constituents in surface and subsurface soil could be a potential source for fugitive dust via physical disturbance.
- 2) **Volatilization.** Volatile constituents may potentially be transported from subsurface soil by volatilizing into soil-pore space and eventually emanate into ambient or indoor air.
- 3) **Leaching.** Constituents in surface or subsurface soil could potentially leach to groundwater.

There are three mechanisms by which constituents in groundwater can be transported to other media. These migration pathways include the following:

- 1) **Adsorption.** Constituents in groundwater may be sorbed onto subsurface soils.
- 2) **Volatilization to Ambient Air.** Volatile constituents in groundwater may potentially desorb into soil gas and be transported into ambient or indoor air.
- 3) **Extraction.** Constituents in groundwater may migrate to other media by extraction and use of impacted groundwater.

Each of these potential release mechanisms is evaluated for each potential receptor group on Table 6-1.

### 6.2.4 Potential Human Receptors and Exposure Pathways

This section discusses the identified potential receptors and the potential that the receptor may be exposed to Site-related residuals.

#### 6.2.4.1 Stuyvesant Town Receptors

An exposure pathway analysis for receptors in Stuyvesant Town is summarized in Table 6-1. The analysis includes an identification of each potential receptor group, a listing of each potential exposure media and potential pathway, and a rationale for inclusion or exclusion of each potential receptor in the consideration of remedial actions in the alternatives analysis report. Each of the receptor groups, and the potential exposure pathways, are identified on Table 6-1. Potential receptor groups and potential exposure pathways that may exist for Stuyvesant Town are discussed below.

### **Apartment Building Resident**

A resident of the apartment buildings could potentially be exposed to MGP-related COCs by the inhalation of impacted indoor air. The results of the soil vapor intrusion (SVI) evaluation sampling performed at the site indicate that the concentrations of COCs in indoor air that could possibly be MGP-related were attributable to other sources within the buildings rather than MGP residuals. Therefore, the potential for a resident to be exposed to air impacted by MGP-related COCs is considered to be low under standard conditions.

There are unique considerations when working inside buildings on this site during planned and emergency utility work that involve cutting or drilling into concrete slabs in the basements of site buildings. There is the possibility to temporarily come into contact with potentially MGP and non-MGP-impacted soil and groundwater under the sub-grade concrete slab in the basements of the buildings at Stuyvesant Town. The existing, intact basement floor structures in apartment buildings in Stuyvesant Town have proven to be effective barriers to stop the migration of subsurface vapors into buildings. Utility or other work that involves cutting or drilling into concrete slabs in the basements of buildings within Stuyvesant Town may provide a potential pathway for subsurface vapors into these buildings. The potential for a resident to be exposed to air impacted by MGP-related COCs during sub-slab activities is considered to be low and any potential exposure would be limited in duration and preventive measures would be used during sub-slab activities. However, the inhalation of VOCs by apartment building residents pathway is considered to be potentially complete and will be addressed in the alternatives analysis report. Additionally, the draft interim Site Management Plan (SMP) (ENSR 2008c) has been developed for the site and includes guidance to engineers and contractors for implementing procedures during projects that involve drilling or cutting through the basement slabs to prevent and control the potential for subsurface vapors entering and impacting the indoor air environment of these buildings.

As indicated above, it is believed that surface soil and the upper five feet of subsurface soil have been imported to the site following cessation of the MGP operations. Sampling and analysis of surface soils has indicated that the concentrations of VOCs and SVOCs are low and similar to background concentrations. Surface soils at the site are grass-covered or landscaped and the potential for residents to come into contact with surface soils is low. For these reasons, the potential for a resident to be exposed to COCs in surface soil is considered to be low.

### **Child Day Care Attendee**

Children and adults present at the on-site day care facility at the former East 14th Street Station site could potentially be exposed to MGP-related COCs by the inhalation of impacted indoor air. Potential exposure concerns for the child day care attendee include inhalation of particulates during subsurface utility and other underground construction activities. The considerations for work inside of the day care facility are similar to those discussed for the apartment building resident. Based on previous and current investigations, vapor intrusion to indoor air is not considered to be a completed pathway.

### **Commercial Building Occupant/Parking Lot Attendant**

Several commercial buildings are located within the footprint of the former MGP process area including an underground parking facility. An occupant or employee could potentially be exposed to MGP-related COCs by the inhalation of impacted indoor air. The results of the SVI evaluation sampling performed in this building indicated that the concentrations of COCs in indoor air that could possibly be MGP-related are low. Therefore, the potential for an occupant to be exposed to air impacted with MGP-related COCs is considered to be low under standard conditions. Similar to the apartment building resident, sub-slab construction within the building or parking garage may provide a potential pathway for subsurface vapors. Therefore, the inhalation of VOCs by commercial building occupants pathway is considered to be potentially complete and will be addressed in the alternatives analysis report and by the SMP.

## **Maintenance Workers**

A maintenance worker at the commercial building or Stuyvesant Town complex could be involved in indoor and/or outdoor maintenance or construction activities. Based on a reconnaissance of the site buildings, none of the buildings have sumps that contain impacted groundwater. Based on the results of the SVI sampling performed in the site buildings (including the commercial building), concentrations of COCs in indoor air are within the range considered to be typical of residential buildings at uncontaminated sites or are attributable to non-MGP sources. Therefore, the potential for a maintenance worker to be exposed to groundwater or air impacted with MGP-related COCs is considered to be low under standard conditions. However, sub-slab construction within buildings may provide a potential pathway for subsurface vapors into the building. Therefore, the inhalation of VOCs by indoor maintenance workers pathway is considered to be potentially complete and will be addressed in the alternatives analysis report and by the SMP.

Another potential exposure pathway for outdoor maintenance workers is via direct contact with impacted soils (i.e., incidental ingestion, dermal contact, and inhalation of volatiles or particulates) while performing light maintenance activities such as lawn care or landscaping. However, the concentrations of MGP-related COCs in surface soils are low, and the soil is covered with grass or landscaping materials. The period of time that a worker would be in contact with subsurface soils is anticipated to be minimal. For these reasons, the potential for an outdoor maintenance worker to be exposed to MGP-related COCs in surface and subsurface soils is considered to be low.

## **Subsurface Outdoor Maintenance or Utility Workers**

Outdoor maintenance workers and subsurface utility workers could potentially be exposed to soil containing NAPL and other COCs in subsurface soil and groundwater via incidental ingestion, dermal contact, and inhalation of volatiles or particulates if subsurface excavation work is needed to repair or replace underground features such as gas, water or sewer lines, or other utilities or structures at the site. Only properly trained personnel should complete subsurface work at the site using methods specified in a site-specific HASP, until the area has been cleared of impacted materials.

## **Site Visitors and Pedestrians**

Site visitors and pedestrians could potentially contact surface soil in the landscaped areas of the site, or inhale impacted indoor air while visiting site buildings or surrounding areas. As indicated above, the potential for exposure for each of these media is considered to be low under standard conditions. However, a site visitor could potentially be exposed to impacts to indoor air if sub-slab construction occurs in the building that they visit. Therefore, the inhalation of VOCs by site visitors pathway is considered to be potentially complete and will be addressed in the alternatives analysis report and by the site management plan.

## **6.3 Conclusions**

For Stuyvesant Town, subsurface maintenance or utility workers who perform excavation and/or repair work on the site could possibly be exposed to NAPL, impacted soil, and/or groundwater. The draft site management plan (ENSR 2008c) (SMP) was developed and submitted to NYSDEC on August 15, 2008. The SMP specifically details institutional controls enacted on the Stuyvesant Town property to protect residents, maintenance, utility, and landscape workers from soil impacts present below five feet. The plan outlines procedures for detecting and managing impacted air, soil, and groundwater if they are encountered. While still draft, property owner personnel and all others doing subsurface work are subject to the procedures in the SMP. Therefore, subsurface work should only be performed by properly trained personnel, using methods specified in the draft SMP (ENSR 2008c).

An IRM consisting of an indoor air monitoring program is being implemented on the site and will continue to ensure that inhalation of indoor air is not a complete pathway. In addition, an IRM consisting of monitoring and

recovery of NAPL from groundwater monitoring wells is being implemented on the site. Both of these plans are considered part of the SMP and therefore are being implemented in accordance with that document.

## 7.0 Summary and Conclusions

Based on site observations and analytical data, it appears surface soils were imported to the site after the MGP operations ceased, possibly for final grading purposes during the construction of Stuyvesant Town apartment complex. The upper fill also generally appears to represent imported fill material brought to the site after closure of the MGP operations. The concentrations of compounds detected in the SCS and RI surface soil samples were generally consistent with site-background soil concentrations and are considered to be attributable to fill material quality, anthropogenic sources, or sources unrelated to former MGP operations. Station specific summary and conclusions are presented in the following sections. Subsurface soil observations and analytical data from borings advanced to investigate MGP-related impacts reported in specific water valve excavations indicate that significant MGP-related impacts are not present at valve locations.

### 7.1 Former East 14th Street Station

Soil gas samples were collected at and adjacent to the former East 14th Street Station between 2003 and 2006. VOCs common to both petroleum and MGP byproducts, for example, BTEX and naphthalene, were detected in most soil gas samples; however, other petroleum-related constituents, primarily those associated with gasoline, were also pervasively present in the soil gas samples, suggesting that petroleum-related residuals in the subsurface may be a more significant contributor to the overall BTEX and naphthalene concentrations than MGP-related tar and tar residues in the subsurface. Comparison of the distribution and concentrations of the compounds in indoor air, ambient air, and soil gas support the previous RETEC report, which indicated that the chemical constituents and concentrations in indoor air more closely reflect the ambient air quality than that of the subsurface soil gas. Thus, the results to date suggest that indoor air within residential buildings currently occupying the former station sites is not adversely affected by the soil gas concentrations beneath the former station.

Tar-like impacts in soil were typically encountered in discrete lenses or thin soil layers between 20 and 30 ft bgs within the station footprint, but were also present in soils at 12 feet at one location and as deep as 49 ft bgs at another location. A free-phase tar was observed during the RI program within one previously installed monitoring well screened between 22 and 32 ft bgs along East 14th Street. The subsurface soil impacts encountered beneath the former East 14th Street Station have been horizontally and vertically delineated.

MGP-impacts to groundwater were generally in wells screened below the water table. The highest total VOC and SVOC concentrations (and highest total BTEX and PAH concentrations, respectively) were typically found in groundwater adjacent to the footprint of the former holders in areas where soils were impacted with tar residuals. Monitoring well 14MWDD02 was not sampled due to the presence of tar at its base. Otherwise, concentrations of VOCs and SVOCs generally decreased in both the shallow (water table) zone and deeper zones in downgradient wells near Avenue C. Downgradient and on the east side of Avenue C, groundwater does not appear to be impacted from the MGP operations at the former East 14th Street Station. Impacts on the east side of Avenue C may be associated with the former East 14th Street Works.

### 7.2 Former East 17th Street Station

Soil gas samples were collected within and adjacent to the former East 17th Street Station footprint. As with the former East 14th Street Station site, VOCs common to both petroleum and MGP byproducts, that is BTEX and naphthalene, were detected in most soil gas samples; however, other petroleum-related constituents, primarily those associated with gasoline, were also pervasively present in the soil gas samples, suggesting that petroleum-related residuals in the subsurface may be a more significant contributor to the overall BTEX and naphthalene concentrations than MGP-related tar and tar residues in the subsurface. The vadose zone is comprised of heterogeneous urban fill, and physical observations and analytical findings for the SC and RI soil

borings indicate that petroleum-related impacted soils are present beneath the site and are generally at shallower depths than those in which MGP-related impacts are noted (e.g., depths greater than 20 ft bgs).

No indoor air samples were collected as part of the RI, but comparison of the distribution and concentrations of the compounds in previous indoor and ambient air samples, and RETEC and RI soil gas samples, support the previous RETEC report findings. The RETEC findings indicate that the chemical constituents and concentrations in indoor air more closely reflect the ambient air quality than that of the subsurface soil gas. Thus, the results to date suggest that indoor air within residential buildings currently occupying the former station sites is not adversely affected by the soil gas concentrations beneath the former station.

Isolated intervals of TLM were encountered within the East 17th Street Station footprint to the west of the Avenue C Loop Road. Sporadic lenses of tar staining and/or residual tar blebs were observed within fill and organic deposits. Tar impacts were typically encountered within soils between 26 ft and 29 ft bgs, but were present as shallow as 15 ft bgs at one location and as deep as 30.5 ft bgs at another location. The subsurface soil impacts have been delineated at the East 17th Street Station.

During the valve excavation activities, MGP-impacts were also encountered at locations to the south of the station footprint along the Avenue C Loop Road and to the northeast of the station footprint near Avenue C. These impacts were generally encountered between depths of 9 and 13 ft bgs. In total, approximately 275 tons of non-hazardous characterized soils with potential MGP-impacts were removed from along the Avenue C Loop Road during the valve excavation activities.

The highest concentrations of VOCs and SVOCs (and BTEX and PAHs, respectively) were generally found downgradient from the former holder locations in shallow groundwater. BTEX and PAHs were primarily detected within groundwater samples from 17MWS03, which is downgradient of the former holders. Only trace concentrations of total BTEX and PAH compounds were detected in shallow groundwater samples collected immediately adjacent to the former holders. The pattern of VOC and SVOC concentrations (and BTEX and PAH concentrations respectively) was reversed for the intermediate wells. Here the highest VOC and SVOC concentrations were found in groundwater from intermediate wells immediately adjacent to the holder footprints and decreased in downgradient wells. Groundwater impacts in the intermediate zone were greater than the impacts noted in the shallow and deep zones.

During the valve replacement program, excavations where soil staining and MGP-type and/or petroleum-type odors were observed also exhibited sheens on the groundwater. These excavations were located both within and in the vicinity of the former station footprint.

### **7.3 Former East 19th Street Station**

The RI activities conducted at the former East 19th Street Station were intended to provide physical and analytical confirmation regarding the absence of media impacts attributable to the former holder station. Previous environmental reports submitted to the NYSDEC for the former station site indicate that the limited, low-level impacts identified at and near the site were most likely attributable to other urban sources. Soil gas and indoor air contain detectable concentrations of BTEX compounds; however, as indicated in the previous RETEC findings, the low concentrations of VOCs detected within indoor air at the East 19th Street Station appear to be linked to outdoor air concentrations containing vehicle combustion components, gasoline-related compounds and chemicals used as part of regular building activities. The RI soil gas results support the conclusion that soil gas does not appear to be affecting indoor air within residential buildings currently occupying the former East 19th Street station based upon inconsistent concentrations detected between indoor air and soil gas beneath the former holder site.

Impacts of MGP residuals in soil were limited, and no MGP-related impacts to groundwater beneath the former East 19th Street Station were detected during the RI sampling rounds.



During the valve replacement program, stained soils and MGP-type odors were observed in several excavations conducted along the East 20th Street Loop Road at depths typically between 5 and 13 ft bgs; in addition, product globules and sheens on groundwater within several of the impacted excavations were also noted. These excavations were located outside the former station footprint and investigation study area. The impacts were observed within and/or beneath the fill horizon, which may or may not be associated with former operations at the property, and were variable and localized in degree and extent. In total, approximately 415 tons of non-hazardous characterized soils with potential MGP-impacts were removed from along the East 20th Street Loop Road during the valve excavation activities.

## 7.4 Conclusions

There are no significant or imminent threats to human health that warrant an interim remedial action. Given the depths of the MGP-related impacts, the current and future planned use of the site, and the characteristics of the subsurface and the compounds of concern, exposure to human health or the environment to residual MGP tar residues is unlikely outside of significant construction or land development work for which the draft interim Site Management Plan (SMP) details environmental and health and safety controls to mitigate risks.

NAPL was noted in one of the monitoring wells at the site. Due to the presence of NAPL in a monitoring well at the site, Con Edison submitted an IRMWP for NAPL Monitoring and Recovery (ENSR 2008b). This work plan was finalized and submitted to NYSDEC in December 2008 and is considered to be part of the SMP.

Based on indoor air sampling during the RI, intrusion of vapors emanating from MGP-related material that may be present at the site was not evident. Although indoor air sampling has not indicated that subsurface vapors associated with former MGP residuals affect indoor air quality, Con Edison is performing additional sampling to determine that there has been no significant change of indoor air quality. Con Edison submitted an Interim Remedial Measure Work Plan for Indoor Air Sampling (ENSR 2008c) to NYSDEC on November 18, 2008. This IRMWP is also considered to be part of the SMP for Stuyvesant Town. The first round of indoor air sampling and analysis was performed in February and March 2009.

A qualitative human health exposure assessment (QHHEA) was performed to identify the potential exposure pathways associated with impacted media for workers, daycare attendees, residents, and visitors in Stuyvesant Town. Subsurface maintenance or utility workers who perform subsurface excavation work and/or repairs could possibly be exposed to impacted media and controls are recommended to limit potential exposures in these areas. As discussed, the draft interim SMP was developed and is currently being used to mitigate these risks. While still draft, property owner personnel and all others doing subsurface work are also subject to the procedures in the SMP. Remedial options for these areas will be evaluated in an alternatives analysis report. Exposure of residents and visitors to MGP residuals is considered to be unlikely.

Based on the combined findings of the SCS and RI, additional investigative work is not recommended for Stuyvesant Town. Additional delineation of subsurface soil and groundwater MGP-related impacts is not necessary to begin remedial alternative development and evaluation for impacts identified.

## 8.0 Recommendations

Based on the combined findings of the SCS and RI, the following activities are recommended for the site:

The delineation of subsurface soil and groundwater impacts associated with the former MGP stations located within the present-day Stuyvesant Town apartment complex has been completed to a sufficient degree to evaluate appropriate remedial technologies and begin development and evaluation of remedial alternatives for the impacts identified at the site for inclusion in an alternatives evaluation report. It is recommended that the alternatives analysis for the Stuyvesant Town Former MGP Station Sites be initiated. If additional delineation data are necessary for remedial alternative evaluation or remedial action implementation, it is recommended that they be collected during a pre-design investigation.

- Implement the Site Management Plan, including the Interim Remedial Measure Work Plans for NAPL Monitoring and Recovery and Indoor Air Monitoring, as appropriate.

## 9.0 References

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## Tables

**Table 3-1  
Sample Location and Collection Rationale  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Investigation Location	Investigation Location Type and ID	Sample Type	Laboratory Sample ID (Depth in ft bgs)	Sample Location/Collection Rationale	Sample Date	Laboratory Analysis								
						VOCs (soils/water)	SVOCs (soils/water)	TAL Metals (soils)	Total TAL Metals (water)	Dissolved TAL Metals (water)	Total & Amenable Cyanide (soils/water)	VOCs & Naphthalene (air/soil gas)	QA/QC Sample	
<b>East 14th Street Station - 2006 Remedial Investigation</b>														
Ambient Air AMB		outdoor air	AMB-2	Evaluate outdoor air during indoor air sampling for assessment	3/16/2006							X		
		outdoor air	AMB-4	of potential indoor air impact sources	3/16/2006							X		
Indoor Sampling Locations IA-(1-7)E14		indoor air	IA-1E14-1	Evaluate indoor air in a crawl space hatch	3/16/2006							X		
		indoor air	IA-2E14-1	Evaluate indoor air in a stairwell	3/16/2006							X		
		indoor air	IA-3E14-1	Evaluate indoor air on a ramp	3/16/2006							X		
		indoor air	IA-4E14-1	Evaluate indoor air in a stairwell	3/16/2006							X		
		indoor air	IA-5E14-1	Evaluate indoor air in a stairwell	3/16/2006							X		
		indoor air	IA-6E14-1	Evaluate indoor air in a crawl space	3/16/2006							X	Duplicate Collected	
		indoor air	IA-7E14-1	Evaluate indoor air in a stairwell	3/16/2006							X		
Inside Underground Parking Garage #5	Sub-slab Vapor Points ST14 SG01/SG02	soil gas	ST14SG01	Evaluate sub-slab soil vapors for MGP-related impacts	3/17/2006							X	Duplicate Collected	
			ST14SG02	Evaluate sub-slab soil vapors for MGP-related impacts	3/17/2006							X		
Inside Underground Parking Garage #5	Soil Boring ST14SB01	soil gas	ST14SV01	Evaluate soil vapor for potential MGP-related impacts	3/27/2006							X		
		soil	ST14SB01 (12-16')	Delineate impacts observed in 14GH002	3/28/2006	X	X	X			X			
		soil	ST14SB01 (24-28')	Delineate impacts observed in 14GH004	3/28/2006	X	X	X			X			
		soil	ST14SB01 (28-32')	Evaluate soil with a petroleum-like odor and an elevated PID reading	3/28/2006	X	X	X			X			
		soil	ST14SB01 (36-39.8')	Evaluate soil at the completion depth of the boring	3/28/2006	X	X	X			X			Duplicate Collected
West Side of Avenue C, between E. 14th and E. 15th Streets	Soil Boring ST14SB03	soil gas	ST14SV03	Evaluate soil vapor for potential MGP-related impacts	4/6/2006							X		
		soil	ST14SB03 (13-15')	Delineate impacts observed in 14PH003	4/13/2006	X	X	X			X		Duplicate Collected	
West Side of Avenue C, between E. 14th and E. 15th Streets	Soil Boring ST14SB03	soil	ST14SB03 (35-37')	Evaluate soil with elevated PID reading	4/13/2006	X	X	X			X			
		soil	ST14SB03 (55-57')	Evaluate soil with elevated PID reading	4/13/2006	X	X	X			X			
		soil	ST14SB03 (71-73')	Vertically delineate observed impacts	4/13/2006	X	X	X			X			
Northwest Corner of E. 14th Street and Avenue C	Soil Boring ST14SB04	soil	ST14SB03 (84-86')	Evaluate soil at bedrock interface	4/14/2006	X	X	X			X			
		soil gas	ST14SV04	Evaluate soil vapor for potential MGP-related impacts	4/6/2006							X		
		soil	ST14SB04 (2-4')	Delineate impacts observed in 14PH001	4/3/2006	X	X	X			X			
		soil	ST14SB04 (15-17')	Horizontally delineate soil impacts for ST14SB01 & SB03 sampling intervals	4/11/2006	X	X	X			X			
Northwest Corner of E. 14th Street and Avenue C	Well Cluster 14MWS01/D01/DD01	groundwater	ST14-MWS01	Evaluate groundwater from water table zone	6/6/2006	X	X		X		X		Duplicate Collected	
		groundwater	ST14-MWD01	Evaluate groundwater from intermediate screened interval of aquifer	6/6/2006	X	X		X	X	X			
		groundwater	ST14-MWDD01	Vertically delineate groundwater impacts at MWD01	6/6/2006	X	X		X		X		X	
North Side of E. 14th Street, between Avenues B & C	Soil Boring ST14SB05	soil gas	ST14SV05	Evaluate soil vapor for potential MGP-related impacts	4/6/2006							X		
		soil	ST14SB05 (19-21')	Delineate impacts observed in 14GH011 and 14GH013	4/17/2006	X	X	X			X			
		soil	ST14SB05 (23-25')	Evaluate black-stained soil with a naphthalene-like odor	4/17/2006	X	X	X			X			
		soil	ST14SB05 (25-27')	Delineate impacts observed in 14GH013	4/17/2006	X	X	X			X			
	Well Cluster 14MWS02/DD02	soil	ST14SB05 (48-49')	Evaluate soil at bedrock interface	4/17/2006	X	X	X			X			
		groundwater	ST14-MWS02	Evaluate groundwater from water table zone	6/6/2006	X	X		X	X	X			
Southeast Corner of E. 15th Street and Avenue C	Soil Boring ST14SB06	groundwater	ST14-MWDD02	Vertically delineate groundwater impacts at MWD02	6/6/2006	X	X		X	X	X			
		soil	ST14SB06-2 (24-25')	Evaluate tar impacted soils	5/8/2006	X	X	X			X			
		soil	ST14SB06-2 (31-33')	Evaluate soil with elevated PID reading below observed impacts for vertical delineation	5/8/2006	X	X	X			X			
		soil	ST14SB06-2 (35-37')	Horizontally delineate soil impacts for ST14SB03 sampling interval	5/12/2006	X	X	X			X		MS/MSD Collected	
		soil	ST14SB06-2 (53-55')	Vertically delineate impacts within boring	5/12/2006	X	X							
Southeast Corner of E. 15th Street and Avenue C	14MWDD03	soil	ST14SB06-2 (56-57')	Horizontally delineate impacts observed in ST14SB03	5/12/2006	X	X							
		soil	ST14SB06-2 (57-58')	Evaluate soil at the completion depth of the boring	5/12/2006	X	X	X			X			
Northeast Corner of E. 14th Street and Avenue C	Soil Boring ST14SB08	groundwater	ST14-MWDD03	Horizontally delineate groundwater quality in deeper zone of aquifer	6/8/2006	X	X		X	X	X			
		groundwater	ST14-MW36	Evaluate groundwater from water table zone	6/8/2006	X	X		X	X	X			
		soil	ST14SB08 (27-29')	Horizontally delineate impacts observed in ST14SB03 and ST14SB04	5/2/2006	X	X	X			X			
Northeast Corner of E. 14th Street and Avenue C	Soil Boring ST14SB08	soil	ST14SB08 (35-37')	Horizontally delineate impacts observed in ST14SB03 and ST14SB04	5/2/2006	X	X							
		soil	ST14SB08 (43-45')	Evaluate soil with a naphthalene-like odor and elevated PID readings	5/2/2006	X	X							
		soil	ST14SB08 (50-51')	Evaluate soil at the completion depth of the boring	5/2/2006	X	X	X			X			
Northeast Corner of E. 14th Street and Avenue C	Well Cluster 14MWD05/DD05	groundwater	ST14-MWD05	Horizontally delineate impacts at MWD02	6/8/2006	X	X		X	X	X			
		groundwater	ST14-MWDD05	Horizontally delineate groundwater quality in deeper zone of aquifer	6/8/2006	X	X		X	X	X		MS/MSD Collected	
	MW10	groundwater	ST14-MW10	Evaluate groundwater from water table zone	6/8/2006	X	X		X		X			

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New York, NY**

Investigation Location	Investigation Location Type and ID	Sample Type	Laboratory Sample ID (Depth in ft bgs)	Sample Location/Collection Rationale	Sample Date	Laboratory Analysis						
						VOCs (soils/water)	SVOCs (soils/water)	TAL Metals (soils)	Total TAL Metals (water)	Dissolved TAL Metals (water)	Total & Amenable Cyanide (soils/water)	VOCs & Naphthalene (air/soil gas)
<b>East 14th Street Station - 2008 Remedial Investigation</b>												
Northwest Corner of E. 14th Street and Avenue C	Well Cluster 14MWS01/D01/DD01	groundwater	14MWS01	Evaluate water from the shallow groundwater zone	8/21/2008	X	X		X		X	
		groundwater	14MWD01	Evaluate water from the intermediate groundwater zone	8/21/2008	X	X		X		X	
		groundwater	14MWDD01	Evaluate water from the deep groundwater zone	9/29/2008	X	X		X		X	
North Side of E. 14th Street between Avenues B & C	Well Cluster 14MWS02/DD02	groundwater	14MWS02	Evaluate water from the shallow groundwater zone	8/22/2008	X	X		X		X	Duplicate Collected
		groundwater	14MWDD02	Evaluate water from the deep groundwater zone	9/29/2008	X	X		X		X	Duplicate, MS/MSD Collected
Southeast Corner of E. 15th Street and Avenue C	14MWDD03	groundwater	14MWDD03	Evaluate water from the deep groundwater zone	8/20/2008	X	X		X		X	
	MW-36	groundwater	MW-36	Evaluate water from the shallow groundwater zone	9/26/2008	X	X		X		X	
Northeast Corner of E. 14th Street and Avenue C	Well Cluster 14MWD05/DD05	groundwater	14MWD05	Evaluate water from the intermediate groundwater zone	8/21/2008	X	X		X		X	
		groundwater	14MWDD05	Evaluate water from the deep groundwater zone	8/21/2008	X	X		X		X	
		groundwater	MW-10	Evaluate water from the shallow groundwater zone	8/21/2008	X	X		X		X	
South Side of E. 14th Street between Avenues B & C	ST14SB10	soil	ST14SB10 (10-14)	To delineate the west-southwestern extent of total VOC exceedances noted from 18-19 ft bgs in boring 14GH010 and to evaluate soil quality west-southwest of soil and groundwater impacts noted in 14MWS/D/DD02.	5/29/2008	X	X	X			X	
			ST14SB10 (18-20)			X	X	X			X	
			ST14SB10 (20-24)			X	X	X			X	
			ST14SB10 (38-40)			X	X	X			X	
	ST14SB11	soil	ST14SB11 (8-10)	To delineate southern extent of total VOC exceedances noted from 22-23 ft bgs in boring 14GH013 and the southern extent of total SVOC exceedances noted from 20-21 ft bgs in boring 14GH01, and to evaluate soil quality south of soil and groundwater impacts noted in 14MWS/D/DD02, and to delineate the southern extent of NAPL observed in 14MWD02.	6/25/2008	X	X	X			X	
			ST14SB11 (11-13)			X	X	X			X	
			ST14SB11 (20-23)			X	X	X			X	
			ST14SB11 (26-28)			X	X	X			X	
East Side of Avenue C between 271 and 245 Avenue C	ST14SB12	soil	ST14SB12 (24-28)	To delineate the eastern extent of NAPL observed in boring 14GH004 between 24-24.5 and 27-28 ft bgs. This boring will only be drilled if impacts are noted in boring ST14SB15.	5/29/2008	X	X	X			X	
			ST14SB12 (44-48)		5/30/2008	X	X	X			X	
South Side of Avenue C Loop Road in front of 655 E. 14th Street	ST14SB13	soil	ST14SB13 (24-28)	To delineate the northern extent of NAPL observed in boring 14GH004 between 24 -24.5 and 27-28 ft bgs.	5/13/2008	X	X	X			X	Duplicate Collected
			ST14SB13 (30-32)			X	X	X			X	
			ST14SB13 (49-50)			X	X	X			X	
North Side of E. 14th Street between 605 and 625 E. 14th Street	ST14SB09	soil	ST14SB09 (18-20)	To delineate the western extent of total VOC exceedances noted from 18-19 ft bgs in boring 14GH010.	5/23/2008	X	X	X			X	
			ST14SB09 (22-24)			X	X	X			X	
			ST14SB09 (34-36)			X	X	X			X	
			ST14SB09 (42-45)			X	X	X			X	Duplicate Collected
	ST14SB14	soil	ST14SB14 (24-28)	No access to parking garage.	NS							
	ST14SB15	soil	ST14SB15 (24-28)	No access to parking garage.	NS							
	ST14SB16	soil	ST14SB16 (22-24)	Delineate western extent of impacts observed in ST14SB09.	6/24/2008	X	X	X			X	
		ST14SB16 (48-50)	Sample base of borehole.	X		X	X			X		

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New York, NY**

Investigation Location	Investigation Location Type and ID	Sample Type	Laboratory Sample ID (Depth in ft bgs)	Sample Location/Collection Rationale	Sample Date	Laboratory Analysis							
						VOCs (soils/water)	SVOCs (soils/water)	TAL Metals (soils)	Total TAL Metals (water)	Dissolved TAL Metals (water)	Total & Amenable Cyanide (soils/water)	VOCs & Naphthalene (air/soil gas)	QA/QC Sample
<b>East 17th Street Station - 2006 Remedial Investigation</b>													
Avenue C Loop, between 626 and 628 E. 20th Street	Soil boring ST17SB01	soil gas	ST17SV01	Evaluate soil vapor for potential MGP-related impacts	3/16/2006							X	
		soil	ST17SB01 (0-0.2')	Horizontally delineate impacts at 17GH004, 17GH006 and 17CY006	3/13/2006	X	X	X			X		
		soil	ST17SB01 (23.5-25')	Horizontally delineate impacts at 17GH004, 17GH006 and 17CY006	3/22/2006	X	X	X			X		MS/MSD Collected
		soil	ST17SB01 (31-33')	Evaluate soil at the completion depth of the boring	3/22/2006	X	X	X			X		
Avenue C Loop, south of 628 E. 20th Street	Soil boring ST17SB02	soil gas	ST17SV02	Evaluate soil vapor for potential MGP-related impacts	3/16/2006							X	
		soil	ST17SB02 (0-0.2')	Horizontally delineate impacts at 17CY006 and 17CY008	3/13/2006	X	X	X			X		
		soil	ST17SB02 (2-4')	Horizontally delineate impacts at 17CY006 and 17CY008	3/13/2006	X	X	X			X		
		soil	ST17SB02 (25-27')	Horizontally delineate impacts at 17CY006 and 17CY008	3/24/2006	X	X	X			X		
		soil	ST17SB02 (30-31')	Evaluate soil at the completion depth of the boring	3/24/2006	X	X	X			X		
Avenue C Loop, between 285 and 287 Avenue C	Soil boring ST17SB03	soil gas	ST17SV03	Evaluate soil vapor for potential MGP-related impacts	3/16/2006							X	
		soil	ST17SB03 (0-0.2')	Horizontally delineate impacts at 17CY007 and 17CY008	3/15/2006	X	X	X			X		
		soil	ST17SB03 (2-4')	Horizontally delineate impacts at 17CY007 and 17CY008	3/15/2006	X	X	X			X		
		soil	ST17SB03 (8-9')	Horizontally delineate impacts at 17CY007 and 17CY008	3/24/2006	X	X	X			X		
Avenue C Loop, between 285 and 287 Avenue C	Well Cluster 17MWS03/D03/DD03	groundwater	ST17-MWS03	Evaluate groundwater from water table zone	6/7/2006	X	X		X	X	X		
		groundwater	ST17-MWD03	Evaluate groundwater from intermediate screened interval of aquifer	6/7/2006	X	X		X	X	X		MS/MSD Collected
		groundwater	ST17-MWDD03	Vertically delineate groundwater impacts at MWD03	6/7/2006	X	X		X	X	X		
		soil gas	ST17SV04	Evaluate soil vapor for potential MGP-related impacts	3/16/2006							X	
Avenue C Loop, south of 16 Stuyvesant Oval	Soil boring ST17SB04	soil	ST17SB04 (0-0.2')	Horizontally delineate impacts at 17CY001 and 17GH005	3/14/2006	X	X	X			X		
		soil	ST17SB04 (2-4')	Horizontally delineate impacts at 17CY001 and 17GH005	3/14/2006	X	X	X			X		
		soil	ST17SB04 (27-29')	Horizontally delineate impacts at 17CY001 and 17GH005	3/21/2006	X	X	X			X		
		soil	ST17SB04 (49-51')	Evaluate soil at the completion depth of the boring	3/21/2006	X	X	X			X		Duplicate Collected
Avenue C Loop, south of 16 Stuyvesant Oval	Well Cluster 17MWS04/D04/DD04	groundwater	ST17-MWS04	Evaluate groundwater from water table zone	6/7/2006	X	X		X		X		
		groundwater	ST17-MWD04	Evaluate groundwater from intermediate screened interval of aquifer	6/7/2006	X	X		X		X		Duplicate Collected
		groundwater	ST17-MWDD04	Vertically delineate groundwater impacts at MWD04	6/7/2006	X	X		X	X	X		
East Side of 309 Avenue C, along Avenue C ROW	Soil boring ST17SB05	soil gas	ST17SV05	Evaluate soil vapor for potential MGP-related impacts	4/6/2006							X	
		soil	ST17SB05 (0-0.2')	Horizontally delineate impacts at 17GH001 and 17GH005	4/4/2006	X	X	X			X		
		soil	ST17SB05 (2-4')	Horizontally delineate impacts at 17GH001 and 17GH005	4/4/2006	X	X	X			X		MS/MSD Collected
		soil	ST17SB05-2 (5-7')	Horizontally delineate impacts at 17GH001 and 17GH005	4/26/2006	X	X	X			X		
		soil	ST17SB05 (25-27')	Horizontally delineate impacts at 17GH001 and 17GH005	4/24/2006	X	X						
		soil	ST17SB05 (27-29')	Evaluate soil with a naphthalene-like odor	4/24/2006	X	X	X			X		
		soil	ST17SB05-2 (35-37')	Vertically delineate observed impacts within boring	4/26/2006	X	X	X			X		
Along West Side Avenue C ROW, on East Side of 309 Avenue C	Well Cluster 17MWS05/D05/DD05	soil	ST17SB05 (37-39')	Vertically delineate observed impacts within boring	4/26/2006	X	X				X		
		soil	ST17SB05 (49-51')	Evaluate soil at the completion depth of the boring	4/24/2006	X	X	X			X		
		groundwater	ST17-MWS05	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X	X	X		
		groundwater	ST17-MWD05	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X	X	X		
Along West Side of Avenue C ROW, between 277 and 309 Avenue C	Soil boring ST17SB06	groundwater	ST17-MWDD05	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X		X		
		soil gas	ST17SV06	Evaluate soil vapor for potential MGP-related impacts	5/9/2006							X	
		soil	ST17SB06 (0-0.2')	Horizontally delineate impacts at 17GH001 and 17GH005	5/8/2006	X	X	X			X		
		soil	ST17SB06 (2-4')	Horizontally delineate impacts at 17GH001 and 17GH005	5/8/2006	X	X	X			X		Duplicate Collected
		soil	ST17SB06 (27-29')	Horizontally delineate impacts at 17GH001 and 17GH005	5/17/2006	X	X	X			X		
Along West Side of Avenue C ROW, between 277 and 309 Avenue C	Soil boring ST17SB06	soil	ST17SB06 (29-31')	Horizontally delineate impacts at 17GH001 and 17GH005	5/17/2006	X	X						
		soil	ST17SB06 (35-36.5')	Delineate observed impacts at ST17SB05	5/17/2006	X	X	X			X		
		soil	ST17SB06 (36.5-37')	Vertically delineate observed impacts within boring and at ST17SB05	5/17/2006	X	X						
Along West Side of Avenue C ROW, between 277 and 309 Avenue C	Well Cluster 17MWS06/D06/DD06	soil	ST17SB06 (50-51')	Evaluate soil at the completion depth of the boring	5/18/2006	X	X	X			X		
		groundwater	ST17-MWS06	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X	X	X		
		groundwater	ST17-MWD06	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X	X	X		
		groundwater	ST17-MWDD06	Delineate groundwater impacts at 17MWD03 cluster	6/5/2006	X	X		X	X	X		



**Table 3-1  
Sample Location and Collection Rationale  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Investigation Location	Investigation Location Type and ID	Sample Type	Laboratory Sample ID (Depth in ft bgs)	Sample Location/Collection Rationale	Sample Date	Laboratory Analysis						
						VOCs (soils/water)	SVOCs (soils/water)	TAL Metals (soils)	Total TAL Metals (water)	Dissolved TAL Metals (water)	Total & Amenable Cyanide (soils/water)	VOCs & Naphthalene (air/soil gas)
<b>East 17th Street Station - 2008 Remedial Investigation</b>												
Avenue C Loop, east of 628 E. 20th Street	ST17SB07	soil	ST17SB07 (26-28)	To evaluate the northeastern extent of staining and soil impacts noted between 25 and 27 ft bgs in 17CY006.	5/15/2008	X	X	X			X	
		soil	ST17SB07 (31-32)	To evaluate the northeastern extent of staining and soil impacts noted between 25 and 27 ft bgs in 17CY006.	5/15/2008	X	X	X			X	
		soil	ST17SB07 (32-34)	To evaluate the northeastern extent of staining and soil impacts noted between 25 and 27 ft bgs in 17CY006.	5/15/2008	X	X	X			X	
Avenue C Loop, between 285 and 287 Avenue C	Well Cluster 17MWS03/D03/DD03	groundwater	17MWS03	Evaluate groundwater from the shallow groundwater zone	8/20/2008	X	X		X		X	
		groundwater	17MWD03	Evaluate groundwater from the intermediate groundwater zone	8/20/2008	X	X		X		X	
		groundwater	17MWDD03	Evaluate groundwater from the deep groundwater zone	8/20/2008	X	X		X		X	
Avenue C Loop, south of 16 Stuyvesantvesant Oval	Well Cluster 17MWS04/D04/DD04	groundwater	17MWS04	Evaluate groundwater from the shallow groundwater zone	8/20/2008	X	X		X		X	
		groundwater	17MWD04	Evaluate groundwater from the intermediate groundwater zone	8/20/2008	X	X		X		X	Duplicate Collected
		groundwater	17MWDD04	Evaluate groundwater from the deep groundwater zone	8/20/2008	X	X		X		X	
Avenue C Loop, between 626 and 628 E. 20th Street	17WVSB01	soil	17WVSB01 (10-12)	Refusal at 8' bgs	NS							
		soil	17WVSB01 (15-21)	Refusal at 8' bgs	NS							
		soil	17WVSB01 (27-29)	Refusal at 8' bgs	NS							
Avenue C Loop, east of 283 Avenue C	ST17SB08	soil	ST17SB08 (14-18)	To delineate the southern extent of MGP impacts noted between 15.2-15.3, 15.9 - 16.2, and 21-27 ft bgs in boring 17HG001.	5/28/2008	X	X	X			X	
		soil	ST17SB08 (22-26)	To delineate the southern extent of MGP impacts noted between 15.2-15.3, 15.9 - 16.2, and 21-27 ft bgs in boring 17HG001.	5/28/2008	X	X	X			X	
		soil	ST17SB08 (32-36)	To delineate the southern extent of MGP impacts noted between 15.2-15.3, 15.9 - 16.2, and 21-27 ft bgs in boring 17HG001.	5/28/2008	X	X	X			X	
Avenue C Loop, west of 10 Stuyvesantvesant Oval	17WVSB02	soil	17WVSB02 (10-13)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 10 - 13 ft bgs in water valve excavations 9 -12.	5/12/2008	X	X	X			X	
		soil	17WVSB02 (20-23.5)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 10 - 13 ft bgs in water valve excavations 9 -12.	5/12/2008	X	X	X			X	
		soil	17WVSB02 (28-30)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 10 - 13 ft bgs in water valve excavations 9 -12.	5/15/2008	X	X	X			X	
Along West Side Avenue C ROW, on East Side of 309 Avenue C	Well Cluster 17MWS05/D05/DD05	groundwater	17MWS05	Evaluate groundwater from the shallow groundwater zone	9/10/2008	X	X					
		groundwater		Evaluate groundwater from the shallow groundwater zone	9/29/2008	X	X		X		X	
		groundwater	17MWD05	Evaluate groundwater from the intermediate groundwater zone	8/19/2008	X	X		X		X	
Along West Side of Avenue C ROW, between 277 and 309 Avenue C	Well Cluster 17MWS06/D06/DD06	groundwater	17MWS06	Evaluate groundwater from the shallow groundwater zone	8/22/2008	X	X		X		X	
		groundwater	17MWD06	Evaluate groundwater from the intermediate groundwater zone	8/21/2008	X	X		X		X	
		groundwater	17MWDD06	Evaluate groundwater from the deep groundwater zone	8/22/2008	X	X		X		X	
<b>East 19th Street Station - 2006 Remedial Investigation</b>												
North Side of E. 20th Street Loop Road, between 522 and 524 E. 20th Street	Soil boring ST19SB01	soil gas	ST19SV01	Evaluate soil vapor for potential MGP-related impacts	3/16/2006							X
		soil	ST19SB01 (0-0.2')	Evaluate near-surface impacts	3/14/2006	X	X	X			X	
		soil	ST19SB01 (2-4')	Evaluate near-surface impacts	3/14/2006	X	X	X			X	
		soil	ST19SB01 (14-16')	Evaluate near-surface impacts	3/17/2006	X	X	X			X	
	Well Cluster 19MWS05/D05	soil	ST19SB01 (38-40')	Evaluate soil at the completion depth of the boring	3/17/2006	X	X	X			X	
		groundwater	ST19-MWS05	Evaluate groundwater from water table zone	6/7/2006	X	X		X		X	
		groundwater	ST19-MWD05	Evaluate groundwater from intermediate screened interval of aquifer	6/9/2006	X	X		X		X	

**Table 3-1  
Sample Location and Collection Rationale  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Investigation Location	Investigation Location Type and ID	Sample Type	Laboratory Sample ID (Depth in ft bgs)	Sample Location/Collection Rationale	Sample Date	Laboratory Analysis							QA/QC Sample
						VOCs (soils/water)	SVOCs (soils/water)	TAL Metals (soils)	Total TAL Metals (water)	Dissolved TAL Metals (water)	Total & Amenable Cyanide (soils/water)	VOCs & Naphthalene (air/soil gas)	
<b>East 19th Street Station - 2008 Remedial Investigation</b>													
West Side of E. 20th Street Loop Road, between 450 E. 20th Street and 21 Stuyvesantvesant Oval	19WVSB01	soil	19WVSB01 (4-8)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 5 ft bgs in water valve excavation A.	5/13/2008	X	X	X			X		
		soil	19WVSB01 (12-16)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 5 ft bgs in water valve excavation A.	5/13/2008	X	X	X			X		
		soil	19WVSB01 (20-26)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 5 ft bgs in water valve excavation A.	5/13/2008	X	X	X			X		MS/MSD Collected
North Side of E. 20th Street Loop Road, between 522 and 524 E. 20th Street	19WVSB02	soil	19WVSB02 (8-10)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 8-10 ft bgs and brown globules were noted at the water table (7 ft bgs) in water valve excavations 24 through 27.	5/14/2008	X	X	X			X		
		soil	19WVSB02 (10-12)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 8-10 ft bgs and brown globules were noted at the water table (7 ft bgs) in water valve excavations 24 through 27.	5/14/2008	X	X	X			X		
		soil	19WVSB02 (23-24)	To evaluate the subsurface soil quality where MGP type odors and staining were noted at 8-10 ft bgs and brown globules were noted at the water table (7 ft bgs) in water valve excavations 24 through 27.	5/14/2008	X	X	X			X		
	Well Cluster 19MWS05/D05	groundwater	19MWS05	Evaluate groundwater from the shallow groundwater zone	8/19/2008	X	X		X		X		MS/MSD Collected
		groundwater	19MWD05	Evaluate groundwater from the intermediate groundwater zone	8/19/2008	X	X		X		X		
South Side of E. 20th Street Loop Road, next to 20 Stuyvesantvesant Oval	19WVSB03	soil	19WVSB03 (12-13)	Refusal at 12.3' bgs	NS								
<b>Background Monitoring Wells - 2006 Remedial Investigation</b>													
Background Groundwater Wells	BG00-MWS06	groundwater	BG00-MWS06	Evaluate site background groundwater from water table zone	6/7/2006	X	X		X	X	X		
	BG00-MWD06	groundwater	BG00-MWD06	Evaluate site background groundwater from intermediate screened interval of aquifer	6/7/2006	X	X		X	X	X		
	BG00-MWS07	groundwater	BG00-MWS07	Evaluate site background groundwater from water table zone	6/9/2006	X	X		X		X		
	BG00-MWD07	groundwater	BG00-MWD07	Evaluate site background groundwater from intermediate screened interval of aquifer	6/9/2006	X	X		X	X	X		
<b>Background Monitoring Wells - 2008 Remedial Investigation</b>													
Background Groundwater Wells	Well Pair 00MWS06/D06	groundwater	00MWS06	Evaluate groundwater from the shallow groundwater zone	8/19/2008	X	X		X		X		
		groundwater	00MWD06	Evaluate groundwater from the intermediate groundwater zone	8/19/2008	X	X		X		X		Duplicate Collected
	Well Pair 00MWS07/D07	groundwater	00MWS07	Evaluate groundwater from the shallow groundwater zone	9/29/2008	X	X		X		X		
		groundwater	00MWD07	Evaluate groundwater from the intermediate groundwater zone	9/29/2008	X	X		X		X		Duplicate Collected
<b>First Avenue Loop Road - 2008 Remedial Investigation</b>													
East Side of First Avenue Loop Road, between 276 and 274 First Avenue	A4WVSB01	soil	A4WVSB01 (8-12)	To evaluate the subsurface soil quality where MGP type odor and staining were noted at 10.5 ft bgs along the northeast side of water valve excavation 31.	5/14/2008	X	X	X			X		
		soil	A4WVSB01 (16-20)	To evaluate the subsurface soil quality where MGP type odor and staining were noted at 10.5 ft bgs along the northeast side of water valve excavation 31 and determine vertical extent of impacts.	5/14/2008	X	X	X			X		

**Table 3-2  
Monitoring Well Construction Data Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Well ID	Installed By	Screened Aquifer Zone	General Lithology in Screened Interval	Top of Casing Elevation (ft NAVD88)	Total Depth of Well (ft bgs)	Screened Interval (ft bgs)		Screen Elevation (ft NAVD88)	
						Top of Screen	Bottom of Screen	Top of Screen	Bottom of Screen
<b>East 14th Street Station Monitoring Wells</b>									
14MWS01	H&A	Shallow	SAND and CLAY* (FILL*)	6.68	19	7	17	0.1	-10.32
14MWD01	H&A	Intermediate	SILT and SAND (FILL)	6.63	34	22	32	-15.05	-25.37
14MWDD01	GEI	Deep	SAND (Glacial Outwash)	6.65	54	44	54	-37.01	-47.35
14MWS02	H&A	Shallow	Silty SAND (FILL)	8.05	19	7	17	1.57	-8.95
14MWD02	H&A	Intermediate	No Log Available	7.37	34	22	32	-14.21	-24.63
14MWDD02	GEI	Deep	Sandy CLAY and SAND (Glacial Lacustrine & Glacial Outwash)	8.15	49.5	39.5	49.5	-31.13	-41.35
MW-36	N/A	Shallow	No Log Available	5.44	15	5	15	0.68	-9.56
14MWDD03	GEI	Deep	Silty SAND and SAND (Glacial Lacustrine & Glacial Outwash)	5.2	58	48	58	-42.52	-52.8
MW-10	N/A	Shallow	No Log Available	5.87	15	5	15	1.07	-9.13
14MWD05	GEI	Intermediate	Silty SAND and SAND (Glacial Lacustrine & Glacial Outwash)	5.61	32	22	32	-16.23	-26.39
14MWDD05	GEI	Deep	Silty SAND and SAND (Glacial Lacustrine & Glacial Outwash)	5.45	51	41	51	-35.27	-45.55
<b>East 17th Street Station Monitoring Wells</b>									
17MWS03	H&A	Shallow	Silty SAND (FILL)	10.85	19.1	7.1	17.1	4.23	-6.25
17MWD03	H&A	Intermediate	SAND and CLAY (FILL & Glacial Lacustrine)	11.19	33.6	21.6	31.6	-10.21	-20.41
17MWDD03	GEI	Deep	SILT, SAND and CLAY (Glacial Lacustrine)	10.71	53	43	53	-31.99	-42.29
17MWS04	H&A	Shallow	Silty SAND* (FILL*)	11.02	19	7	17	4.38	-5.98
17MWD04	H&A	Intermediate	SAND (FILL)	11.19	34	22	32	-10.65	-20.81
17MWDD04	GEI	Deep	SILT and SAND (FILL, Organic Deposits & Glacial Lacustrine)	10.87	51	41	51	-29.51	-40.13
17MWS05	GEI	Shallow	SAND and Silty SAND (FILL)	5.97	17	7	17	-0.85	-11.03
17MWD05	GEI	Intermediate	Silty CLAY and SAND (FILL & Glacial Lacustrine)	5.41	32	22	32	-15.91	-26.59
17MWDD05	GEI	Deep	SILT and SAND (Glacial Lacustrine)	5.83	51	43	51	-36.91	-45.17
17MWS06	GEI	Shallow	Silty SAND and SAND (FILL)	6.05	17	5	17	1.45	-10.95
17MWD06	GEI	Intermediate	Silty SAND and SAND (FILL & Glacial Lacustrine)	6.19	32	22	32	-15.59	-25.81
17MWDD06	GEI	Deep	Silty SAND and SAND (Glacial Lacustrine)	5.67	51	43	51	-36.59	-45.33
<b>East 19th Street Station Monitoring Wells</b>									
19MWS05	H&A	Shallow	Silty SAND* (FILL*)	11.59	17.5	5.5	15.5	6.61	-3.91
19MWD05	H&A	Intermediate	SILT, SAND, PEAT (FILL, Organic Deposits & Glacial Lacustrine)	11.91	32.5	20.5	30.5	-8.17	-18.59
<b>Background Monitoring Wells</b>									
00MWS06	H&A	Shallow	SAND and Silty SAND* (FILL and Estuary Deposits*)	11.08	19.2	7.2	17.2	4.06	-6.12
00MWD06	H&A	Intermediate	SAND and CLAY* (Glacial Lacustrine*)	11.22	34	22	32	-10.54	-20.78
00MWS07	H&A	Shallow	Silty SAND* (FILL & Glacial Lacustrine*)	22.11	27	15	25	7.25	-2.89
00MWD07	H&A	Intermediate	SAND and CLAY* (Glacial Lacustrine*)	22.01	42.5	30.6	40.6	-8.27	-18.59

**Notes:**

1. Wells were constructed using 2-inch PVC Casing threaded to 2-inch Schedule 40 PVC riser.
2. Wells installed during H&A SC activities (2004) or GEI RI activities (2006), with the exception of MW-10 and MW-36.
3. \* - Lithology is assumed based on nearby borings; observations of soil encountered in noted interval were not described; other general lithology and well const. data taken from boring logs and well construction logs.

**Table 3-3  
Groundwater Elevation Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Well ID	Screened Aquifer Zone	Well Elevation (ft NAVD88)			Groundwater Elevation (ft NAVD88)	
		Top of Casing	Top of Screen	Bottom of Screen	June 2006	September 2008
<b>East 14th Street Station</b>						
14MWS01	Shallow	6.68	0.1	-9.9	0.97	-0.45
14MWD01	Intermediate	6.63	-15.05	-25.05	0.48	0.54
14MWDD01	Deep	6.65	-37.01	-47.01	0.54	0.57
14MWS02	Shallow	8.05	1.57	-8.43	3.29	2.53
14MWD02	Intermediate	7.37	-14.21	-24.21	1.46	1.29
14MWDD02	Deep	8.15	-31.13	-41.13	-1.61	1.05
MW-36	Shallow	5.44	0.68	-9.32	1.19	-0.09
14MWDD03	Deep	5.2	-42.52	-52.52	0.1	0.32
MW-10	Shallow	5.87	1.07	-8.93	0.67	-0.27*
14MWD05	Intermediate	5.61	-16.23	-26.23	0.43	0.23
14MWDD05	Deep	5.45	-35.27	-45.27	0.41	0.50
<b>East 17th Street Station</b>						
17MWS03	Shallow	10.85	4.23	-5.77	1.98	2.09
17MWD03	Intermediate	11.19	-10.21	-20.21	1.49	1.06
17MWDD03	Deep	10.71	-31.99	-41.99	1.97	2.10
17MWS04	Shallow	11.02	4.38	-5.62	2.02	1.47
17MWD04	Intermediate	11.19	-10.65	-20.65	1.44	1.59
17MWDD04	Deep	10.87	-29.51	-39.51	2.12	2.66*
17MWS05	Shallow	5.97	-0.85	-10.85	-0.17	-0.50
17MWD05	Intermediate	5.41	-15.91	-25.91	0.63	0.60
17MWDD05	Deep	5.83	-36.91	-46.91	0.22	0.84
17MWS06	Shallow	6.05	1.45	-8.55	1.44	-0.27
17MWD06	Intermediate	6.19	-15.59	-25.59	1.24	0.41
17MWDD06	Deep	5.67	-36.59	-46.59	-1.85	0.47
<b>East 19th Street Station</b>						
19MWS05	Shallow	11.59	6.61	-3.39	4.14	4.36
19MWD05	Intermediate	11.91	-8.17	-18.17	2.11	2.80
<b>Background Wells</b>						
00MWS06	Shallow	11.08	4.06	-5.94	4.75	6.25*
00MWD06	Intermediate	11.22	-10.54	-20.54	2.96	1.8*
00MWS07	Shallow	22.11	7.25	-2.75	4.72	4.51
00MWD07	Intermediate	22.01	-8.27	-18.27	4.86	4.78

**Notes:**

1. Wells were constructed using 2-inch PVC Casing threaded to 2-inch Schedule 40 PVC riser.
  2. Survey data from GEI well survey performed in June 2006 as part of the RI activities;
  3. Well screen interval data calculated using H&A and GEI well construction logs and 2006 survey points.
- \* Depth to water measurements taken between August 19 and August 21, 2008.

**Table 3-4**  
**Hydraulic Conductivity and Gradient Values for Upper Glacial Aquifer**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Rising Head Hydraulic Conductivity Test Results (Bouwer & Rice Method) <sup>(1)</sup>				
Well ID	General Lithology of Screened Interval	Site-Specific Calculated Hydraulic Conductivity Values		Standard K Values for Similar Geologic Materials (cm/sec) (after Freeze and Cherry, 1979)
		K (ft/day)	K (cm/sec)	
<b>Water Table Interval</b>				
14MWS01	SAND and CLAY* (FILL*)	15.3	5.40E-03	1E-01 to 1E-05
17MWS04	Silty SAND* (FILL*)	169	6.00E-02	1E-01 to 1E-05
<b>Deeper Overburden Interval</b>				
14MWD01	SILT and SAND	129	4.50E-02	1E-01 to 1E-07
Area	Well Span	Lateral Hydraulic Gradient (i) (measured from contour map Figure 4-8)		
		2006 Data		2008 Data
<b>Water Table Interval</b>				
Central Portion of Stuyvesant Town	00MWS07 and 17MWS04		1.90E-03	2.50E-03
Southeast Corner of former E. 14 <sup>th</sup> Street Station	14MWS01 and 14MWS02		1.00E-02	1.60E-02
<b>Deeper Overburden Interval</b>				
Eastern Portion of Stuyvesant Town	17MWD04 and 17MWD06		4.60E-04	3.00E-03
Southern Side of former E. 14 <sup>th</sup> Street Station	14MWD01 and 14MWD02		8.00E-03	6.00E-03

**Notes:**

1. Aquifer Test Toolbox Version 2C: Aquifer Test Software for Scientists and Engineering for Microsoft Excel Version 5.0 by Creative Scientific Applications, July 15, 1999
2. \* - Lithology is assumed based on nearby borings; observations of soil encountered in noted interval were not described; other general lithology and well construction details taken from boring logs and well construction logs
3. Wells tested were installed by H&A during the Site Characterization activities; wells were constructed using 2-inch PVC casing threaded to 2-inch Schedule 40 PVC riser.

**Abbreviations:**

ft/day = feet per day

cm/sec = centimeters per second

**Table 3-5**  
**Summary of Investigation Derived Waste**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

<b>Date</b>	<b>Manifest No.</b>	<b>No. of Drums</b>	<b>Liquid (007)</b>	<b>C+D (008)</b>	<b>Soil (009)</b>
5/14/2008	BL139679	12	0	9	3
5/28/2008	BL140059	18	3	6	9
7/9/2008	BL141773	38	8	21	9
9/30/2008	BL144607	5	3	2	0
<b>Totals:</b>		<b>73</b>	<b>14</b>	<b>38</b>	<b>21</b>

**Notes:**

The numbers in parentheses next to the waste type correspond to the codes used by the waste hauler on the manifests.

**Table 3-6**  
**Environmental Investigation and QA/QC Sample Collection Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sampling Program	Sampling Method	Analytical Parameters	Number of Investigation Samples		Number of Field Blanks		Number of Blind Duplicates		Number of MS/MSDs		Number of Trip Blanks	
			2006 RI	2008 RI	2006 RI	2008 RI	2006 RI	2008 RI	2006 RI	2008 RI	2006 RI	2008 RI
Indoor and Outdoor Air	Summa canister vacuum extraction	VOCs plus TICs	7	0	0	0	1	0	0	0	0	0
Soil Gas/Vapor	Summa canister vacuum extraction	VOCs plus TICs Helium (Tracer Gas)	13	0	0	0	1	0	0	0	0	0
Surface and Subsurface Soil	Grab from utility-clearance test holes and from soil boring sampling equipment	TCL VOCs	61	37	3	1	4	3	3	2	6	5
		TCL SVOCs	61	37								
		Cyanide (Total & Amenable)	55	37								
		TAL Metals	55	37								
Groundwater	Peristaltic pump with dedicated disposable tubing (Low-flow Method)	TCL VOCs	28	29	1	4	2	5	2	2	10	4
		TCL SVOCs	28	29								
		Cyanide (Total & Amenable)	28	28								
		TAL Metals (Total)	28	28								
		TAL Metals (Dissolved)	18	0								

**Notes:**

MS/MSD - matrix spike and matrix spike duplicate samples; considered one sample set for purpose of QA/QC sample tallies

SVOCs - semivolatle organic compounds

TAL - target analyte list

TCL - target compound list

TICs - tentatively identified compounds

VOCs - volatile organic compounds

**Table 4-1**  
**Vertical Hydraulic Head Differential Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Well Pair	Linear Distance Between Center of Screens (dl; in feet)	Vertical Head Differential (dh; in feet)		Vertical Gradient (iv) <sup>(1)</sup>		Vertical Gradient Direction	
		2006 Data	2008 Data	2006 Data	2008 Data	2006 Data	2008 Data
<b>Water Table to Deeper Overburden Groundwater Zone</b>							
00MWS06 to 00MWD06	14.6	-1.79	4.45	-0.123	0.305	Down	Up
00MWS07 to 00MWD07	15.52	0.14	-0.27	0.009	-0.017	Up	Down
14MWS01 to 14MWD01	15.15	-0.49	-0.99	-0.032	-0.065	Down	Down
14MWS02 to 14MWD02	15.78	-1.83	1.24	-0.116	0.079	Down	Up
MW10 to 14MWD05	17.3	-0.24	-0.5	-0.014	-0.029	Down	Down
17MWS03 to 17MWD03	14.44	-0.49	1.03	-0.034	0.071	Down	Up
17MWS04 to 17MWD04	15.03	-0.58	-0.12	-0.039	-0.008	Down	Down
17MWS05 to 17MWD05	15.06	0.8	-1.1	0.053	-0.073	Up	Down
17MWS06 to 17MWD06	17.04	-0.2	-0.68	-0.014	-0.040	Down	Down
19MWS05 to 19MWD05	14.78	-2.03	1.56	-0.137	0.106	Down	Up
<b>Deeper Horizons of Overburden Groundwater Zone</b>							
14MWD01 to 14MWDD01	21.96	0.06	-0.03	0.003	-0.001	Up	Down
14MWD02 to 14MWDD02	16.92	-3.07	0.24	-0.181	0.014	Down	Up
14MWD05 to 14MWDD05	19.04	-0.02	-0.27	-0.001	-0.014	Down	Down
17MWD03 to 17MWDD03	21.78	0.48	-1.04	0.022	-0.048	Up	Down
17MWD04 to 17MWDD04	18.86	0.68	-1.07	0.036	-0.057	Up	Down
17MWD05 to 17MWDD05	21	-0.41	-0.24	-0.02	-0.011	Down	Down
17MWD06 to 17MWDD06	21	-3.09	-0.06	-0.147	-0.003	Down	Down

**Notes:**

1. For vertical gradient calculation,  $iv = dh/dl$
2. Measurements taken from survey and well data collected in June 2006 and September 2008

**Abbreviations:**

1. dh = change in head between two wells (in feet)
2. dl = linear distance between centers of two well screens (in feet) (GEI, 2007)



**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH001 0 - 0.2 2/19/2004 H&A	14GH002 0 - 0.2 2/23/2004 H&A	14GH002 DUP 0 - 0.2 2/23/2004 H&A	14GH003 0 - 0.2 2/24/2004 H&A	14GH004 0 - 0.2 2/23/2004 H&A	ST14SB02 0 - 0.2 3/17/2006 GEI	14GH005 0 - 0.2 2/13/2004 H&A	14GH005 DUP 0 - 0.2 2/13/2004 H&A	14GH006 0 - 0.2 2/20/2004 H&A	14GH007 0 - 0.2 2/24/2004 H&A
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.0041	0.0018	0.0012	0.0077	0.0049	0.028 U	0.0048	0.0051	0.0023	0.0028
Toluene	0.0028	1.5	0.00023 U	0.0051 J	0.0022 J	0.00022 U	0.0024 J	0.028 U	0.0031 U	0.0034 U	0.0016 J	0.00023 U
Ethylbenzene	0.000139	5.5	0.00022 U	0.0008 J	0.00023 U	0.00022 U	0.00022 U	0.028 U	0.0006 J	0.0007 J	0.00022 U	0.00022 U
Xylene, total	0.000472	1.2	0.00053 U	0.0016 J	0.00057 U	0.00054 U	0.00053 U	0.056 U	0.0022 J	0.0029 J	0.0017 J	0.00053 U
Total BTEX	NE	NE	0.0041	0.0093	0.0034	0.0077	0.0073	ND	0.0076	0.0087	0.0056	0.0028
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.033 J	0.092 J	0.09 J	0.04 J	0.057 J	0.14 U	0.042	0.059	0.045 J	0.033 J
Butanone,2-	0.00202	0.3	0.0011 U	0.016 J	0.017 J	R	R	0.14 U	0.0011 U	0.0011 U	0.0093 J	R
Carbon disulfide	0.00156	2.7	0.00033 U	0.0028 J	0.0021 J	0.0011 J	0.0006 J	0.028 U	0.00033 U	0.00034 U	0.00034 U	0.00033 U
Chloroform	NE	0.3	0.00025 U	0.00027 U	0.00027 U	0.00026 U	0.00025 U	0.028 U	0.00025 U	0.00026 U	0.00026 U	0.00025 U
Tetrachloroethene	0.000149	1.4	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.028 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U
Total VOCs	NE	10	0.0371	0.1201	0.1125	0.0488	0.0649	ND	0.0496	0.0677	0.0599	0.0358
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	0.0072	NA	0.022	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.018 U	0.26 J	0.28 J	0.12 J	0.15 J	0.37 U	0.12 J	0.055 J	0.078 J	0.22 J
Acenaphthene	0.117	50	0.0033 U	0.65 J	0.0067 U	0.29 J	0.76 J	0.15 J	0.29 J	0.33 J	0.16 J	0.69 J
Acenaphthylene	0.259	41	0.0033 U	0.82	0.74 J	0.46	1.4	0.091 J	0.36 J	0.34 J	0.34 J	1.3 J
Anthracene	0.488	50	0.003 U	2	1.6	0.78	3.1	0.56	1	0.96 J	0.66	3
Benzo[g,h,i]perylene	0.565	50	0.0042 U	3.7	2.8	1.9	4.8	0.63	2	2.2	1.5	7
Fluoranthene	3.416	50	0.06 J	13	8.8	4.6	15	2.9	6.3	6.7	3.5	18
Fluorene	0.267	50	0.0027 U	0.52 J	0.52 J	0.24 J	0.87	0.18 J	0.25 J	0.27 J	0.11 J	0.64 J
Naphthalene	0.476	13	0.0034 U	0.57 J	0.64 J	0.28 J	0.43 J	0.087 J	0.34 J	0.19 J	0.19 J	0.49 J
Phenanthrene	3.949	50	0.043 J	6.4	5.1	3.2	13	2.4	3.5	3.7	2.2	13
Pyrene	4.525	50	0.061 J	16	9.7	5.1	17	2.7	5.8	6.4	3.6	20
Total Noncarcinogenic PAHs	NE	NE	0.164	43.92	30.18	16.97	56.51	9.698	19.96	21.145	12.338	64.34
<b>Carcinogenic PAHs (mg/kg)</b>												
Benz[a]anthracene	2.599	0.224	0.027 J	6.2	4.5	2.8	8.5	1.8	3.5	3.6	2.6	10
Benzo[a]pyrene	1.046	0.061	0.0029 U	6.2	4.5	3	7.7	1.8	3.1	2.9	3.2	10
Benzo[b]fluoranthene	0.728	1.1	0.003 U	4.7	3.5	2.5	6.3	2.3	2.4	2.7	2.4	8.2
Benzo[k]fluoranthene	0.996	1.1	0.0041 U	5.7	4.3	2.8	6.8	0.68	3.3	3.4	2.8	10
Chrysene	1.267	0.4	0.041 J	7	5	2.9	9.5	1.8	3.4	3.5	2.6	11
Dibenz[a,h]anthracene	0.162	0.014	0.0026 U	1.2	0.72	0.45	0.44	0.061 J	0.005 UJ	0.012 UJ	0.0026 UJ	1.7
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.0025 U	3.3	2.6	1.7	4.5	0.55	2	2	1.7 J	6.4
Total Carcinogenic PAHs	NE	NE	0.068	34.3	25.12	16.15	43.74	8.991	17.7	18.1	15.3	57.3
Benzo(a)pyrene Equivalents	1.046	0.061	0.00311	8.947	6.373	4.207	10.233	2.3508	3.957	3.799	3.924	14.37
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	0.232	78.22	55.3	33.12	100.25	18.689	37.66	39.245	27.638	121.64
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.024 U	0.048 UJ	0.26 J	0.024 U	0.24 J	0.08 J	0.046 U	0.12 U	0.24 J	0.12 U
Carbazole	0.131	NE	0.0029 U	0.62 J	0.45 J	0.32 J	0.82	0.1 J	0.33 J	0.36 J	0.2 J	0.56 J
Dibenzofuran	0.197	6.2	0.02 U	0.55 J	0.6 J	0.17 J	0.44 J	0.095 J	0.15 J	0.13 J	0.11 J	0.32 J
Dimethylphenol, 2,4	0.021	NE	0.036 U	0.073 U	0.073 U	0.016 J	0.072 U	0.37 U	0.07 U	0.18 U	0.036 U	0.18 U
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.023 U	0.023 U	0.011 U	0.022 U	0.37 U	0.022 U	0.055 U	0.011 U	0.058 U
Methylphenol, 4	0.08	0.9	0.039 U	0.041 J	0.052 J	0.029 J	0.039 J	0.37 U	0.022 J	0.19 U	0.025 J	0.049 J
Methylphenol,2	0.021	0.1	0.035 U	0.072 U	0.072 U	0.011 J	0.071 U	0.37 U	0.069 U	0.17 U	0.035 U	0.18 U
Phenol	0.042	0.03	0.052 UJ	0.11 U	0.11 U	0.052 U	0.1 U	0.37 U	0.1 U	0.26 U	0.052 U	0.27 U
Total SVOCs	NE	500	0.232	79.431	56.662	33.666	101.789	18.964	38.162	39.735	28.213	122.569
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	NA	32.48	25.17	13.82	46.7	8.14	4.11	2.2	8.16	53.9
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	1.5 J	7.2	6.3	7.2	6.3	4.4 J	7.6	7.3	5.4	6.3
Barium	124.7	300	53	1080	592	483	492	258 J	564	575	584	597
Cadmium	0.2	1	0.093 U	0.40 J	0.30 J	0.44 J	0.65 J	0.56 UJ	0.72 J	0.61 J	0.094 U	0.28 J
Chromium	36.69	10	18.3 J	18.7	16.9	14.8	17.9	17.3 J	15.8 J	16.2 J	12.5	15.8
Lead	237.7	237.7	16.1	780	450	513	582	331 J	552 J	496 J	596	585
Mercury	1.305	0.1	0.06	1.2	1.4	2	1.5	0.611	1.4	1.4	1	2.3
Selenium	NE	2	0.90 U	0.99 U	1.00 U	0.98 U	0.98 U	0.89	0.96 U	0.98 U	0.99 U	0.99 U
Silver	0.229	0.229	0.16 U	0.60 J	0.45 J	1.6 J	0.64 J	1.1 UJ	0.78 J	0.57 J	0.32 J	4.1
Aluminum	7960	7960	6800	7100	6920	6500	6510	6830 J	6310 J	6540 J	5980	6340
Antimony	NE	SB	0.90 UJ	1.4 U	1.4 U	1.3 U	1.4 U	15.2 J	5	1.7 J	1.4 U	1.4 U
Beryllium	0.463	0.16	0.42 J	0.37 J	0.34 J	0.34 J	0.33 J	0.44 J	0.32 J	0.33 J	0.37 J	0.34 J
Calcium	11563	11563	1670	14600	14900	12700	16500	15500 J	17100 J	16800 J	13800	14100
Cobalt	5.698	30	7.0 J	32.1	26.8	8.6 J	17.9	7.2 J	18.8	14.3	10.8 J	8.0 J
Copper	35.84	25	39.9	2400	61.6	58.1	77.3	44.6 J	70.6	61.7	51.8	98.4
Iron	14369	2000	13200 J	17800	15900	16700	18000	15000 J	24000 J	17500 J	12900	16700
Magnesium	3129	3129	2730	3870	3660	3350	3710	3220 J	3910	3950	2750	3250
Manganese	358.5	358.5	259 J	236	215	254	267	265 J	276	262	270	248
Nickel	15.3	13	13.3	17.8	17	16.9	16.7	15.6 J	17.7	16.4	13.2	16.1
Potassium	1193	1193	1380	2020	1890	1350 J	1610	1610 J	1500	1710	925 J	1440 J
Sodium	214.8	214.8	116 J	487 J	448 J	494 J	635 J	829 J	605 J	686 J	667 J	200 J
Vanadium	30.25	150	26.8	23.6	21.9	21.3	20.7	21.5 J	22.7	20.9	17	21.5
Zinc	81.77	20	46.1 J	439	362	354	405	152 J	451	420	340	471
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.5 U	0.5 U	0.5 U	13.2	11.7	0.563 U	17.2	20.8	0.5 U	0.5 U

**NOTES:**

Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

Table Abbreviations, References, and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH008 0 - 0.2 2/20/2004 H&A	14GH009 0 - 0.2 2/12/2004 H&A	14GH009 DUP 0 - 0.2 2/12/2004 H&A	14GH010 0 - 0.2 3/17/2004 H&A	14GH011 0 - 0.2 3/16/2004 H&A	14GH012 0 - 0.2 3/15/2004 H&A	14GH013 0 - 0.2 3/16/2004 H&A	14GH014 0 - 0.2 3/12/2004 H&A	14PH001 0 - 0.2 2/25/2004 H&A	14PH002 0 - 0.2 3/9/2004 H&A
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.017	0.0012	0.0015	0.001 J	0.006	0.0011	0.00032 U	0.001 J	0.012	0.00023 U
Toluene	0.0028	1.5	0.0052 J	0.0026 J	0.0036 J	0.0016 J	0.0012 J	0.0009 J	0.0027 J	0.0015 J	0.0038 J	0.0011 J
Ethylbenzene	0.000139	5.5	0.001 J	0.00023 U	0.00023 U	0.00022 U	0.00022 U	0.0002 U	0.00028 U	0.0002 U	0.00022 U	0.0002 U
Xylene, total	0.000472	1.2	0.0023 J	0.00057 U	0.00056 U	0.00054 U	0.00054 U	0.00048 U	0.00066 U	0.0005 U	0.00053 U	0.0005 U
Total BTEX	NE	NE	0.0255	0.0038	0.0051	0.0026	0.0072	0.002	0.0027	0.0025	0.0158	0.0011
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.056 J	0.021 J	0.023 J	0.024	0.022	0.027	0.0033 U	0.023	0.035 J	0.0025 UJ
Butanone,2-	0.00202	0.3	0.012 J	R	R	R	R	R	R	R	0.0011 U	R
Carbon disulfide	0.00156	2.7	0.00034 U	0.00035 U	0.00035 U	0.00034 UJ	0.0011 J	0.0003 UJ	0.00041 UJ	0.00031 UJ	0.00033 U	0.00031 U
Chloroform	NE	0.3	0.00026 U	0.00027 U	0.00027 U	0.00026 U	0.0018 J	0.00023 U	0.00032 U	0.00024 U	0.00025 U	0.00024 U
Tetrachloroethene	0.000149	1.4	0.00019 U	0.0002 U	0.0002 U	0.0008 J	0.00019 U	0.00017 U	0.00024 U	0.00017 U	0.00019 U	0.00017 U
Total VOCs	NE	10	0.0935	0.0248	0.0281	0.0274	0.0321	0.029	0.0027	0.0255	0.0508	0.0011
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.2 J	0.12 J	0.087 J	0.018 U	0.015 J	0.016 U	0.14 J	0.01 J	0.02 J	0.015 J
Acenaphthene	0.117	50	0.37 J	0.36 J	0.25 J	0.0032 U	0.023 J	0.003 U	0.16 J	0.025 J	0.04 J	0.034 J
Acenaphthylene	0.259	41	0.88	0.53	0.4	0.0032 U	0.049 J	0.003 U	0.63	0.029 J	0.0031 U	0.1 J
Anthracene	0.488	50	1.4	1	0.82	0.016 J	0.054 J	0.045 J	0.86	0.21 J	0.049 J	0.23 J
Benzo[g,h,i]perylene	0.565	50	2	1.9	1.5	0.076 J	0.19 J	0.13 J	1.2	0.72	0.004 U	1.1
Fluoranthene	3.416	50	7.2	5.4	4.2	0.17 J	0.44	0.51	5.3	2.3	0.022 J	2.4
Fluorene	0.267	50	0.35 J	0.32 J	0.25 J	0.0026 U	0.018 J	0.0024 U	0.16 J	0.03 J	0.014 J	0.03 J
Naphthalene	0.476	13	0.47	0.42	0.3 J	0.0034 U	0.026 J	0.0031 U	0.41 J	0.019 J	0.0033 U	0.05 J
Phenanthrene	3.949	50	4.4	3.6	2.9	0.076 J	0.23 J	0.23 J	2.4	0.79	0.35 J	0.84
Pyrene	4.525	50	7.2	5.6	4.4	0.15 J	0.43 J	0.45	5.9	2	0.028 J	2.6
Total Noncarcinogenic PAHs	NE	NE	24.47	19.25	15.107	0.488	1.475	1.365	17.16	6.133	0.523	7.399
<b>Carcinogenic PAHs (mg/kg)</b>												
Benz[a]anthracene	2.599	0.224	4.1	3.3	2.5	0.093	0.23	0.23	3.5	1.1	0.01 U	1.6
Benzo[a]pyrene	1.046	0.061	4.4	2.9	2.3	0.1	0.25	0.21	3.7	1	0.0027 U	1.6
Benzo[b]fluoranthene	0.728	1.1	4.9	2.6	2.3	0.096	0.24	0.24	2.7	0.89	0.0028 U	1.1
Benzo[k]fluoranthene	0.996	1.1	3.5	2.7	2	0.088	0.26 J	0.23 J	5	1.3 J	0.0038 U	1.7 J
Chrysene	1.267	0.4	4.1	3.2	2.6	0.1 J	0.28 J	0.28 J	3.7	1.2	0.0046 U	1.8
Dibenz[a,h]anthracene	0.162	0.014	0.0026 UJ	0.0026 UJ	0.0025 UJ	0.031 J	0.06	0.059	0.54	0.29	0.0024 U	0.49
Indeno[1,2,3-cd]pyrene	0.509	3.2	2.3 J	1.9	1.5	0.063	0.16	0.13	1.3	0.69	0.0024 U	0.99
Total Carcinogenic PAHs	NE	NE	23.3	16.6	13.2	0.571	1.48	1.379	20.44	6.47	ND	9.28
Benzo(a)pyrene Equivalents	1.046	0.061	5.606	3.739	2.976	0.15808	0.3784	0.3341	5.077	1.583	ND	2.494
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	47.77	35.85	28.307	1.059	2.955	2.744	37.6	12.603	0.523	16.679
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.16 J	0.083 J	0.11 J	0.096 J	0.023 U	0.6	0.1 J	0.31 J	0.022 U	0.022 U
Carbazole	0.131	NE	0.4	0.36 J	0.26 J	0.0028 U	0.023 J	0.035 J	0.13 J	0.054 J	0.0027 U	0.054 J
Dibenzofuran	0.197	6.2	0.24 J	0.21 J	0.15 J	0.02 U	0.01 J	0.018 U	0.2 J	0.012 J	0.019 U	0.016 J
Dimethylphenol, 2,4	0.021	NE	0.022 J	0.014 J	0.0087 J	0.035 U	0.035 U	0.032 U	0.043 U	0.032 U	0.034 U	0.033 U
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.071 J	0.014 U	0.01 U	0.011 U	0.01 U
Methylphenol, 4	0.08	0.9	0.057 J	0.038 J	0.024 J	0.038 U	0.038 U	0.035 U	0.026 J	0.035 U	0.037 U	0.036 U
Methylphenol,2	0.021	0.1	0.014 J	0.0096 J	0.034 U	0.034 U	0.034 U	0.032 U	0.011 J	0.032 U	0.034 U	0.033 U
Phenol	0.042	0.03	0.052 U	0.052 U	0.051 U	0.051 U	0.051 U	0.047 U	0.063 U	0.047 U	0.05 U	0.048 U
Total SVOCs	NE	500	48.663	36.5646	28.8597	1.155	2.988	3.45	38.067	12.979	0.523	16.749
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	17.02	12.2	12.65	NA	NA	NA	20.89	1.8	0.73	3.26
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	6.1	8.4	6.1	17.5	4.6	1.7 J	6.7	2.9 J	5.2 J	2.1 J
Barium	124.7	300	541	752	746	111	129	13.6 J	90.1	22.0 J	54.4	20.8 J
Cadmium	0.2	1	0.30 J	0.16 J	0.20 J	0.091 U	0.10 J	0.23 J	0.63 J	0.33 J	0.22 J	1.0 J
Chromium	36.69	10	15.1	15	14	25.8	10.6	6.2	13.2	9.2	23.5	5.8
Lead	237.7	237.7	530	1220	561	23.3	107	12.7	106	89.2	109	52.5
Mercury	1.305	0.1	2	1	1.4	0.23	0.19	0.07	0.26	0.1	0.28	0.12
Selenium	NE	2	0.98 U	0.99 U	0.97 U	0.96 U	0.95 U	0.81 U	1.2 U	0.83 U	0.87 U	0.84 U
Silver	0.229	0.229	0.58 J	0.33 U	0.32 U	0.32 U	0.32 U	0.15 U	0.40 U	0.15 U	0.16 U	0.15 U
Aluminum	7960	7960	6270	7330	5460	10500	4700	1630	6730	2070	5340	1740
Antimony	NE	SB	1.4 UJ	1.4 UJ	1.2 J	1.3 U	1.3 U	0.81 U	1.6 U	0.83 U	0.87 U	0.84 U
Beryllium	0.463	0.16	0.30 J	0.41 J	0.32 J	0.79	0.34 J	0.14 J	0.43 J	0.19 J	0.29 J	0.13 J
Calcium	11563	11563	21000	23300	16900	29700	25200	617 J	44000	611 J	3980	576 J
Cobalt	5.698	30	15.9	6.9 J	7.5 J	6.7 J	3.9 J	2.2 J	3.7 J	2.9 J	3.3 J	2.6 J
Copper	35.84	25	55.6	60.3	76.4	23.5	22.2	13.9	54.8	34.5	29.9	19.4
Iron	14369	2000	16300	19600	12400	24500	11200	7660	11200	9100	10000	6480
Magnesium	3129	3129	3640	2960	2740	4350	3760	682 J	5140	686 J	1450	656 J
Manganese	358.5	358.5	252	273	210	85.1	189	115	129	127	173	113
Nickel	15.3	13	16.9	15.4	14.7	19	9.5	7.7 J	10.4 J	13.6	10.6	7.1 J
Potassium	1193	1193	1370	1310	1040 J	1540	751 J	466 J	661 J	431 J	508 J	574 J
Sodium	214.8	214.8	406 J	626 J	434 J	605 J	286 J	75.1 U	416 J	76.7 U	80.3 U	78.1 U
Vanadium	30.25	150	20.1	21.4	17.8	23.1	15.3	15.9	16.3	27	23.2	14.8
Zinc	81.77	20	351	488	367	28.5	84.1	39.8	970	83.7	83	58.9
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.5 U	2.6	2.6	0.5 U	0.66	0.5 U	0.5 U	0.5 U	0.67	0.69

**NOTES:**

Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

Table Abbreviations, References, and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14PH003 0 - 0.2 3/8/2004 H&A
<b>BTEX (mg/kg)</b>			
Benzene	0.00223	0.06	0.00025 U
Toluene	0.0028	1.5	0.00022 U
Ethylbenzene	0.000139	5.5	0.00022 U
Xylene, total	0.000472	1.2	0.00054 U
Total BTEX	NE	NE	ND
<b>Other VOCs (mg/kg)</b>			
Acetone	0.141	0.2	0.0027 UJ
Butanone, 2-	0.00202	0.3	R
Carbon disulfide	0.00156	2.7	0.00034 U
Chloroform	NE	0.3	0.00026 U
Tetrachloroethene	0.000149	1.4	0.00019 U
Total VOCs	NE	10	ND
<b>VOC TICs (mg/kg)</b>			
Total VOC TICs	NE	NE	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>			
Methylnaphthalene, 2	0.106	36.4	0.018 U
Acenaphthene	0.117	50	0.01 J
Acenaphthylene	0.259	41	0.0033 U
Anthracene	0.488	50	0.11 J
Benzo[g,h,i]perylene	0.565	50	0.59
Fluoranthene	3.416	50	1.6
Fluorene	0.267	50	0.0027 U
Naphthalene	0.476	13	0.0034 U
Phenanthrene	3.949	50	0.44
Pyrene	4.525	50	1.5
Total Noncarcinogenic PAHs	NE	NE	4.25
<b>Carcinogenic PAHs (mg/kg)</b>			
Benz[a]anthracene	2.599	0.224	0.89
Benzo[a]pyrene	1.046	0.061	0.93
Benzo[b]fluoranthene	0.728	1.1	0.89
Benzo[k]fluoranthene	0.996	1.1	0.94
Chrysene	1.267	0.4	0.96
Dibenz[a,h]anthracene	0.162	0.014	0.0026 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.61
Total Carcinogenic PAHs	NE	NE	5.22
Benzo(a)pyrene Equivalents	1.046	0.061	1.188
<b>Total PAHs (mg/kg)</b>			
Total PAHs	NE	NE	9.47
<b>Other SVOCs (mg/kg)</b>			
Bis(2-ethylhexyl)phthalate	0.823	50	0.14 J
Carbazole	0.131	NE	0.044 J
Dibenzofuran	0.197	6.2	0.02 U
Dimethylphenol, 2,4	0.021	NE	0.036 U
Di-n-butyl phthalate	0.064	8.1	0.011 U
Methylphenol, 4	0.08	0.9	0.014 J
Methylphenol, 2	0.021	0.1	0.035 U
Phenol	0.042	0.03	0.4
Total SVOCs	NE	500	10.068
<b>SVOC TICs (mg/kg)</b>			
Total SVOC TICs	NE	NE	1.46
<b>Metals (mg/kg)</b>			
Arsenic	13.63	7.5	0.80 U
Barium	124.7	300	15.4 J
Cadmium	0.2	1	0.29 J
Chromium	36.69	10	4.9
Lead	237.7	237.7	52.8
Mercury	1.305	0.1	0.06
Selenium	NE	2	0.91 U
Silver	0.229	0.229	0.16 U
Aluminum	7960	7960	1450
Antimony	NE	SB	0.91 U
Beryllium	0.463	0.16	0.11 J
Calcium	11563	11563	532 J
Cobalt	5.698	30	1.8 J
Copper	35.84	25	19
Iron	14369	2000	4960
Magnesium	3129	3129	546 J
Manganese	358.5	358.5	89.8
Nickel	15.3	13	8.0 J
Potassium	1193	1193	407 J
Sodium	214.8	214.8	107 J
Vanadium	30.25	150	14.4
Zinc	81.77	20	64.9
<b>Cyanide (mg/kg)</b>			
Cyanide, Total	0.705	NE	0.5 U

**NOTES:**

Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

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**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>BTEX (mg/kg)</b>									
Benzene	0.00223	0.06	21	17	0	NA	0.001	0.017	0.0036
Toluene	0.0028	1.5	21	14	0	NA	0.0009	0.005	0.002
Ethylbenzene	0.000139	5.5	21	4	0	NA	0.0006	0.001	0
Xylene, total	0.000472	1.2	21	5	0	NA	0.0016	0.003	0.001
Total BTEX	NE	NE	21	19	NE	NE	0.0011	0.026	0.0059
<b>Other VOCs (mg/kg)</b>									
Acetone	0.141	0.2	21	17	0	NA	0.021	0.092	0.034
Bromodichloromethane	NE	NE	21	0	NE	NE	ND	ND	ND
Bromoform	NE	NE	21	0	NE	NE	ND	ND	ND
Bromomethane	NE	NE	19	0	NE	NE	ND	ND	ND
Butanone,2-	0.00202	0.3	9	4	0	NA	0.0093	0.017	0.006
Carbon disulfide	0.00156	2.7	21	5	0	NA	0.0006	0.003	0.0004
Carbon tetrachloride	NE	0.6	21	0	NA	NA	ND	ND	ND
Chlorobenzene	NE	1.7	21	0	NA	NA	ND	ND	ND
Chloroethane	NE	1.9	21	0	NA	NA	ND	ND	ND
Chloroform	NE	0.3	21	1	0	NA	0.0018	0.0018	0.00009
Chloromethane	NE	NE	21	0	NE	NE	ND	ND	ND
Dibromochloromethane	NE	NE	21	0	NE	NE	ND	ND	ND
Dichloroethane,1,1-	NE	0.2	21	0	NA	NA	ND	ND	ND
Dichloroethane,1,2-	NE	0.1	21	0	NA	NA	ND	ND	ND
Dichloroethene, cis-1,2-	0.000241	NE	21	0	NE	NE	ND	ND	ND
Dichloroethene,1,1-	NE	0.4	21	0	NA	NA	ND	ND	ND
Dichloropropane,1,2-	NE	NE	21	0	NE	NE	ND	ND	ND
Dichloropropene, cis-1,3	NE	NE	21	0	NE	NE	ND	ND	ND
Dichloropropene, trans-1,3	NE	NE	21	0	NE	NE	ND	ND	ND
Hexanone,2-	NE	NE	21	0	NE	NE	ND	ND	ND
Methyl-2-pentanone,4-	NE	1	21	0	NA	NA	ND	ND	ND
Methylene chloride	0.00104	0.1	21	0	NA	NA	ND	ND	ND
Styrene	NE	NE	21	0	NE	NE	ND	ND	ND
Tetrachloroethane,1,1,2,2-	NE	0.6	21	0	NA	NA	ND	ND	ND
Tetrachloroethene	0.000149	1.4	21	1	0	NA	0.0008	0.0008	0.00004
Trans-1,2-dichloroethene	NE	0.3	21	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,1-	NE	0.8	21	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,2-	NE	NE	21	0	NE	NE	ND	ND	ND
Trichloroethene	0.00021	0.7	21	0	NA	NA	ND	ND	ND
Vinyl chloride	NE	0.2	21	0	NA	NA	ND	ND	ND
Methylcyclohexane	NE	NE	1	0	NE	NE	ND	ND	ND
Methyl acetate	NE	NE	1	0	NE	NE	ND	ND	ND
Dibromo-3-chloropropane,1,2-	NE	NE	1	0	NE	NE	ND	ND	ND
Dibromoethane,1,2-	NE	NE	1	0	NE	NE	ND	ND	ND
Trichlorobenzene,1,2,4-	NE	3.4	21	0	NA	NA	ND	ND	ND
Isopropyl benzene	NE	NE	1	0	NE	NE	ND	ND	ND
Methyl tert-butyl ether	NE	NE	1	0	NE	NE	ND	ND	ND
Cyclohexane	NE	NE	1	0	NE	NE	ND	ND	ND
Trichlorofluoromethane	NE	NE	1	0	NE	NE	ND	ND	ND
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	6	1	0	NA	NA	ND	ND	ND
Dichlorodifluoromethane	NE	NE	1	0	NE	NE	ND	ND	ND
<b>Total VOCs (mg/kg)</b>									
Total VOCs	NE	10	21	19	0	NA	0.0011	0.12	0.0434
<b>VOC TICs (mg/kg)</b>									
Total VOC TICs	NE	NE	2	2	NE	NE	0.0072	0.022	0.0146
<b>Noncarcinogenic PAHs (mg/kg)</b>									
Methylnaphthalene,2-	0.106	36.4	21	16	0	NA	0.01	0.28	0.09
Acenaphthene	0.117	50	21	17	0	NA	0.01	0.76	0.2187
Acenaphthylene	0.259	41	21	16	0	NA	0.029	1.4	0.4033
Anthracene	0.488	50	21	20	0	NA	0.016	3.1	0.8788
Benzo[g,h,i]perylene	0.565	50	21	19	0	NA	0.076	7	1.7112
Fluoranthene	3.416	50	21	21	0	NA	0.022	18	5.162
Fluorene	0.267	50	21	17	0	NA	0.014	0.87	0.2272
Naphthalene	0.476	13	21	16	0	NA	0.019	0.64	0.2339
Phenanthrene	3.949	50	21	21	0	NA	0.043	13	3.2761
Pyrene	4.525	50	21	21	0	NA	0.028	20	5.5533
Total Noncarcinogenic PAHs	NE	NE	21	21	NE	NE	0.164	64.34	17.7545

**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Carcinogenic PAHs (mg/kg)</b>									
Benz[a]anthracene	2.599	0.224	21	20	18	11	0.027	10	2.9081
Benzo[a]pyrene	1.046	0.061	21	19	19	14	0.1	10	2.8471
Benzo[b]fluoranthene	0.728	1.1	21	19	13	13	0.096	8.2	2.4265
Benzo[k]fluoranthene	0.996	1.1	21	19	14	14	0.088	10	2.738
Chrysene	1.267	0.4	21	20	16	14	0.041	11	3.0934
Dibenz[a,h]anthracene	0.162	0.014	21	12	12	8	0.031	1.7	0.2877
Indeno[1,2,3-cd]pyrene	0.509	3.2	21	19	3	3	0.063	6.4	1.6378
Total Carcinogenic PAHs	NE	NE	21	20	NE	NE	0.068	57.3	15.9385
Benzo(a)pyrene Equivalents	1.046	0.061	21	20	19	16	0.0031	14.37	3.8904
<b>Total PAHs (mg/kg)</b>									
Total PAHs	NE	NE	21	21	NE	NE	0.232	121.64	33.693
<b>Other SVOCs (mg/kg)</b>									
Bis(2-chloroethoxy)methane	NE	NE	21	0	NE	NE	ND	ND	ND
Bis(2-chloroethyl)ether	NE	NE	21	0	NE	NE	ND	ND	ND
Bis(chloroisopropyl)ether	NE	NE	21	0	NE	NE	ND	ND	ND
Bis(2-ethylhexyl)phthalate	0.823	50	21	12	0	NA	0.08	0.6	0.1152
Bromophenyl phenyl ether,4-	NE	NE	21	0	NE	NE	ND	ND	ND
Butyl benzyl phthalate	0.024	50	21	0	NA	NA	ND	ND	ND
Carbazole	0.131	NE	21	18	NE	NE	0.023	0.82	0.2438
Chloro-3-methylphenol,4-	NE	0.24	21	0	NA	NA	ND	ND	ND
Chloroaniline,4-	NE	0.22	21	0	NA	NA	ND	ND	ND
Chloronaphthalene,2-	NE	NE	21	0	NE	NE	ND	ND	ND
Chlorophenol,2-	NE	0.8	21	0	NA	NA	ND	ND	ND
Chlorophenyl phenyl ether,4-	NE	NE	21	0	NE	NE	ND	ND	ND
Dibenzofuran	0.197	6.2	21	16	0	NA	0.01	0.6	0.162
Dichlorobenzene,1,2-	NE	7.9	21	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,3-	0.03	1.6	21	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,4-	0.0265	8.5	21	0	NA	NA	ND	ND	ND
Dichlorobenzidine,3,3-	NE	NE	21	0	NE	NE	ND	ND	ND
Dichlorophenol,2,4-	NE	0.4	21	0	NA	NA	ND	ND	ND
Diethyl phthalate	0.01	7.1	21	0	NA	NA	ND	ND	ND
Dimethyl phthalate	NE	2	21	0	NA	NA	ND	ND	ND
Dimethylphenol, 2,4-	0.021	NE	21	4	NE	NE	0.0087	0.022	0.00289
Di-n-butyl phthalate	0.064	8.1	21	1	0	NA	0.071	0.071	0.00338
Dinitro-2-methylphenol,4,6-	NE	NE	21	0	NE	NE	ND	ND	ND
Dinitrophenol,2,4-	NE	0.2	21	0	NA	NA	ND	ND	ND
Dinitrotoluene,2,4-	NE	NE	21	0	NE	NE	ND	ND	ND
Dinitrotoluene,2,6-	NE	1	21	0	NA	NA	ND	ND	ND
Di-n-octyl phthalate	NE	50	21	0	NA	NA	ND	ND	ND
Hexachlorobenzene	NE	0.41	21	0	NA	NA	ND	ND	ND
Hexachlorobutadiene	NE	NE	21	0	NE	NE	ND	ND	ND
Hexachlorocyclopentadiene	NE	NE	21	0	NE	NE	ND	ND	ND
Hexachloroethane	NE	NE	21	0	NE	NE	ND	ND	ND
Isophorone	NE	4.4	21	0	NA	NA	ND	ND	ND
Methylphenol, 4-	0.08	0.9	21	12	0	NA	0.014	0.057	0.01981
Methylphenol,2-	0.021	0.1	21	4	0	NA	0.0096	0.014	0.00217
Nitroaniline,2-	NE	0.43	21	0	NA	NA	ND	ND	ND
Nitroaniline,3-	NE	0.5	21	0	NA	NA	ND	ND	ND
Nitroaniline,4-	NE	NE	21	0	NE	NE	ND	ND	ND
Nitrobenzene	NE	0.2	21	0	NA	NA	ND	ND	ND
Nitrophenol,2-	NE	0.33	21	0	NA	NA	ND	ND	ND
Nitrophenol,4-	NE	0.1	21	0	NA	NA	ND	ND	ND
N-Nitrosodi-n-propylamine	NE	NE	21	0	NE	NE	ND	ND	ND
N-Nitrosodiphenylamine	NE	NE	21	0	NE	NE	ND	ND	ND
Pentachlorophenol	NE	1	21	0	NA	NA	ND	ND	ND
Phenol	0.042	0.03	21	1	1	1	0.4	0.4	0.01905
Trichlorophenol,2,4,5-	NE	0.1	21	0	NA	NA	ND	ND	ND
Trichlorophenol,2,4,6-	NE	NE	21	0	NE	NE	ND	ND	ND
Benzaldehyde	NE	NE	1	0	NE	NE	ND	ND	ND
Caprolactam	NE	NE	1	0	NE	NE	ND	ND	ND
Atrazine	NE	NE	1	0	NE	NE	ND	ND	ND
Biphenyl,1,1-	NE	NE	1	0	NE	NE	ND	ND	ND
Acetophenone	NE	NE	1	0	NE	NE	ND	ND	ND
<b>Total SVOCs (mg/kg)</b>									
Total SVOCs	NE	500	21	21	0	NA	0.232	122.569	34.2614
<b>SVOC TICs (mg/kg)</b>									
Total SVOC TICs	NE	NE	17	17	NE	NE	0.73	53.9	15.57

**Table 5-1  
East 14th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Interim Remedial Investigation Report  
New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Metals (mg/kg)</b>									
Arsenic	13.63	7.5	21	20	3	1	1.5	17.5	5.7524
Barium	124.7	300	21	21	11	11	13.6	1,080	370.16
Cadmium	0.2	1	21	17	0	NA	0.1	1	0.32667
Chromium	36.69	10	21	21	17	0	4.9	25.8	14.6429
Lead	237.7	237.7	21	21	12	12	12.7	1,220	369.743
Mercury	1.305	0.1	21	21	17	8	0.06	2.3	0.88481
Selenium	NE	2	21	1	0	NA	0.89	0.89	0.04238
Silver	0.229	0.229	21	9	9	9	0.32	4.1	0.45905
Aluminum	7960	7960	21	21	1	1	1,450.00	10,500	5,669.05
Antimony	NE	SB	21	4	NE	NE	1.2	15.2	1.1
Beryllium	0.463	0.16	21	21	18	1	0.11	0.79	0.33571
Calcium	11563	11563	21	21	15	15	532	44,000	14,480.30
Cobalt	5.698	30	21	21	1	1	1.8	32.1	9.94762
Copper	35.84	25	21	21	16	14	13.9	2,400	160.6429
Iron	14369	2000	21	21	21	11	4,960.00	24,500	14,338.10
Magnesium	3129	3129	21	21	12	12	546	5,140	2,905.24
Manganese	358.5	358.5	21	21	0	NA	85.1	276	205.1381
Nickel	15.3	13	21	21	15	11	7.1	19	13.98095
Potassium	1193	1193	21	21	12	12	407	2,020	1,166.33
Sodium	214.8	214.8	21	17	14	14	107	829	383.1905
Thallium	NE	SB	21	0	NA	NA	ND	ND	ND
Vanadium	30.25	150	21	21	0	NA	14.4	27	20.34286
Zinc	81.77	20	21	21	21	16	28.5	970	288.5238
<b>Cyanide (mg/kg)</b>									
Cyanide, Total	0.705	NE	21	9	NE	NE	0.66	20.8	3.339048
Cyanide, Amenable	NE	NE	1	0	NE	NE	ND	ND	ND

**Table 5-2  
East 17th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	17CY001 0 - 0.2 2/4/2004 H&A	17CY002 0 - 0.2 2/19/2004 H&A	17CY003 0 - 0.2 2/5/2004 H&A	17CY004 0 - 0.2 2/13/2004 H&A	17CY005 0 - 0.2 2/13/2004 H&A	17CY005 DUP 0 - 0.2 2/13/2004 H&A	17CY006 0 - 0.2 2/6/2004 H&A	ST17SB01 0 - 0.2 3/13/2006 GEI	ST17SB02 0 - 0.2 3/13/2006 GEI	17CY007 0 - 0.2 1/29/2004 H&A	ST17SB03 0 - 0.2 3/15/2006 GEI
<b>BTEX (mg/kg)</b>													
Benzene	0.00223	0.06	0.00028 U	0.00028 U	0.00032 U	0.0016	0.0025	0.0011 J	0.0025	0.027 U	0.031 U	0.00034 U	0.03 U
Toluene	0.0028	1.5	0.00024 U	0.0039 J	0.00029 U	0.0017 U	0.0046 U	0.0024 U	0.0059 J	0.027 U	0.031 U	0.0016 J	0.03 U
Ethylbenzene	0.00139	5.5	0.00024 U	0.00024 U	0.00029 U	0.0007 J	0.00023 U	0.0006 J	0.00024 U	0.027 U	0.031 U	0.0037 J	0.03 U
Xylene, total	0.000472	1.2	0.00057 U	0.00058 U	0.0007 U	0.0022 J	0.0018 J	0.002 J	0.0014 J	0.054 U	0.062 U	0.02 J	0.06 U
Total BTEX	NE	NE	ND	0.0039	ND	0.0045	0.0043	0.0037	0.0098	ND	ND	0.0253	ND
<b>Other VOCs (mg/kg)</b>													
Acetone	0.141	0.2	0.055	0.003 UJ	0.054	0.04	0.092	0.081	0.018 J	0.14 U	0.15 U	0.016 J	0.15 U
Butanone, 2-	0.00202	0.3	0.0012 U	0.0012 U	0.0014 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.14 U	0.15 U	0.0015 U	0.15 U
Methylene chloride	0.00104	0.1	0.00028 U	0.0012 U	0.00034 U	0.00024 U	0.0016 U	0.00028 U	0.0007 U	0.027 U	0.031 U	0.0094 U	0.052 UJ
Total VOCs	NE	10	0.055	0.0039	0.054	0.0445	0.0963	0.0847	0.0278	ND	ND	0.0413	ND
<b>VOC TICs (mg/kg)</b>													
Total VOC TICs	NE	NE	0.0079	NA	NA	NA	NA	NA	NA	NA	NA	0.0078	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>													
Methylnaphthalene, 2	0.106	36.4	0.019 U	0.012 J	0.031 J	0.12 J	0.052 J	0.1 J	0.02 J	0.36 U	2.1 U	0.02 J	0.39 U
Acenaphthene	0.117	50	0.023 J	0.059 J	0.096 J	0.13 J	0.099 J	0.42	0.055 J	0.36 U	0.43 J	0.052 J	0.39 U
Acenaphthylene	0.259	41	0.0034 U	0.0036 U	0.0081 J	0.32 J	0.15 J	0.12 J	0.061 J	0.36 U	2.1 U	0.036 J	0.39 U
Anthracene	0.488	50	0.053 J	0.12 J	0.27 J	0.45 J	0.32 J	0.76	0.25 J	0.069 J	0.84 J	0.17 J	0.39 U
Benzo[ghi]perylene	0.565	50	0.093 J	0.3 J	0.52	0.63 J	0.29 J	0.55	1.1	0.19 J	0.85 J	0.64 J	0.13 J
Fluoranthene	3.416	50	0.37 J	0.89	1.9	2.7	1.7	3.4	2.7	0.61	6.3	1.4	0.53
Fluorene	0.267	50	0.021 J	0.003 U	0.079 J	0.16 J	0.095 J	0.34 J	0.057 J	0.36 U	2.1 U	0.0036 U	0.39 U
Naphthalene	0.476	13	0.022 J	0.0038 U	0.07 J	0.24 J	0.099 J	0.25 J	0.041 J	0.36 U	2.1 U	0.0047 U	0.39 U
Phenanthrene	3.949	50	0.24 J	0.61	1.1	1.9	1.1	2.8	0.9	0.4	3.2 J	0.66	0.26 J
Pyrene	4.525	50	0.33 J	0.89	1.8 J	2.6	1.8	3.2	2.6	0.57	5.1	1.6	0.5
Total Noncarcinogenic PAHs	NE	NE	1.152	2.881	5.947	9.25	5.705	11.94	7.784	1.839	16.72	4.578	1.42
<b>Carcinogenic PAHs (mg/kg)</b>													
Benzo[a]anthracene	2.599	0.224	0.16	0.34	0.91	1.5	0.91	1.7	1.8	0.31 J	3.1	0.76	0.28 J
Benzo[a]pyrene	1.046	0.061	0.14	0.36	0.88	1.3	0.94	1.6	2	0.3 J	3	0.84 J	0.26 J
Benzo[b]fluoranthene	0.728	1.1	0.13	0.34	0.8	1.1	0.82	1.4	2.1	0.37	4.5	0.73 J	0.34 J
Benzo[k]fluoranthene	0.996	1.1	0.16	0.32	0.85	1.3	1.1	1.7	2	0.13 J	1.7 J	0.87 J	0.17 J
Chrysene	1.267	0.4	0.19 J	0.44	1	1.5	1.1	1.8	2.2	0.35 J	3.4	0.97	0.31 J
Dibenz[a,h]anthracene	0.162	0.014	0.0026 U	0.0028 U	0.046 J	0.2 J	0.086	0.13	0.0026 UJ	0.36 U	2.1 U	0.2 J	0.39 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.084	0.26	0.48	0.63	0.34	0.59	1.1	0.16 J	0.52 J	0.56 J	0.12 J
Total Carcinogenic PAHs	NE	NE	0.864	2.06	4.966	7.53	5.296	8.92	11.2	1.62	16.22	4.93	1.14
Benzo(a)pyrene Equivalents	1.046	0.061	0.1809	0.4616	1.1635	1.851	1.255	2.134	2.542	0.3888	3.863	1.2634	0.3388
<b>Total PAHs (mg/kg)</b>													
Total PAHs	NE	NE	2.016	4.941	10.913	16.78	11.001	20.86	18.984	3.459	32.94	9.508	2.56
<b>Other SVOCs (mg/kg)</b>													
Bis(2-ethylhexyl)phthalate	0.823	50	0.31 U	0.78	0.87	0.25 U	0.49	0.43	1 U	0.11 J	1.2 J	0.81	0.19 J
Butyl benzyl phthalate	0.024	50	0.016 U	0.017 U	0.021 U	0.031 U	0.016 U	0.11 J	0.016 U	0.36 U	2.1 U	0.022 U	0.39 U
Carbazole	0.131	NE	0.029 J	0.085 J	0.12 J	0.21 J	0.14 J	0.41	0.12 J	0.36 U	0.46 J	0.086 J	0.39 U
Dibenzofuran	0.197	6.2	0.013 J	0.026 J	0.044 J	0.12 J	0.067 J	0.2 J	0.025 J	0.36 U	2.1 U	0.027 U	0.39 U
Dichlorobenzene, 1,4	0.0265	8.5	0.046 U	0.05 U	0.01 J	0.088 U	0.046 U	0.046 U	0.046 U	0.027 U	0.031 U	0.062 U	0.03 U
Di-n-butyl phthalate	0.064	8.1	0.012 U	0.1 J	0.12 J	0.022 U	0.083 J	0.087 J	0.14 J	0.36 U	2.1 U	0.14 J	0.39 U
Methylphenol, 4	0.08	0.9	0.04 U	0.043 U	0.05 U	0.03 J	0.04 U	0.04 U	0.016 J	0.36 U	2.1 U	0.052 U	0.39 U
Phenol	0.042	0.03	0.054 U	0.058 UJ	0.068 U	0.1 U	0.054 U	0.054 U	0.046 J	0.36 U	2.1 U	0.071 U	0.39 U
Total SVOCs	NE	500	2.058	5.932	12.077	17.14	11.781	22.097	19.331	3.569	34.6	10.544	3.09
<b>SVOC TICs (mg/kg)</b>													
Total SVOC TICs	NE	NE	2.29	19.35	13.27	4.07	11.01	20.8	14.17	1.46	7.47	34.78	4.236
<b>Metals (mg/kg)</b>													
Arsenic	13.63	7.5	1.2 J	8.3	11.9	5.8	9.9	11.2	9.4	12.8	6.5 J	16.1	13.4
Barium	124.7	300	25.3 J	41.9 J	155	135	287	290	60.6	46.9 J	57 J	119	83 J
Cadmium	0.2	1	0.097 U	0.10 J	0.81 J	0.21 J	0.48 J	0.54 J	0.30 J	0.55 UJ	0.62 UJ	0.59 J	0.58 UJ
Chromium	36.69	10	8.6	30.5 J	349	29.3 J	69.7 J	82.6 J	64.8	19.4 J	63.1 J	129	46.5 J
Lead	237.7	237.7	14.0 J	129	230 J	244 J	200 J	158 J	137 J	56.9 J	178 J	194	85.7 J
Mercury	1.305	0.1	0.05 J	0.37	0.58 J	0.64	0.6	0.51	0.58 J	0.112	0.339	0.96	0.932
Selenium	NE	2	0.94 U	1.1 J	1.2 U	0.96 U	1.0 U	1.0 U	1.0 U	1.1 U	2.6 J	3.1 U	1.4 J
Silver	0.229	0.229	0.17 U	0.34 J	0.98 J	0.35 J	0.46 J	0.41 J	0.34 U	1.1 UJ	0.22 J	1.1 J	1.2 UJ
Aluminum	7960	7960	3840	8900	10400	7450 J	8890 J	10000 J	6260 J	6130 J	5970 J	8960	9510 J
Antimony	NE	SB	0.94 UJ	1.0 UJ	2.3 J	1.5 J	1.8 J	1.4 U	1.4 UJ	6.6 UJ	7.5 UJ	1.2 U	9.6 J
Beryllium	0.463	0.16	0.19 J	0.26 J	0.44 J	0.34 J	0.46 J	0.51	0.35 J	0.31 J	0.34 J	0.50 J	0.55 J
Calcium	11563	11563	3830 J	374 J	17700 J	7520 J	5980 J	3960 J	5190 J	2160 J	5160 J	9090	1990 J
Cobalt	5.698	30	3.7 J	2.2 J	4.1 J	5.5 J	5.1 J	5.3 J	3.1 J	3.6 J	4.5 J	4.5 J	6.4 J
Copper	35.84	25	12.0 J	61	54.8 J	41.9	55.2	54.3	50.2 J	28.8 J	39.9 J	53.7	32.3 J
Iron	14369	2000	10400	11300 J	16300	14200 J	14200 J	14800 J	11800	11600 J	12800 J	14900	17200 J
Magnesium	3129	3129	1920	692 J	8620	3180	2570	2040	2570	1640 J	2510 J	4550	1600 J
Manganese	358.5	358.5	201 J	78.4 J	212 J	258	264	312	170	419 J	234 J	263	450 J
Nickel	15.3	13	8.1 J	9.8 J	20.2	17.3	17.4	17.3	15.3	14.1 J	18.1 J	21.1	13.2 J
Potassium	1193	1193	360 J	265 J	508 J	898 J	613 J	512 J	373 J	752 J	824 J	621 J	548 J
Sodium	214.8	214.8	87.3 U	93.6 U	244 J	290 J	143 J	127 J	2030	553 UJ	1100 J	113 J	209 J
Vanadium	30.25	150	13.1	72.1	60.9	27.1	45.2	56.7	38.1	26.7 J	36.5 J	65.8	48.2 J
Zinc	81.77	20	28.2	30.1 J	123	133	152	85.2	129	55.7 J	93.1 J	107	50.1 J
<b>Cyanide (mg/kg)</b>													
Cyanide, Total	0.705	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.553 U	0.629 U	0.5 U	0.595 U

**NOTES:**

Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

Table Abbreviations, References, and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-2  
East 17th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	17CY008 0 - 0.2 1/29/2004 H&A	17CY009 0 - 0.2 2/9/2004 H&A	17CY010 0 - 0.2 2/9/2004 H&A	17GH001 0 - 0.2 2/10/2004 H&A	ST17SB04 0 - 0.2 3/14/2006 GEI	ST17SB05 0 - 0.2 4/4/2006 GEI	ST17SB06 0 - 0.2 5/8/2006 GEI	17GH002 0 - 0.2 2/19/2004 H&A	17GH003 0 - 0.2 2/16/2004 H&A	17GH004 0 - 0.2 2/16/2004 H&A	17GH005 0 - 0.2 2/5/2004 H&A	17GH006 0 - 0.2 2/16/2004 H&A
<b>BTEX (mg/kg)</b>														
Benzene	0.00223	0.06	0.0009 J	0.027	0.0013 J	0.0013	0.027 U	0.026 U	0.026 U	0.00028 U	0.0008 J	0.00032 U	0.0005 J	0.0008 J
Toluene	0.0028	1.5	0.00025 U	0.0051 J	0.0091	0.0014 U	0.0032 J	0.026 U	0.026 U	0.00025 U	0.0026 J	0.00028 U	0.00026 U	0.003 J
Ethylbenzene	0.000139	5.5	0.0015 J	0.00028 U	0.00028 U	0.001 J	0.003 J	0.026 U	0.026 U	0.00025 U	0.00023 U	0.00028 U	0.0006 J	0.00023 U
Xylene, total	0.000472	1.2	0.0079	0.00067 U	0.0015 J	0.0015 J	0.0141 J	0.051 U	0.0066 J	0.0006 U	0.00057 U	0.00066 U	0.0039 J	0.00057 U
Total BTEX	NE	NE	0.0103	0.0321	0.0119	0.0038	0.0203	ND	0.0066	ND	0.0034	ND	0.005	0.0038
<b>Other VOCs (mg/kg)</b>														
Acetone	0.141	0.2	0.0088	0.046 J	0.054 J	0.035 J	0.13 U	0.13 UJ	0.13 U	0.035 J	0.0028 UJ	0.0033 UJ	0.079	0.0028 UJ
Butanone,2-	0.00202	0.3	0.0012 U	0.0014 U	0.0014 U	0.001 U	0.13 U	0.13 UJ	0.13 U	0.0012 U	0.0012 U	0.0014 U	0.0056 J	0.0012 U
Methylene chloride	0.00104	0.1	0.0045 U	0.00032 U	0.00031 U	0.0013 U	0.027 U	0.026 UJ	0.17 UJ	0.0015 U	0.0009 U	0.0028 U	0.0025	0.0086 J
Total VOCs	NE	10	0.0191	0.0781	0.0659	0.0388	0.0203	ND	0.0066	0.035	0.0034	ND	0.0921	0.0124
<b>VOC TICs (mg/kg)</b>														
Total VOC TICs	NE	NE	NA	0.012	NA	NA	NA	NA	NA	NA	NA	NA	0.0089	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>														
Methylnaphthalene,2	0.106	36.4	0.034 J	0.052 J	0.05 J	0.12 J	1.7 U	0.34 U	3.4 U	0.03 J	0.02 J	0.024 J	0.027 J	0.03 J
Acenaphthene	0.117	50	0.043 J	0.18 J	0.18 J	0.039 J	1.7 U	0.34 U	3.4 U	0.039 J	0.13 J	0.08 J	0.07 J	0.1 J
Acenaphthylene	0.259	41	0.0036 U	0.14 J	0.11 J	0.044 J	1.7 U	0.34 U	3.4 U	0.03 J	0.024 J	0.038 J	0.028 J	0.023 J
Anthracene	0.488	50	0.11 J	0.46 J	0.42 J	0.11 J	1.7 U	0.054 J	3.4 U	0.078 J	0.32 J	0.21 J	0.12 J	0.22 J
Benzo[ghi]perylene	0.565	50	0.5	0.89	0.82	0.11 J	1.7 U	0.46	1.1 J	0.13 J	0.55	0.48	0.3 J	0.27 J
Fluoranthene	3.416	50	0.79	2.9	2.5	0.53	1.7 U	0.74	2.8 J	0.64	2.2	2.1	1.1	1.3
Fluorene	0.267	50	0.003 U	0.17 J	0.16 J	0.047 J	1.7 U	0.34 U	3.4 U	0.031 J	0.11 J	0.075 J	0.052 J	0.094 J
Naphthalene	0.476	13	0.0038 U	0.1 J	0.12 J	0.052 J	1.7 U	0.34 U	3.4 U	0.037 J	0.03 J	0.046 J	0.046 J	0.048 J
Phenanthrene	3.949	50	0.5	1.8	1.6	0.41	1.7 UJ	0.18 J	0.78 J	0.41 J	2	1	0.7	1
Pyrene	4.525	50	1.1	2.8	2.4	0.58	1.7 U	0.9	4.6 J	0.62	3 J	1.9 J	1 J	1.1 J
Total Noncarcinogenic PAHs	NE	NE	3.077	9.492	8.36	2.042	ND	2.334	9.28	2.045	8.384	5.953	3.443	4.185
<b>Carcinogenic PAHs (mg/kg)</b>														
Benzo[a]anthracene	2.599	0.224	0.45	1.6	1.4	0.33	1.7 U	0.43	1.4 J	0.28	1.2	1.1	0.47	0.54
Benzo[a]pyrene	1.046	0.061	0.47	1.5	1.3	0.28 J	1.7 U	0.39	1.4 J	0.26	1.1	1.3	0.49	0.51
Benzo[b]fluoranthene	0.728	1.1	0.45	1.5	1.2	0.3 J	1.7 U	0.56	2.2 J	0.25	0.75	1.2	0.49	0.49
Benzo[k]fluoranthene	0.996	1.1	0.49	1.5	1.4	0.4 J	1.7 U	0.18 J	R	0.31	0.9	1.4	0.49	0.58
Chrysene	1.267	0.4	0.57	1.7	1.6	0.42	1.7 U	0.42	1.4 J	0.34 J	1.6	1.4	0.59	0.63
Dibenzo[a,h]anthracene	0.162	0.014	0.16	0.0032 UJ	0.003 UJ	0.0024 UJ	1.7 U	0.34 U	R	0.0028 U	0.13	0.14	0.02 J	0.049
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.4	0.93	0.82	0.12 J	1.7 U	0.41	3.4 UJ	0.13	0.44	0.54	0.28	0.26
Total Carcinogenic PAHs	NE	NE	2.99	8.73	7.72	1.85	ND	2.39	6.4	1.57	6.12	7.08	2.83	3.059
Benzo(a)pyrene Equivalents	1.046	0.061	0.7706	1.935	1.672	0.3632	ND	0.536	1.774	0.3325	1.494	1.752	0.6448	0.7001
<b>Total PAHs (mg/kg)</b>														
Total PAHs	NE	NE	6.067	18.222	16.08	3.892	ND	4.724	15.68	3.615	14.504	13.033	6.273	7.244
<b>Other SVOCs (mg/kg)</b>														
Bis(2-ethylhexyl)phthalate	0.823	50	0.57	0.88 U	0.69 U	0.37	1.7 U	0.34 U	3.4 UJ	0.68	0.2 J	1.5	0.64 U	0.46
Butyl benzyl phthalate	0.024	50	0.017 U	0.019 U	0.019 U	0.015 U	1.7 U	0.34 U	3.4 UJ	0.017 U	0.016 U	0.019 U	0.017 U	0.017 U
Carbazole	0.131	NE	0.064 J	0.23 J	0.23 J	0.03 J	1.7 U	0.34 U	R	0.054 J	0.087 J	0.13 J	0.09 J	0.14 J
Dibenzofuran	0.197	6.2	0.029 J	0.093 J	0.088 J	0.029 J	1.7 U	0.34 U	3.4 U	0.023 J	0.032 J	0.042 J	0.036 J	0.055 J
Dichlorobenzene,1,4	0.0265	8.5	0.05 U	0.056 U	0.054 U	0.042 U	0.027 U	0.026 U	0.026 U	0.05 U	0.045 U	0.055 U	0.017 J	0.0091 J
Di-n-butyl phthalate	0.064	8.1	0.22 J	0.11 J	0.12 J	0.01 U	1.7 U	0.34 U	3.4 U	0.16 J	0.011 U	0.014 U	0.12 J	0.091 J
Methylphenol, 4	0.08	0.9	0.043 U	0.025 J	0.017 J	0.036 U	1.7 U	0.34 U	3.4 U	0.043 U	0.039 U	0.046 U	0.043 U	0.014 J
Phenol	0.042	0.03	0.058 U	0.16 J	0.27 J	0.048 U	1.7 U	0.34 U	3.4 U	0.058 UJ	0.052 U	0.063 U	0.058 U	0.051 J
Total SVOCs	NE	500	6.95	18.84	16.805	4.321	ND	4.724	15.68	4.532	14.823	14.705	6.536	8.0641
<b>SVOC TICs (mg/kg)</b>														
Total SVOC TICs	NE	NE	40.85	23.75	20.55	35.64	0.64	0.24	1.2	17.52	18.52	12.39	16.44	23.8
<b>Metals (mg/kg)</b>														
Arsenic	13.63	7.5	20.3	8.3	5.8	4.5 J	3.5 J	1.17	0.483 J	14.2	10	6.6	15.1	7.7
Barium	124.7	300	103	116	126	35.0 J	15.9 J	8.99 J	12.5 J	78.1	62.5	87.2	141	61.5
Cadmium	0.2	1	0.39 J	0.85 J	0.42 J	0.24 J	0.53 UJ	0.081 J	0.519 UJ	0.10 U	0.094 U	0.87 J	0.27 J	0.78 J
Chromium	36.69	10	135	146	52	3.7	2.5 J	4.76	7.32 J	91.2 J	32.2	106	136	100
Lead	237.7	237.7	229	234 J	589 J	38.4	29.9 J	48.5 J	118	129	48.3	146	115 J	95.5
Mercury	1.305	0.1	0.59	0.42 J	1.0 J	0.07	0.066	0.021 J	0.055	0.64	0.43	0.52	1.0 J	0.35
Selenium	NE	2	5.0 U	1.2 U	1.2 U	0.90 U	1.1 U	1.05 U	1.04 U	1.0 U	0.99 U	1.2 U	1.00 U	1.1 U
Silver	0.229	0.229	0.55 J	0.66 J	0.39 U	0.30 U	1.1 UJ	1.05 UJ	0.752 J	0.39 J	0.33 U	0.54 J	0.52 J	0.59 J
Aluminum	7960	7960	8740	9200 J	7010 J	1460	806 J	1030 J	1160 J	10900	12800 J	7550 J	11500	7840 J
Antimony	NE	SB	1.0 U	1.7 UJ	1.6 UJ	1.2 UJ	6.4 UJ	6.28 UJ	6.22 UJ	1.0 UJ	1.4 UJ	1.6 UJ	1.00 UJ	1.5 UJ
Beryllium	0.463	0.16	0.49 J	0.63	0.43 J	0.11 J	0.13 J	0.071 J	0.075 J	0.51	0.40 J	0.30 J	0.6	0.25 J
Calcium	11563	11563	3370	13200 J	9050 J	127000	102000 J	491 J	1920 J	794 J	1190	4870	3490 J	1800
Cobalt	5.698	30	3.5 J	5.7 J	5.8 J	3.8 J	5.3 UJ	1.59 J	1.86 J	3.6 J	3.3 J	3.8 J	4.6 J	1.9 J
Copper	35.84	25	48.5	72.3 J	51.9 J	13.9 J	4.9 J	16.7	154	77.6	20.6	45.9	43.9 J	45.2
Iron	14369	2000	14100	17200	13600	7920 J	5280 J	4460 J	3610 J	19600 J	16100	12800	15000	12500
Magnesium	3129	3129	1720	5680	3700	70700	59700 J	426 J	660 J	1430	1370	1920	2100	924 J
Manganese	358.5	358.5	175	300	230	169	162 J	84.1 J	62.2 J	229 J	151	174	289 J	83
Nickel	15.3	13	17.8	23.6	25.2	8.8	5.7 J	5.89 J	10.3 J	16	10.1	19.2	16.1	10.1
Potassium	1193	1193	552 J	760 J	732 J	360 J	515 J	250 J	192 J	482 J	346 J	525 J	501 J	353 J
Sodium	214.8	214.8	93.2 UJ	147 J	133 J	142 J	532 UJ	181 J	99.6 J	92.9 U	92.9 U	322 J	92.3 U	99.5 U
Vanadium	30.25	150	78.6	52.4	35.6	11	5.3 UJ	10.9	10.2	78.1	46.3	41.7	61.3	46.8
Zinc	81.77	20	87.5	158	144	49.9	8.6 J	33 J	177 J	54.7 J	34.9	138	64.5	41.5
<b>Cyanide (mg/kg)</b>														
Cyanide, Total	0.705	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.532 U	0.523 U	0.53	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

**NOTES:**  
Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

Table Abbreviations, References, and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.



**Table 5-2  
East 17th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>BTEX (mg/kg)</b>									
Benzene	0.00223	0.06	23	11	0	NA	0.0005	0.027	0.0018
Toluene	0.0028	1.5	23	8	0	NA	0.0016	0.0091	0.0015
Ethylbenzene	0.000139	5.5	23	7	0	NA	0.0006	0.0037	0.0005
Xylene, total	0.000472	1.2	23	11	0	NA	0.0014	0.02	0.0027
Total BTEX	NE	NE	23	15	NE	NE	0.0034	0.0321	0.0065
<b>Other VOCs (mg/kg)</b>									
Acetone	0.141	0.2	23	13	0	NA	0.0088	0.092	0.0267
Bromodichloromethane	NE	NE	23	0	NE	NE	ND	ND	ND
Bromoform	NE	NE	22	0	NE	NE	ND	ND	ND
Bromomethane	NE	NE	23	0	NE	NE	ND	ND	ND
Butanone,2-	0.00202	0.3	23	1	0	NA	0.0056	0.0056	0.0002
Carbon disulfide	0.00156	2.7	23	0	NA	NA	ND	ND	ND
Carbon tetrachloride	NE	0.6	23	0	NA	NA	ND	ND	ND
Chlorobenzene	NE	1.7	22	0	NA	NA	ND	ND	ND
Chloroethane	NE	1.9	23	0	NA	NA	ND	ND	ND
Chloroform	NE	0.3	23	0	NA	NA	ND	ND	ND
Chloromethane	NE	NE	23	0	NE	NE	ND	ND	ND
Dibromochloromethane	NE	NE	22	0	NE	NE	ND	ND	ND
Dichloroethane,1,1-	NE	0.2	23	0	NA	NA	ND	ND	ND
Dichloroethane,1,2-	NE	0.1	23	0	NA	NA	ND	ND	ND
Dichloroethene, cis-1,2-	0.000241	NE	23	0	NE	NE	ND	ND	ND
Dichloroethene,1,1-	NE	0.4	23	0	NA	NA	ND	ND	ND
Dichloropropane,1,2-	NE	NE	23	0	NE	NE	ND	ND	ND
Dichloropropene, cis-1,3	NE	NE	23	0	NE	NE	ND	ND	ND
Dichloropropene, trans-1,3	NE	NE	22	0	NE	NE	ND	ND	ND
Hexanone,2-	NE	NE	22	0	NE	NE	ND	ND	ND
Methyl-2-pentanone,4-	NE	1	23	0	NA	NA	ND	ND	ND
Methylene chloride	0.00104	0.1	23	2	0	NA	0.0025	0.0086	0.0005
Styrene	NE	NE	22	0	NE	NE	ND	ND	ND
Tetrachloroethane,1,1,2,2-	NE	0.6	23	0	NA	NA	ND	ND	ND
Tetrachloroethene	0.000149	1.4	22	0	NA	NA	ND	ND	ND
Trans-1,2-dichloroethene	NE	0.3	23	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,1-	NE	0.8	23	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,2-	NE	NE	22	0	NE	NE	ND	ND	ND
Trichloroethene	0.00021	0.7	23	0	NA	NA	ND	ND	ND
Vinyl chloride	NE	0.2	23	0	NA	NA	ND	ND	ND
Methylcyclohexane	NE	NE	6	0	NE	NE	ND	ND	ND
Methyl acetate	NE	NE	3	0	NE	NE	ND	ND	ND
Dibromo-3-chloropropane,1,2-	NE	NE	6	0	NE	NE	ND	ND	ND
Dibromoethane,1,2-	NE	NE	6	0	NE	NE	ND	ND	ND
Trichlorobenzene,1,2,4-	NE	3.4	23	0	NA	NA	ND	ND	ND
Isopropyl benzene	NE	NE	6	0	NE	NE	ND	ND	ND
Methyl tert-butyl ether	NE	NE	6	0	NE	NE	ND	ND	ND
Cyclohexane	NE	NE	6	0	NE	NE	ND	ND	ND
Trichlorofluoromethane	NE	NE	6	0	NE	NE	ND	ND	ND
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	6	6	0	NA	NA	ND	ND	ND
Dichlorodifluoromethane	NE	NE	6	0	NE	NE	ND	ND	ND
<b>Total VOCs (mg/kg)</b>									
Total VOCs	NE	10	23	18	0	NA	0.0034	0.0963	0.03
<b>VOC TICs (mg/kg)</b>									
Total VOC TICs	NE	NE	4	4	NE	NE	0.0078	0.012	0.01
<b>Noncarcinogenic PAHs (mg/kg)</b>									
Methylnaphthalene,2-	0.106	36.4	23	16	0	NA	0.012	0.12	0.03
Acenaphthene	0.117	50	23	18	0	NA	0.023	0.43	0.1
Acenaphthylene	0.259	41	23	14	0	NA	0.023	0.32	0.05
Anthracene	0.488	50	23	20	0	NA	0.053	0.84	0.23
Benzo[g,h,i]perylene	0.565	50	23	22	0	NA	0.093	1.1	0.47
Fluoranthene	3.416	50	23	22	0	NA	0.37	6.3	1.74
Fluorene	0.267	50	23	14	0	NA	0.021	0.34	0.06
Naphthalene	0.476	13	23	14	0	NA	0.022	0.25	0.05
Phenanthrene	3.949	50	23	22	0	NA	0.18	3.2	1.02
Pyrene	4.525	50	23	22	0	NA	0.33	5.1	1.78
Total Noncarcinogenic PAHs	NE	NE	23	22	NE	NE	1.152	16.72	5.56

**Table 5-2  
East 17th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Carcinogenic PAHs (mg/kg)</b>									
Benz[a]anthracene	2.599	0.224	23	22	21	1	0.16	3.1	0.91
Benzo[a]pyrene	1.046	0.061	23	22	22	9	0.14	3	0.9
Benzo[b]fluoranthene	0.728	1.1	23	22	7	7	0.13	4.5	0.96
Benzo[k]fluoranthene	0.996	1.1	22	21	7	7	0.13	2	0.82
Chrysene	1.267	0.4	23	22	18	9	0.19	3.4	1.04
Dibenz[a,h]anthracene	0.162	0.014	22	10	10	2	0.02	0.2	0.05
Indeno[1,2,3-cd]pyrene	0.509	3.2	23	21	0	NA	0.084	1.1	0.4
Total Carcinogenic PAHs	NE	NE	23	22	NE	NE	0.864	16.22	5.02
Benzo(a)pyrene Equivalents	1.046	0.061	23	22	22	12	0.1809	3.863	1.19
<b>Total PAHs (mg/kg)</b>									
Total PAHs	NE	NE	23	22	NE	NE	2.016	32.94	10.58
<b>Other SVOCs (mg/kg)</b>									
Bis(2-chloroethoxy)methane	NE	NE	23	0	NE	NE	ND	ND	ND
Bis(2-chloroethyl)ether	NE	NE	23	0	NE	NE	ND	ND	ND
Bis(chloroisopropyl)ether	NE	NE	23	0	NE	NE	ND	ND	ND
Bis(2-ethylhexyl)phthalate	0.823	50	23	14	0	NA	0.11	1.5	0.377
Bromophenyl phenyl ether,4-	NE	NE	23	0	NE	NE	ND	ND	ND
Butyl benzyl phthalate	0.024	50	23	1	1	1	0.11	0.11	0.005
Carbazole	0.131	NE	22	18	NE	NE	0.029	0.46	0.123
Chloro-3-methylphenol,4-	NE	0.24	23	0	NA	NA	ND	ND	ND
Chloroaniline,4-	NE	0.22	23	0	NA	NA	ND	ND	ND
Chloronaphthalene,2-	NE	NE	23	0	NE	NE	ND	ND	ND
Chlorophenol,2-	NE	0.8	23	0	NA	NA	ND	ND	ND
Chlorophenyl phenyl ether,4-	NE	NE	23	0	NE	NE	ND	ND	ND
Dibenzofuran	0.197	6.2	23	16	0	NA	0.013	0.2	0.04
Dichlorobenzene,1,2-	NE	7.9	23	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,3-	0.03	1.6	23	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,4-	0.0265	8.5	23	3	0	NA	0.0091	0.017	0.0016
Dichlorobenzidine,3,3-	NE	NE	23	0	NE	NE	ND	ND	ND
Dichlorophenol,2,4-	NE	0.4	23	0	NA	NA	ND	ND	ND
Diethyl phthalate	0.01	7.1	23	0	NA	NA	ND	ND	ND
Dimethyl phthalate	NE	2	23	0	NA	NA	ND	ND	ND
Dimethylphenol, 2,4-	0.021	NE	23	0	NE	NE	ND	ND	ND
Di-n-butyl phthalate	0.064	8.1	23	12	0	NA	0.083	0.22	0.065
Dinitro-2-methylphenol,4,6-	NE	NE	23	0	NE	NE	ND	ND	ND
Dinitrophenol,2,4-	NE	0.2	23	0	NA	NA	ND	ND	ND
Dinitrotoluene,2,4-	NE	NE	23	0	NE	NE	ND	ND	ND
Dinitrotoluene,2,6-	NE	1	23	0	NA	NA	ND	ND	ND
Di-n-octyl phthalate	NE	50	23	0	NA	NA	ND	ND	ND
Hexachlorobenzene	NE	0.41	23	0	NA	NA	ND	ND	ND
Hexachlorobutadiene	NE	NE	23	0	NE	NE	ND	ND	ND
Hexachlorocyclopentadiene	NE	NE	22	0	NE	NE	ND	ND	ND
Hexachloroethane	NE	NE	23	0	NE	NE	ND	ND	ND
Isophorone	NE	4.4	23	0	NA	NA	ND	ND	ND
Methylphenol, 4-	0.08	0.9	23	5	0	NA	0.014	0.03	0.0044
Methylphenol,2-	0.021	0.1	23	0	NA	NA	ND	ND	ND
Nitroaniline,2-	NE	0.43	23	0	NA	NA	ND	ND	ND
Nitroaniline,3-	NE	0.5	22	0	NA	NA	ND	ND	ND
Nitroaniline,4-	NE	NE	23	0	NE	NE	ND	ND	ND
Nitrobenzene	NE	0.2	23	0	NA	NA	ND	ND	ND
Nitrophenol,2-	NE	0.33	23	0	NA	NA	ND	ND	ND
Nitrophenol,4-	NE	0.1	21	0	NA	NA	ND	ND	ND
N-Nitrosodi-n-propylamine	NE	NE	23	0	NE	NE	ND	ND	ND
N-Nitrosodiphenylamine	NE	NE	23	0	NE	NE	ND	ND	ND
Pentachlorophenol	NE	1	23	0	NA	NA	ND	ND	ND
Phenol	0.042	0.03	23	4	4	4	0.046	0.27	0.022913
Trichlorophenol,2,4,5-	NE	0.1	23	0	NA	NA	ND	ND	ND
Trichlorophenol,2,4,6-	NE	NE	23	0	NE	NE	ND	ND	ND
Benzaldehyde	NE	NE	5	0	NE	NE	ND	ND	ND
Caprolactam	NE	NE	6	0	NE	NE	ND	ND	ND
Atrazine	NE	NE	6	0	NE	NE	ND	ND	ND
Biphenyl,1,1-	NE	NE	6	0	NE	NE	ND	ND	ND
Acetophenone	NE	NE	6	0	NE	NE	ND	ND	ND
<b>Total SVOCs (mg/kg)</b>									
Total SVOCs	NE	500	23	22	0	NA	2.058	34.6	11.2
<b>SVOC TICs (mg/kg)</b>									
Total SVOC TICs	NE	NE	23	23	NE	NE	0.24	40.85	15

**Table 5-2**  
**East 17th Street Station Surface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Summary Statistics									
	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Metals (mg/kg)</b>									
Arsenic	13.63	7.5	23	23	14	4	0.483	20.3	8.9
Barium	124.7	300	23	23	0	NA	8.99	290	93.4
Cadmium	0.2	1	23	15	0	NA	0.081	0.87	0.3
Chromium	36.69	10	23	23	18	14	2.5	349	74.3
Lead	237.7	237.7	23	23	2	2	14	589	149.9
Mercury	1.305	0.1	23	23	18	0	0.021	1	0.5
Selenium	NE	2	23	3	3	NE	1.1	2.6	0.2
Silver	0.229	0.229	23	14	13	13	0.22	1.1	0.3
Aluminum	7960	7960	23	23	11	11	806	12800	7230.7
Antimony	NE	SB	23	4	NE	NE	1.5	9.6	0.7
Beryllium	0.463	0.16	23	23	19	7	0.071	0.63	0.4
Calcium	11563	11563	23	23	4	4	374	127000	14440.4
Cobalt	5.698	30	23	22	0	NA	1.59	6.4	3.8
Copper	35.84	25	23	23	18	16	4.9	154	46.9
Iron	14369	2000	23	23	23	8	3610	19600	12681.3
Magnesium	3129	3129	23	23	7	7	426	70700	7922.7
Manganese	358.5	358.5	23	23	2	2	62.2	450	216.1
Nickel	15.3	13	23	23	15	12	5.7	25.2	14.8
Potassium	1193	1193	23	23	0	NA	192	898	514.9
Sodium	214.8	214.8	23	14	5	5	99.6	2030	229.6
Thallium	NE	SB	23	0	NE	NE	ND	ND	ND
Vanadium	30.25	150	23	22	0	NA	10.2	78.6	41.9
Zinc	81.77	20	23	23	22	12	8.6	177	86
<b>Cyanide (mg/Kg)</b>									
Cyanide, Total	0.705	NE	23	1	NE	NE	0.53	0.53	0
Cyanide, Amenable	NE	NE	6	0	NE	NE	ND	ND	ND

**Table 5-3**  
**East 19th Street Station Surface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	19GH001 0 - 0.2 3/11/2004 H&A	19GH002 0 - 0.2 2/24/2004 H&A	19GH003 0 - 0.2 2/24/2004 H&A	ST19SB01 0 - 0.2 3/14/2006 GEI
<b>BTEX (mg/kg)</b>						
Benzene	0.00223	0.06	0.00032 U	0.0008 J	0.0009 J	0.032 U
Toluene	0.0028	1.5	0.00029 U	0.0016 J	0.00024 U	0.032 U
Total BTEX	NE	NE	ND	0.0024	0.0009	ND
<b>Other VOCs (mg/kg)</b>						
Acetone	0.141	0.2	0.084	0.042 J	0.05 J	0.16 U
Total VOCs	NE	10	0.084	0.0444	0.0509	ND
<b>Noncarcinogenic PAHs (mg/kg)</b>						
Methylnaphthalene,2-	0.106	36.4	0.019 J	0.095 J	0.1 J	0.43 U
Acenaphthene	0.117	50	0.057 J	0.0036 U	0.012 J	0.092 J
Acenaphthylene	0.259	41	0.034 J	0.0036 U	0.015 J	0.43 U
Anthracene	0.488	50	0.17 J	0.027 J	0.046 J	0.16 J
Benzo[g,h,i]perylene	0.565	50	0.38 J	0.079 J	0.087 J	0.24 J
Fluoranthene	3.416	50	1.6	0.1 J	0.19 J	1.7
Fluorene	0.267	50	0.056 J	0.015 J	0.02 J	0.43 U
Naphthalene	0.476	13	0.032 J	0.044 J	0.063 J	0.43 U
Phenanthrene	3.949	50	0.76	0.18 J	0.28 J	0.85
Pyrene	4.525	50	1.4	0.12 J	0.18 J	1.4
Total Noncarcinogenic PAHs	NE	NE	4.508	0.66	0.993	4.442
<b>Carcinogenic PAHs (mg/kg)</b>						
Benz[a]anthracene	2.599	0.224	0.77	0.077	0.12	0.78
Benzo[a]pyrene	1.046	0.061	0.72	0.077	0.11	0.77
Benzo[b]fluoranthene	0.728	1.1	0.68	0.073	0.1	1.2
Benzo[k]fluoranthene	0.996	1.1	0.91 J	0.067	0.13	0.48
Chrysene	1.267	0.4	1	0.17 J	0.22 J	0.87
Dibenz[a,h]anthracene	0.162	0.014	0.18	0.0028 U	0.0028 U	0.43 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.4	0.054	0.061	0.15 J
Total Carcinogenic PAHs	NE	NE	4.66	0.518	0.741	4.25
Benzo(a)pyrene Equivalents	1.046	0.061	1.1041	0.09977	0.1416	0.9965
<b>Total PAHs (mg/kg)</b>						
Total PAHs	NE	NE	9.168	1.178	1.734	8.692
<b>Other SVOCs (mg/kg)</b>						
Bis(2-ethylhexyl)phthalate	0.823	50	1	0.025 U	0.15 J	0.43 U
Butyl benzyl phthalate	0.024	50	0.1 J	0.017 U	0.017 U	0.082 J
Carbazole	0.131	NE	0.1 J	0.0031 U	0.023 J	0.1 J
Dibenzofuran	0.197	6.2	0.025 J	0.022 U	0.015 J	0.43 U
Dichlorobenzene,1,4-	0.0265	8.5	0.011 J	0.049 U	0.049 U	0.032 U
Di-n-butyl phthalate	0.064	8.1	0.26 J	0.012 U	0.012 U	0.22 J
Total SVOCs	NE	500	10.664	1.178	1.922	9.094
<b>SVOC TICs (mg/kg)</b>						
Total SVOC TICs	NE	NE	6.03	0.91	0.91	7.26
<b>Metals (mg/kg)</b>						
Arsenic	13.63	7.5	23.8	10.5	50.4	22.7
Barium	124.7	300	81.5	91.4	184	76.9 J
Cadmium	0.2	1	0.82 J	0.10 U	0.10 U	1.1 J
Chromium	36.69	10	144	4.8	8.1	65 J
Lead	237.7	237.7	237	13.6	47.2	1440 J
Mercury	1.305	0.1	0.73	0.05	0.06	0.773
Selenium	NE	2	1.1 U	1.1 U	2.8	3.1 J
Silver	0.229	0.229	0.77 J	0.38 J	0.44 J	0.94 J
Aluminum	7960	7960	10200	1900	2510	10700 J
Beryllium	0.463	0.16	0.41 J	0.30 J	0.43 J	0.52 J
Calcium	11563	11563	3470	1550	2750	2650 J
Cobalt	5.698	30	3.2 J	10.6 J	19.1	4.1 J
Copper	35.84	25	68.8	40.2	75.4	99.5 J
Iron	14369	2000	14500	20600	21800	19000 J
Magnesium	3129	3129	1380 J	214 J	539 J	1560 J
Manganese	358.5	358.5	157	91.9	32.8	201 J
Nickel	15.3	13	20.1	23.5	15.3	23.4 J
Potassium	1193	1193	496 J	195 J	506 J	696 J
Sodium	214.8	214.8	105 U	181 J	237 J	653 UJ
Vanadium	30.25	150	87	10.5 J	12.4 J	99.2 J
Zinc	81.77	20	101	18.7	57.1	109 J
<b>Cyanide (mg/kg)</b>						
Cyanide, Total	0.705	NE	0.5 U	0.5 U	0.5 U	0.653 U

**NOTES:**

Blue indicates a detected result value that does not exceed the NYSDEC RSCO for soil.

Red and bold indicates a detected soil result value exceeding the NYSDEC RSCO.

Red, bold, and gray shading indicated a detected soil result value exceeding both the NYSDEC RSCO and the established SSBV as reported in the H&A Site Characterization Report (SCR), revised 2005.

Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-3  
East 19th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>BTEX (mg/kg)</b>									
Benzene	0.00223	0.06	4	2	0	NA	0.0008	0.0009	0.0004
Toluene	0.0028	1.5	4	1	0	NA	0.0016	0.0016	0.0004
Ethylbenzene	0.000139	5.5	4	0	NA	NA	ND	ND	ND
Xylene, total	0.000472	1.2	4	0	NA	NA	ND	ND	ND
Total BTEX	NE	NE	4	2	NE	NE	0.0009	0.0024	0.000825
<b>Other VOCs (mg/kg)</b>									
Acetone	0.141	0.2	4	3	0	NA	0.042	0.084	0.044
Bromodichloromethane	NE	NE	4	0	NE	NE	ND	ND	ND
Bromoform	NE	NE	4	0	NE	NE	ND	ND	ND
Bromomethane	NE	NE	4	0	NE	NE	ND	ND	ND
Butanone,2-	0.00202	0.3	1	0	NA	NA	ND	ND	ND
Carbon disulfide	0.00156	2.7	4	0	NA	NA	ND	ND	ND
Carbon tetrachloride	NE	0.6	4	0	NA	NA	ND	ND	ND
Chlorobenzene	NE	1.7	4	0	NA	NA	ND	ND	ND
Chloroethane	NE	1.9	4	0	NA	NA	ND	ND	ND
Chloroform	NE	0.3	4	0	NA	NA	ND	ND	ND
Chloromethane	NE	NE	4	0	NE	NE	ND	ND	ND
Dibromochloromethane	NE	NE	4	0	NE	NE	ND	ND	ND
Dichloroethane,1,1-	NE	0.2	4	0	NA	NA	ND	ND	ND
Dichloroethane,1,2-	NE	0.1	4	0	NA	NA	ND	ND	ND
Dichloroethene, cis-1,2-	0.000241	NE	4	0	NE	NE	ND	ND	ND
Dichloroethene,1,1-	NE	0.4	4	0	NA	NA	ND	ND	ND
Dichloropropane,1,2-	NE	NE	4	0	NE	NE	ND	ND	ND
Dichloropropene, cis-1,3	NE	NE	4	0	NE	NE	ND	ND	ND
Dichloropropene, trans-1,3	NE	NE	4	0	NE	NE	ND	ND	ND
Hexanone,2-	NE	NE	4	0	NE	NE	ND	ND	ND
Methyl-2-pentanone,4-	NE	1	4	0	NA	NA	ND	ND	ND
Methylene chloride	0.00104	0.1	4	0	NA	NA	ND	ND	ND
Styrene	NE	NE	4	0	NE	NE	ND	ND	ND
Tetrachloroethane,1,1,2,2-	NE	0.6	4	0	NA	NA	ND	ND	ND
Tetrachloroethene	0.000149	1.4	4	0	NA	NA	ND	ND	ND
Trans-1,2-dichloroethene	NE	0.3	4	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,1-	NE	0.8	4	0	NA	NA	ND	ND	ND
Trichloroethane,1,1,2-	NE	NE	4	0	NE	NE	ND	ND	ND
Trichloroethene	0.00021	0.7	4	0	NA	NA	ND	ND	ND
Vinyl chloride	NE	0.2	4	0	NA	NA	ND	ND	ND
Methylcyclohexane	NE	NE	1	0	NE	NE	ND	ND	ND
Methyl acetate	NE	NE	0	0	NE	NE	ND	ND	ND
Dibromo-3-chloropropane,1,2-	NE	NE	1	0	NE	NE	ND	ND	ND
Dibromoethane,1,2-	NE	NE	1	0	NE	NE	ND	ND	ND
Trichlorobenzene,1,2,4-	NE	3.4	4	0	NA	NA	ND	ND	ND
Isopropyl benzene	NE	NE	1	0	NE	NE	ND	ND	ND
Methyl tert-butyl ether	NE	NE	1	0	NE	NE	ND	ND	ND
Cyclohexane	NE	NE	1	0	NE	NE	ND	ND	ND
Trichlorofluoromethane	NE	NE	1	0	NE	NE	ND	ND	ND
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	6	1	0	NA	NA	ND	ND	ND
Dichlorodifluoromethane	NE	NE	1	0	NE	NE	ND	ND	ND
Total VOCs	NE	10	4	3	0	NE	0.0444	0.084	0.04

**Table 5-3  
East 19th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Noncarcinogenic PAHs (mg/kg)</b>									
Methylnaphthalene,2-	0.106	36.4	4	3	0	NA	0.019	0.1	0.05
Acenaphthene	0.117	50	4	3	0	NA	0.012	0.092	0.04
Acenaphthylene	0.259	41	4	2	0	NA	0.015	0.034	0.01
Anthracene	0.488	50	4	4	0	NA	0.027	0.17	0.1
Benzo[g,h,i]perylene	0.565	50	4	4	0	NA	0.079	0.38	0.2
Fluoranthene	3.416	50	4	4	0	NA	0.1	1.7	0.9
Fluorene	0.267	50	4	3	0	NA	0.015	0.056	0.02
Naphthalene	0.476	13	4	3	0	NA	0.032	0.063	0.03
Phenanthrene	3.949	50	4	4	0	NA	0.18	0.85	0.52
Pyrene	4.525	50	4	4	0	NA	0.12	1.4	0.78
Total Noncarcinogenic PAHs	NE	NE	4	4	NE	NE	0.66	4.508	2.65
<b>Carcinogenic PAHs (mg/kg)</b>									
Benz[a]anthracene	2.599	0.224	4	4	2	0	0.077	0.78	0.44
Benzo[a]pyrene	1.046	0.061	4	4	4	0	0.077	0.77	0.42
Benzo[b]fluoranthene	0.728	1.1	4	4	1	1	0.073	1.2	0.51
Benzo[k]fluoranthene	0.996	1.1	4	4	0	0	0.067	0.91	0.4
Chrysene	1.267	0.4	4	4	2	0	0.17	1	0.57
Dibenz[a,h]anthracene	0.162	0.014	4	1	1	1	0.18	0.18	0.05
Indeno[1,2,3-cd]pyrene	0.509	3.2	4	4	0	NA	0.054	0.4	0.17
Total Carcinogenic PAHs	NE	NE	4	4	NE	NE	0.518	4.66	2.54
Benzo(a)pyrene Equivalents	1.046	0.061	4	4	4	1	0.09977	1.1041	0.59
<b>Total PAHs (mg/kg)</b>									
Total PAHs	NE	NE	4	4	NE	NE	1.178	9.168	5.19
<b>Other SVOCs (mg/kg)</b>									
Bis(2-chloroethoxy)methane	NE	NE	4	0	NE	NE	ND	ND	ND
Bis(2-chloroethyl)ether	NE	NE	4	0	NE	NE	ND	ND	ND
Bis(chloroisopropyl)ether	NE	NE	4	0	NE	NE	ND	ND	ND
Bis(2-ethylhexyl)phthalate	0.823	50	4	2	0	NA	0.15	1	0.29
Bromophenyl phenyl ether,4-	NE	NE	4	0	NE	NE	ND	ND	ND
Butyl benzyl phthalate	0.024	50	4	2	0	NA	0.082	0.1	0.05
Carbazole	0.131	NE	4	3	NE	NE	0.023	0.1	0.06
Chloro-3-methylphenol,4-	NE	0.24	4	0	NA	NA	ND	ND	ND
Chloroaniline,4-	NE	0.22	4	0	NA	NA	ND	ND	ND
Chloronaphthalene,2-	NE	NE	4	0	NE	NE	ND	ND	ND
Chlorophenol,2-	NE	0.8	4	0	NA	NA	ND	ND	ND
Chlorophenyl phenyl ether,4-	NE	NE	4	0	NE	NE	ND	ND	ND
Dibenzofuran	0.197	6.2	4	2	0	NA	0.015	0.025	0.01
Dichlorobenzene,1,2-	NE	7.9	4	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,3-	0.03	1.6	4	0	NA	NA	ND	ND	ND
Dichlorobenzene,1,4-	0.0265	8.5	4	1	0	NA	0.011	0.011	0
Dichlorobenzidine,3,3-	NE	NE	4	0	NE	NE	ND	ND	ND
Dichlorophenol,2,4-	NE	0.4	4	0	NA	NA	ND	ND	ND
Diethyl phthalate	0.01	7.1	4	0	NA	NA	ND	ND	ND
Dimethyl phthalate	NE	2	4	0	NA	NA	ND	ND	ND
Dimethylphenol, 2,4-	0.021	NE	4	0	NE	NE	ND	ND	ND
Di-n-butyl phthalate	0.064	8.1	4	2	0	NA	0.22	0.26	0.12
Dinitro-2-methylphenol,4,6-	NE	NE	4	0	NE	NE	ND	ND	ND
Dinitrophenol,2,4-	NE	0.2	4	0	NA	NA	ND	ND	ND
Dinitrotoluene,2,4-	NE	NE	4	0	NE	NE	ND	ND	ND
Dinitrotoluene,2,6-	NE	1	4	0	NA	NA	ND	ND	ND
Di-n-octyl phthalate	NE	50	4	0	NA	NA	ND	ND	ND
Hexachlorobenzene	NE	0.41	4	0	NA	NA	ND	ND	ND
Hexachlorobutadiene	NE	NE	4	0	NE	NE	ND	ND	ND
Hexachlorocyclopentadiene	NE	NE	4	0	NE	NE	ND	ND	ND
Hexachloroethane	NE	NE	4	0	NE	NE	ND	ND	ND
Isophorone	NE	4.4	4	0	NA	NA	ND	ND	ND
Methylphenol, 4-	0.08	0.9	4	0	NA	NA	ND	ND	ND
Methylphenol,2-	0.021	0.1	4	0	NA	NA	ND	ND	ND
Nitroaniline,2-	NE	0.43	4	0	NA	NA	ND	ND	ND
Nitroaniline,3-	NE	0.5	4	0	NA	NA	ND	ND	ND
Nitroaniline,4-	NE	NE	4	0	NE	NE	ND	ND	ND
Nitrobenzene	NE	0.2	4	0	NA	NA	ND	ND	ND
Nitrophenol,2-	NE	0.33	4	0	NA	NA	ND	ND	ND
Nitrophenol,4-	NE	0.1	3	0	NA	NA	ND	ND	ND
N-Nitrosodi-n-propylamine	NE	NE	4	0	NE	NE	ND	ND	ND
N-Nitrosodiphenylamine	NE	NE	4	0	NE	NE	ND	ND	ND
Pentachlorophenol	NE	1	4	0	NA	NA	ND	ND	ND
Phenol	0.042	0.03	4	0	NA	NA	ND	ND	ND
Trichlorophenol,2,4,5-	NE	0.1	4	0	NA	NA	ND	ND	ND
Trichlorophenol,2,4,6-	NE	NE	4	0	NE	NE	ND	ND	ND
Benzaldehyde	NE	NE	1	0	NE	NE	ND	ND	ND
Caprolactam	NE	NE	1	0	NE	NE	ND	ND	ND
Atrazine	NE	NE	1	0	NE	NE	ND	ND	ND
Biphenyl,1,1-	NE	NE	1	0	NE	NE	ND	ND	ND
Acetophenone	NE	NE	1	0	NE	NE	ND	ND	ND
Total SVOCs	NE	500	4	4	0	NA	1.178	10.664	5.71
<b>SVOC TICs (mg/kg)</b>									
Total SVOC TICs	NE	NE	4	4	NE	NE	0.91	7.26	3.78

**Table 5-3  
East 19th Street Station Surface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	SSBV (from H&A SCR)	NYSDEC RSCO	Number of Samples Analyzed*	Number of Detections	Number of Exceedances of RSCO	Number of Exceedances of RSCO & SSBV	Minimum Detected Result Value	Maximum Detected Result Value	Average Result Value
<b>Metals (mg/kg)</b>									
Arsenic	13.63	7.5	4	4	4	3	10.5	50.4	26.9
Barium	124.7	300	4	4	0	NA	76.9	184	108.5
Cadmium	0.2	1	4	2	1	1	0.82	1.1	0.48
Chromium	36.69	10	4	4	2	2	4.8	144	55.48
Lead	237.7	237.7	4	4	1	1	13.6	1440	434.5
Mercury	1.305	0.1	4	4	2	0	0.05	0.773	0.4
Selenium	NE	2	4	2	2	NE	2.8	3.1	1.48
Silver	0.229	0.229	4	4	4	4	0.38	0.94	0.63
Aluminum	7960	7960	4	4	2	2	1900	10700	6327.5
Antimony	NE	SB	4	0	NA	NA	ND	ND	ND
Beryllium	0.463	0.16	4	4	4	1	0.3	0.52	0.42
Calcium	11563	11563	4	4	0	NA	1550	3470	2605
Cobalt	5.698	30	4	4	0	NA	3.2	19.1	9.25
Copper	35.84	25	4	4	4	4	40.2	99.5	71
Iron	14369	2000	4	4	4	4	14500	21800	18975
Magnesium	3129	3129	4	4	0	NA	214	1560	923.3
Manganese	358.5	358.5	4	4	0	NA	32.8	201	120.7
Nickel	15.3	13	4	4	4	3	15.3	23.5	20.6
Potassium	1193	1193	4	4	0	NA	195	696	473.3
Sodium	214.8	214.8	4	2	1	1	181	237	104.5
Thallium	NE	SB	4	0	NA	NA	ND	ND	ND
Vanadium	30.25	150	4	4	0	NA	10.5	99.2	52.28
Zinc	81.77	20	4	4	3	2	18.7	109	71.45
<b>Cyanide (mg/Kg)</b>									
Cyanide, Total	0.705	NE	4	0	NE	NE	ND	ND	ND
Cyanide, Amenable	NE	NE	1	0	NE	NE	ND	ND	ND

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH001	14GH001	14GH002	14GH002	14GH002	14GH002	14GH002	14GH002	ST14SB01	ST14SB01	ST14SB01
Depth Interval (ft):			5-7	17-18.7	0-2	2-4	5-7	12-14	28-30	12-16	24-28	28-32	
Date Collected:			2/27/2004	2/27/2004	2/23/2004	2/23/2004	2/23/2004	2/23/2004	2/23/2004	2/23/2004	3/28/2006	3/28/2006	3/28/2006
Investigation Conducted by:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	GEI	GEI	GEI
<b>BTEX (mg/kg)</b>													
Benzene	0.00223	0.06	0.078	0.014	0.0013	0.16	7.8	5.3	0.028	0.0065 J	0.032 U	0.25	
Toluene	0.0028	1.5	0.0027 J	0.0025 J	0.0015 J	0.004 J	0.1 J	0.077 J	0.063	0.0083 J	0.032 U	0.032 U	
Ethylbenzene	0.00139	5.5	0.0022 J	0.002 J	0.00023 U	0.0069	1.6	0.43 J	0.059	0.046 U	0.032 U	0.017 J	
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.014	0.022	0.00056 U	0.01	0.73	0.4 J	0.11	0.092 U	0.063 U	0.012 J	
Total BTEX	NE	NE	0.0969	0.0405	0.0028	0.1809	10.23	6.207	0.26	0.0148	ND	0.279	
<b>Other VOCs (mg/kg)</b>													
Acetone	0.141	0.2	0.042 J	0.069 J	0.11 J	0.21 J	0.26 U	0.26 U	0.045 J	0.23 UJ	0.16 UJ	0.16 UJ	
Butanone,2-	0.00202	0.3	0.0012 U	0.018	0.018 J	0.04 J	0.27 U	0.27 U	0.0012 U	0.23 U	0.16 UJ	0.16 U	
Carbon disulfide	0.00156	2.7	0.0032 J	0.022	0.0038 J	0.019	0.035 U	0.036 U	0.0024 J	0.033 J	0.032 U	0.032 U	
Carbon tetrachloride	NE	0.6	0.00025 U	0.00029 U	0.00024 U	0.00026 U	0.054 U	0.054 U	0.00025 U	0.046 U	0.032 U	0.032 U	
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.00028 U	0.00032 U	0.00027 U	0.00028 U	0.023 U	0.024 U	0.00027 U	0.046 U	0.032 U	0.032 U	
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.00089 U	0.001 U	0.00086 U	0.00092 U	0.16 U	0.16 U	0.00087 U	0.23 U	0.16 U	0.16 U	
Styrene	NE	NE	0.00014 U	0.00017 U	0.00014 U	0.00015 U	0.022 U	0.022 U	0.00014 U	0.046 U	0.032 U	0.032 U	
Tetrachloroethene	0.00149	1.4	0.0002 U	0.00024 U	0.0002 U	0.0002 U	0.047 U	0.047 U	0.0002 U	0.046 U	0.032 U	0.032 U	
Trichloroethene	0.00021	0.7	0.00032 U	0.00038 U	0.00032 U	0.00032 U	0.035 U	0.035 U	0.00032 U	0.046 U	0.032 U	0.032 U	
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.046 U	0.032 U	0.032 U	
Methyl acetate	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.046 UJ	0.032 UJ	0.032 UJ	
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.046 U	0.032 U	0.032 U	
Total VOCs	NE	10	0.1421	0.1495	0.1346	0.4499	10.23	6.207	0.3074	0.0478	ND	0.279	
<b>VOC TICs (mg/kg)</b>													
Total VOC TICs	NE	NE	0.161	0.0377	NA	0.2754	2.49	NA	1.336	NA	NA	0.14	
<b>Noncarcinogenic PAHs (mg/kg)</b>													
Methylnaphthalene,2	0.106	36.4	0.15 J	3	0.2 J	0.53	0.18 J	0.16 J	1	0.61 U	0.42 U	0.42 U	
Acenaphthene	0.117	50	0.027 J	1.6	0.86 J	0.81	0.28 J	0.22 J	0.4 J	0.61 U	0.42 U	0.42 U	
Acenaphthylene	0.259	41	0.011 J	0.23 J	0.97 J	0.25 J	0.072 J	0.092 J	0.17 J	0.61 U	0.42 U	0.42 U	
Anthracene	0.488	50	0.069 J	0.55	2.4	1.2	0.46 J	0.51	0.16 J	0.61 U	0.42 U	0.42 U	
Benzo[g,h,i]perylene	0.565	50	0.0043 U	0.049 J	4.1	0.85	0.19 J	0.25 J	0.0044 U	0.61 U	0.42 UJ	0.42 U	
Fluoranthene	3.416	50	0.033 J	0.5	12	4.1	1.2	1.5	0.027 J	0.61 UJ	0.42 U	0.42 U	
Fluorene	0.267	50	0.014 J	1.4	0.66 J	0.92	0.37 J	0.31 J	0.13 J	0.61 U	0.42 U	0.42 U	
Naphthalene	0.476	13	2.8	8.5	0.72 J	5.6	1.4	0.62	5.1	0.61 U	0.073 J	0.42 U	
Phenanthrene	3.949	50	0.04 J	2.7	7.9	4.6	2	2	0.088 J	0.61 U	0.42 U	0.42 U	
Pyrene	4.525	50	0.045 J	0.53	14	3.6	1.3	1.8	0.026 J	0.61 U	0.42 U	0.42 U	
Total Noncarcinogenic PAHs	NE	NE	3.189	19.059	43.81	22.46	7.452	7.462	7.101	ND	0.073	ND	
<b>Carcinogenic PAHs (mg/kg)</b>													
Benzo[a]anthracene	2.599	0.224	0.016 J	0.16	6.6	1.5	0.42	0.57	0.015 J	0.61 U	0.42 U	0.42 U	
Benzo[a]pyrene	1.046	0.061	0.016 J	0.12	6.8	1.4	0.4	0.49	0.01 J	0.61 U	0.42 U	0.42 U	
Benzo[b]fluoranthene	0.728	1.1	0.012 J	0.063	4.9	1	0.3	0.37	0.0032 U	0.61 U	0.42 U	0.42 U	
Benzo[k]fluoranthene	0.996	1.1	0.018 J	0.13	5.9	1.4	0.37	0.49	0.0043 U	0.61 U	0.42 U	0.42 U	
Chrysene	1.267	0.4	0.021 J	0.15 J	7.4	1.6	0.45 J	0.59	0.013 J	0.61 U	0.42 U	0.42 U	
Dibenzo[a,h]anthracene	0.162	0.014	0.0026 U	0.02 J	1.4	0.22	0.062	0.086	0.0027 U	0.61 U	0.42 UJ	0.42 U	
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.0026 U	0.048 J	3.8	0.77	0.18	0.24	0.0027 U	0.61 UJ	0.42 UJ	0.42 UJ	
Total Carcinogenic PAHs	NE	NE	0.083	0.691	36.8	7.89	2.182	2.836	0.038	ND	ND	ND	
<b>Total PAHs (mg/kg)</b>													
Total PAHs	NE	NE	3.272	19.75	80.61	30.35	9.634	10.298	7.139	ND	0.073	ND	
<b>Other SVOCs (mg/kg)</b>													
Bis(2-ethylhexyl)phthalate	0.823	50	0.72	0.03 U	0.12 U	0.14 J	0.028 U	0.03 U	0.1 J	0.61 U	0.42 U	0.42 U	
Butyl benzyl phthalate	0.024	50	0.016 U	0.02 U	0.081 U	0.018 U	0.019 U	0.02 U	0.017 U	0.61 U	0.42 U	0.42 U	
Carbazole	0.131	NE	0.041 J	0.95	0.54 J	0.79	0.22 J	0.23 J	0.25 J	0.61 U	0.42 U	0.42 U	
Dibenzofuran	0.197	6.2	0.0086 J	1.2	0.48 J	0.53	0.25 J	0.2 J	0.19 J	0.61 U	0.42 U	0.42 U	
Diethyl phthalate	0.01	7.1	0.011 U	0.013 U	0.054 U	0.012 U	0.013 U	0.014 U	0.13 J	0.61 U	0.42 U	0.076 J	
Dimethylphenol, 2,4	0.021	NE	0.037 U	0.064 J	0.18 U	0.041 U	0.028 J	0.046 U	0.074 J	0.61 U	0.42 U	0.42 U	
Di-n-butyl phthalate	0.064	8.1	0.012 U	0.014 U	0.058 U	0.013 U	0.014 U	0.014 U	0.012 U	0.61 U	0.42 U	0.42 U	
Isophorone	NE	4.4	0.03 U	0.037 U	0.15 U	0.033 U	0.036 U	0.038 U	0.031 U	0.61 U	0.42 U	0.42 U	
Methylphenol, 4	0.08	0.9	0.04 U	0.037 J	0.2 U	0.011 J	0.017 J	0.012 J	0.17 J	1.3	0.42 U	0.42 U	
Methylphenol,2	0.021	0.1	0.036 U	0.044 U	0.18 U	0.04 U	0.043 U	0.045 U	0.18 J	0.61 U	0.42 U	0.42 U	
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	0.012 U	0.086 J	0.06 U	0.013 U	0.026 J	0.015 U	0.012 U	1.5 U	1 U	1 U	
Pentachlorophenol	NE	1	0.039 J	0.092 U	0.36 U	0.078 U	0.087 U	0.092 U	0.073 U	1.5 U	1 U	1 U	
Phenol	0.042	0.03	0.054 U	0.066 U	0.27 U	0.059 U	0.063 U	0.067 U	0.27 J	0.61 U	0.42 U	0.34 J	
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.61 U	0.42 U	0.42 U	
Total SVOCs	NE	500	4.0806	22.087	81.63	31.821	10.175	10.74	8.503	1.3	0.073	0.416	
<b>SVOC TICs (mg/kg)</b>													
Total SVOC TICs	NE	NE	13.03	27.2	29.5	19.3	21.23	11.78	4.14	7.52	0.2	1.83	



**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH001	14GH001	14GH002	14GH002	14GH002	14GH002	14GH002	14GH002	ST14SB01	ST14SB01	ST14SB01
Depth Interval (ft):			5-7	17-18.7	0-2	2-4	5-7	12-14	28-30	12-16	24-28	28-32	
Date Collected:			2/27/2004	2/27/2004	2/23/2004	2/23/2004	2/23/2004	2/23/2004	2/23/2004	3/28/2006	3/28/2006	3/28/2006	
Investigation Conducted by:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	GEI	GEI	GEI	
<b>Metals (mg/kg)</b>													
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	NA	NA	17.8 J	1.3 U	1.38 J	
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	378	74.9	142	
Cadmium	0.2	1	NA	NA	NA	NA	NA	NA	NA	0.928 UJ	0.632 UJ	0.63 UJ	
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	33.6	20	15.9	
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	1160	3.73	5.94	
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	2.1	0.07 J	0.022	
Silver	0.229	0.229	NA	NA	NA	NA	NA	NA	NA	R	R	R	
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	14100	7550	5230	
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	11.1 UJ	13.6 J	7.56 UJ	
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	0.928 U	0.63 U	0.63 U	
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	22900 J	7120 J	11400 J	
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	11.3	7.23	5.79 J	
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	276 J	13.2 J	10.3 J	
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	25400	12600	11300	
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	5330	7320	5540	
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	346	462	348	
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	38.2 J	23.4 J	19.3 J	
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	3380 J	3370 J	2670 J	
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	1480 J	273 J	336 J	
Thallium	NE	SB	NA	NA	NA	NA	NA	NA	NA	1.86 U	1.26 U	2.03 J	
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	40.1	24.8	19.9	
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	286	37.5	26.5	
<b>Cyanide (mg/kg)</b>													
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	0.964	0.632 U	0.63 U	
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.632 U	0.63 U	

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB01 36-39.8 3/28/2006 GEI	ST14SB01DUP 36-39.8 3/28/2006 GEI	14GH003 6-8 3/2/2004 H&A	14GH003 13-15 3/2/2004 H&A	14GH003 21-23 3/2/2004 H&A	14GH004 5-7 2/25/2004 H&A	14GH004 10-12 2/25/2004 H&A	14GH004 24-26 2/25/2004 H&A	14GH004 28-30 2/25/2004 H&A
<b>BTEX (mg/kg)</b>											
Benzene	0.00223	0.06	0.085 J	0.21 J	0.0025	0.0049	0.0027	2.2	12	250	4.2
Toluene	0.0028	1.5	0.03 U	0.034 U	0.00023 U	0.00023 U	0.00023 U	0.084 J	2	340	2.5
Ethylbenzene	0.000139	5.5	0.13 J	0.3 J	0.00023 U	0.00023 U	0.00022 U	0.021 U	0.16 J	100	0.57
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.0144 J	0.033 J	0.00055 U	0.00056 U	0.00055 U	0.16 J	0.34 J	420	2.3
Total BTEX	NE	NE	0.2294	0.543	0.0025	0.0049	0.0027	2.444	14.5	1110	9.57
<b>Other VOCs (mg/kg)</b>											
Acetone	0.141	0.2	0.15 UJ	0.17 UJ	0.044 J	0.037 J	0.027 J	0.23 UJ	0.29 UJ	22 UJ	0.22 UJ
Butanone,2-	0.00202	0.3	0.15 U	0.17 U	0.014	0.0011 U	0.0011 U	0.24 U	0.3 U	22 U	0.23 U
Carbon disulfide	0.00156	2.7	0.03 U	0.034 U	0.005 J	0.0074	0.0024 J	0.14 J	0.039 U	2.9 U	0.03 U
Carbon tetrachloride	NE	0.6	0.03 U	0.034 U	0.00024 U	0.00024 U	0.00024 U	0.046 U	0.058 U	4.4 U	0.046 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.03 U	0.034 U	0.00026 U	0.00027 U	0.00026 U	0.021 U	0.026 U	1.9 U	0.02 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.15 U	0.17 U	0.00084 U	0.00086 U	0.00084 U	0.14 U	0.17 U	13 U	0.13 U
Styrene	NE	NE	0.03 U	0.034 U	0.00014 U	0.00014 U	0.00014 U	0.02 U	0.024 U	67	0.45 J
Tetrachloroethene	0.000149	1.4	0.03 U	0.034 U	0.00019 U	0.0002 U	0.00019 U	0.04 U	0.051 U	3.7 U	0.04 U
Trichloroethene	0.00021	0.7	0.03 U	0.034 U	0.0003 U	0.0011 J	0.0009 J	0.03 U	0.037 U	2.7 U	0.03 U
Methylcyclohexane	NE	NE	0.03 U	0.034 U	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NE	NE	0.03 UJ	0.034 UJ	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	0.03 U	0.0041 J	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	0.2294	0.5471	0.0655	0.0504	0.033	2.584	14.5	1177	10.02
<b>VOC TICs (mg/kg)</b>											
Total VOC TICs	NE	NE	0.151	0.179	0.0069	0.0082	NA	0.68	NA	2124	35.3
<b>Noncarcinogenic PAHs (mg/kg)</b>											
Methylanthracene,2	0.106	36.4	0.4 U	0.43 U	0.016 J	0.019 U	0.019 U	0.02 J	0.039 J	590	1
Acenaphthene	0.117	50	0.4 U	0.43 U	0.0032 U	0.013 J	0.0034 U	0.063 J	0.065 J	75 J	0.11 J
Acenaphthylene	0.259	41	0.4 U	0.43 U	0.0088 J	0.0034 U	0.0034 U	0.0036 U	0.014 J	410	0.48
Anthracene	0.488	50	0.4 U	0.43 U	0.011 J	0.011 J	0.0031 U	0.03 J	0.078 J	280	0.36 J
Benzo[g,h,i]perylene	0.565	50	0.4 U	0.43 U	0.0041 U	0.0043 U	0.0043 U	0.0045 U	0.0056 U	79 J	0.027 J
Fluoranthene	3.416	50	0.4 U	0.43 U	0.033 J	0.015 J	0.012 J	0.037 J	0.038 J	620	0.26 J
Fluorene	0.267	50	0.4 U	0.43 U	0.012 J	0.0028 U	0.0028 U	0.0029 U	0.027 J	410	0.61
Naphthalene	0.476	13	0.23 J	0.49	0.031 J	0.04 J	0.011 J	0.14 J	0.026 J	2300	6.6
Phenanthrene	3.949	50	0.4 U	0.43 U	0.056 J	0.02 J	0.0037 U	0.053 J	0.57	1100	0.86
Pyrene	4.525	50	0.4 U	0.43 U	0.03 J	0.02 J	0.012 J	0.04 J	0.053 J	460	0.2 J
Total Noncarcinogenic PAHs	NE	NE	0.23	0.49	0.1978	0.119	0.035	0.383	0.91	6324	10.507
<b>Carcinogenic PAHs (mg/kg)</b>											
Benz[a]anthracene	2.599	0.224	0.4 U	0.43 U	0.011 J	0.0094 J	0.011 U	0.021 J	0.014 U	260	0.1
Benz[a]pyrene	1.046	0.061	0.4 U	0.43 U	0.0087 J	0.003 U	0.003 U	0.016 J	0.0039 U	180	0.074
Benz[b]fluoranthene	0.728	1.1	0.4 U	0.43 U	0.0029 U	0.0031 U	0.0031 U	0.0095 J	0.004 U	116	0.043
Benz[k]fluoranthene	0.996	1.1	0.4 U	0.43 U	0.0087 J	0.0042 U	0.0042 U	0.017 J	0.0054 U	210	0.077
Chrysene	1.267	0.4	0.4 U	0.43 U	0.016 J	0.011 J	0.0086 J	0.024 J	0.0065 U	230	0.079 J
Dibenzo[a,h]anthracene	0.162	0.014	0.4 U	0.43 U	0.0025 U	0.0026 U	0.0026 U	0.0028 U	0.0034 U	27	0.0027 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.4 U	0.43 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0034 U	78	0.026 J
Total Carcinogenic PAHs	NE	NE	ND	ND	0.0444	0.0204	0.0086	0.0875	ND	1095	0.399
<b>Total PAHs (mg/kg)</b>											
Total PAHs	NE	NE	0.23	0.49	0.2422	0.1394	0.0436	0.4705	0.91	7419	10.906
<b>Other SVOCs (mg/kg)</b>											
Bis(2-ethylhexyl)phthalate	0.823	50	0.4 U	0.43 U	0.023 U	0.024 U	0.024 U	0.025 U	0.032 U	12 U	0.44
Butyl benzyl phthalate	0.024	50	0.4 U	0.43 U	0.015 U	0.016 U	0.016 U	0.017 U	0.021 U	8.1 U	0.017 U
Carbazole	0.131	NE	0.4 U	0.43 U	0.0028 U	0.0086 J	0.0029 U	0.0031 U	0.0038 U	180 J	1.6
Dibenzofuran	0.197	6.2	0.4 U	0.43 U	0.0093 J	0.021 U	0.021 U	0.022 U	0.027 U	310	0.55
Diethyl phthalate	0.01	7.1	0.4 U	0.43 U	0.01 U	0.011 U	0.011 U	0.011 U	0.014 U	5.4 U	0.011 U
Dimethylphenol, 2,4	0.021	NE	0.4 U	0.43 U	0.0087 J	0.037 U	0.037 U	0.039 U	0.048 U	11 J	1
Di-n-butyl phthalate	0.064	8.1	0.4 U	0.43 U	0.011 U	0.012 U	0.012 U	0.012 U	0.015 U	5.8 U	0.012 U
Isophorone	NE	4.4	0.4 U	0.43 U	0.029 U	0.03 U	0.03 U	0.032 U	0.04 U	15 U	0.031 U
Methylphenol, 4	0.08	0.9	0.4 U	0.43 U	0.24 J	0.04 U	0.04 U	0.042 U	0.052 U	7.1 J	4.4
Methylphenol,2	0.021	0.1	0.4 U	0.43 U	0.034 U	0.036 U	0.036 U	0.038 U	0.047 U	18 U	1.5
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	1 U	1.1 U	0.011 U	0.012 U	0.012 U	0.013 U	0.016 U	6 U	0.012 U
Pentachlorophenol	NE	1	1 U	1.1 U	0.069 U	0.073 U	0.073 U	0.078 U	0.096 U	36 U	0.073 U
Phenol	0.042	0.03	0.4 U	0.43 U	0.051 U	0.054 U	0.054 U	0.056 U	0.07 U	27 U	4.9
Biphenyl,1,1	NE	NE	0.4 U	0.43 U	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	0.23	0.49	0.5002	0.148	0.0436	0.4705	0.91	7927.1	25.296
<b>SVOC TICs (mg/kg)</b>											
Total SVOC TICs	NE	NE	1.06	1.39	9.66	NA	NA	0.42	1.55	2420	17.9

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB01	ST14SB01DUP	14GH003	14GH003	14GH003	14GH004	14GH004	14GH004	14GH004
Depth Interval (ft):			36-39.8	36-39.8	6-8	13-15	21-23	5-7	10-12	24-26	28-30
Date Collected:			3/28/2006	3/28/2006	3/2/2004	3/2/2004	3/2/2004	2/25/2004	2/25/2004	2/25/2004	2/25/2004
Investigation Conducted by:			GEI	GEI	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>											
Arsenic	13.63	7.5	2.12 J	2.34 J	NA	NA	NA	NA	NA	NA	NA
Barium	124.7	300	88	81.7	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.2	1	0.607 UJ	0.649 UJ	NA	NA	NA	NA	NA	NA	NA
Chromium	36.69	10	13	12.9	NA	NA	NA	NA	NA	NA	NA
Lead	237.7	237.7	4.73 J	5.23 J	NA	NA	NA	NA	NA	NA	NA
Mercury	1.305	0.1	0.023	0.022	NA	NA	NA	NA	NA	NA	NA
Silver	0.229	0.229	R	R	NA	NA	NA	NA	NA	NA	NA
Aluminum	7960	7960	5580	5840	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	SB	7.29 UJ	7.79 UJ	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.463	0.16	0.61 U	0.66 U	NA	NA	NA	NA	NA	NA	NA
Calcium	11563	11563	19900 J	22000 J	NA	NA	NA	NA	NA	NA	NA
Cobalt	5.698	30	6.31	6.5	NA	NA	NA	NA	NA	NA	NA
Copper	35.84	25	18.4 J	19.2 J	NA	NA	NA	NA	NA	NA	NA
Iron	14369	2000	12000	12900	NA	NA	NA	NA	NA	NA	NA
Magnesium	3129	3129	7820	8190	NA	NA	NA	NA	NA	NA	NA
Manganese	358.5	358.5	358	404	NA	NA	NA	NA	NA	NA	NA
Nickel	15.3	13	16.2 J	16.5 J	NA	NA	NA	NA	NA	NA	NA
Potassium	1193	1193	2200 J	2190 J	NA	NA	NA	NA	NA	NA	NA
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	500 J	471 J	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	SB	1.2 U	1.3 U	NA	NA	NA	NA	NA	NA	NA
Vanadium	30.25	150	18.2	18.4	NA	NA	NA	NA	NA	NA	NA
Zinc	81.77	20	35.9	39.6	NA	NA	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>											
Cyanide, Total	0.705	NE	0.613 U	0.655 U	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	0.61 U	0.66 U	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH005 5-7 3/1/2004 H&A	14GH005 16-18 3/1/2004 H&A	14GH005 25-26.5 3/1/2004 H&A	14GH006 5-7 3/8/2004 H&A	14GH006 13-15 3/8/2004 H&A	14GH006 18-20 3/8/2004 H&A	14GH007 5-7 2/26/2004 H&A	14GH007 13-15 2/26/2004 H&A	14GH008 4-6 2/26/2004 H&A	14GH008 9-11 2/26/2004 H&A
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.037	0.019	0.029	0.0013	0.058	0.26	0.0009 J	0.47	0.015	0.0041
Toluene	0.0028	1.5	0.0038 J	0.0027 J	0.017	0.00023 U	0.00024 U	0.021 U	0.00023 U	2.3	0.012	0.0019 J
Ethylbenzene	0.000139	5.5	0.00024 U	0.0005 J	0.0099	0.00023 U	0.00024 U	0.13 J	0.00023 U	1.5	0.0012 J	0.0004 J
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.00057 U	0.0017 J	0.022	0.00055 U	0.00058 U	0.11 J	0.00055 U	9	0.0052 J	0.0019 J
Total BTEX	NE	NE	0.0408	0.0239	0.0779	0.0013	0.058	0.5	0.0009	13.27	0.0334	0.0083
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.077 J	0.05 J	0.059 J	0.0028 UJ	0.0029 UJ	0.23 UJ	0.037 J	0.23 UJ	0.039 J	0.036 J
Butanone,2-	0.00202	0.3	0.014	0.0088	0.011	R	R	R	0.011 J	R	0.011 J	0.011 J
Carbon disulfide	0.00156	2.7	0.0021 J	0.0055 J	0.0044 J	0.00034 U	0.00036 U	0.032 U	0.0012 J	0.031 U	0.0093	0.0054 J
Carbon tetrachloride	NE	0.6	0.00025 U	0.00023 U	0.00025 U	0.00024 U	0.00025 U	0.048 U	0.00024 U	0.046 U	0.00023 U	0.00023 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.00027 U	0.00026 U	0.00028 U	0.00026 U	0.00028 U	0.021 U	0.00026 U	0.02 U	0.00026 U	0.00026 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.00087 U	0.00083 U	0.00089 U	0.00084 U	0.00089 U	0.14 U	0.00084 U	0.14 U	0.00083 U	0.0025 J
Styrene	NE	NE	0.00014 U	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.02 U	0.00014 U	0.34 J	0.0026 J	0.0008 J
Tetrachloroethene	0.000149	1.4	0.0002 U	0.00019 U	0.0002 U	0.00019 U	0.0002 U	0.04 U	0.00019 U	0.04 U	0.00019 U	0.00019 U
Trichloroethene	0.00021	0.7	0.00032 U	0.0003 U	0.00032 U	0.0003 U	0.00032 U	0.03 U	0.0003 U	0.03 U	0.0003 U	0.0003 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	0.1339	0.0882	0.1523	0.0013	0.058	0.5	0.0501	13.61	0.0953	0.064
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	0.012	0.0167	1.0709	0.0071	NA	1.8	NA	69.4	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.039 J	0.019 J	0.48	0.04 J	0.18 J	1.3	0.02 J	580	0.013 J	0.055 J
Acenaphthene	0.117	50	0.03 J	0.01 J	0.084 J	0.15 J	0.35 J	0.53	0.13 J	86 J	0.16 J	0.34 J
Acenaphthylene	0.259	41	0.02 J	0.0033 U	0.23 J	0.1 J	0.091 J	0.87	0.049 J	180	0.03 J	0.053 J
Anthracene	0.488	50	0.024 J	0.023 J	0.0082 J	1.9	0.38 J	1.8	0.28 J	380	0.23 J	0.64
Benzo[ghi]perylene	0.565	50	0.027 J	0.017 J	0.0043 U	0.0042 U	0.0045 U	0.19 J	0.41	75 J	0.45	0.62
Fluoranthene	3.416	50	0.061 J	0.055 J	0.01 J	1.2	0.076 J	2.2	1.4	650	1.4	2.5
Fluorene	0.267	50	0.0028 U	0.029 J	0.064 J	0.61	0.26 J	1.7	0.12 J	400	0.056 J	0.28 J
Naphthalene	0.476	13	1.6	0.15 J	5.2	0.56	1.2	6.8	0.07 J	2000	0.039 J	0.093 J
Phenanthrene	3.949	50	0.028 J	0.038 J	0.011 J	0.27 J	0.84	3.8	0.93	1200	0.69	2.3
Pyrene	4.525	50	0.069 J	0.058 J	0.0099 J	0.82	0.066 J	1.8	1.3	560	1.4	2.4
Total Noncarcinogenic PAHs	NE	NE	1.898	0.399	6.0971	5.75	3.443	20.99	4.709	6111	4.468	9.281
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.045	0.025 J	0.011 U	0.8	0.052	0.98	0.55	280	0.61	1
Benzo[a]pyrene	1.046	0.061	0.037 J	0.028 J	0.003 U	0.01 J	0.0099 J	0.45	0.61	190	0.68	0.99
Benzo[b]fluoranthene	0.728	1.1	0.031 J	0.02 J	0.0031 U	0.0084 J	0.011 J	0.3	0.42	120	0.45	0.8
Benzo[k]fluoranthene	0.996	1.1	0.043	0.026 J	0.0042 U	0.014 J	0.013 J	0.43	0.55	180	0.6	0.84
Chrysene	1.267	0.4	0.044 J	0.028 J	0.005 U	0.05 J	0.025 J	0.6	0.62	250	0.66	1
Dibenz[a,h]anthracene	0.162	0.014	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0028 U	0.078	0.1	28	0.13	0.19
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.024 J	0.015 J	0.0026 U	0.0025 U	0.0027 U	0.19	0.34	72	0.37	0.53
Total Carcinogenic PAHs	NE	NE	0.224	0.142	ND	0.8824	0.1109	3.028	3.19	1120	3.5	5.35
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	2.122	0.541	6.0971	6.6324	3.5539	24.018	7.899	7231	7.968	14.631
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.025 U	0.024 U	0.024 U	0.024 U	0.025 U	0.025 U	0.024 U	6.1 U	0.1 J	0.14 J
Butyl benzyl phthalate	0.024	50	0.017 U	0.016 U	0.016 U	0.016 U	0.017 U	0.017 U	0.016 U	4.1 U	0.016 U	0.015 U
Carbazole	0.131	NE	0.009 J	0.1 J	0.34 J	2.1	0.28 J	2.9	0.034 J	150	0.045 J	0.13 J
Dibenzofuran	0.197	6.2	0.021 U	0.011 J	0.049 J	0.13 J	0.23 J	1	0.045 J	300	0.039 J	0.14 J
Diethyl phthalate	0.01	7.1	0.011 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.011 U	2.7 U	0.01 U	0.01 U
Dimethylphenol, 2,4	0.021	NE	0.052 J	0.036 U	0.38 J	0.036 U	0.0091 J	0.48	0.037 U	9.2 U	0.036 U	0.034 U
Di-n-butyl phthalate	0.064	8.1	0.012 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	2.9 U	0.011 U	0.011 U
Isophorone	NE	4.4	0.031 U	0.03 U	0.03 U	0.03 U	0.032 U	0.032 U	0.03 U	7.6 U	0.03 U	0.028 U
Methylphenol, 4	0.08	0.9	0.0093 J	0.039 U	0.32 J	0.039 U	0.021 J	0.95	0.04 U	9.9 U	0.039 U	0.037 U
Methylphenol,2	0.021	0.1	0.037 U	0.035 U	0.41	0.035 U	0.038 U	0.56	0.036 U	9.1 U	0.035 U	0.034 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	3.1 U	0.012 U	0.011 U
Pentachlorophenol	NE	1	0.073 U	0.073 U	0.073 U	0.073 U	0.078 U	0.078 U	0.073 U	19 U	0.073 U	0.069 U
Phenol	0.042	0.03	0.055 U	0.052 U	0.48	0.052 U	0.056 U	1.4	0.054 U	13 U	0.052 U	0.05 U
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	2.1923	0.652	8.0761	8.8624	4.094	31.308	7.978	7681	8.152	15.041
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	6.52	0.97	4.19	13.49	3.15	23.5	1.21	3391	0.93	3.85

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH005	14GH005	14GH005	14GH006	14GH006	14GH006	14GH007	14GH007	14GH008	14GH008
Depth Interval (ft):			5-7	16-18	25-26.5	5-7	13-15	18-20	5-7	13-15	4-6	9-11
Date Collected:			3/1/2004	3/1/2004	3/1/2004	3/8/2004	3/8/2004	3/8/2004	2/26/2004	2/26/2004	2/26/2004	2/26/2004
Investigation Conducted by:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.229	0.229	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
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**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH009 5-7 2/27/2004 H&A	14GH009 13-15 2/27/2004 H&A	14GH010 0-2 3/17/2004 H&A	14GH010 2-4 3/17/2004 H&A	14GH010 6-8 3/17/2004 H&A	14GH010 14-16 3/17/2004 H&A	14GH010 18-19 3/17/2004 H&A	14GH011 6-8 3/17/2004 H&A	14GH011 14-16 3/17/2004 H&A	14GH011 20-21 3/17/2004 H&A
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.00025 U	0.00025 U	0.037	0.02	0.00028 U	0.0011 J	0.39	0.0089	0.00028 U	0.39
Toluene	0.0028	1.5	0.00021 U	0.0014 J	0.0015 J	0.0037 J	0.00025 U	0.00023 U	1.3	0.0031 J	0.00023 U	0.31 J
Ethylbenzene	0.000139	5.5	0.00021 U	0.00022 U	0.00022 U	0.00022 U	0.00025 U	0.00023 U	8	0.0006 J	0.00023 U	0.59
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.00051 U	0.00054 U	0.00052 U	0.00053 U	0.0006 U	0.00056 U	18	0.0017 J	0.00056 U	0.77
Total BTEX	NE	NE	ND	0.0014	0.0385	0.0237	ND	0.0011	27.69	0.0143	ND	2.06
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.0026 UJ	0.039 J	0.0026 U	0.0027 U	0.003 U	0.0028 U	0.21 UJ	0.028	0.0028 U	0.23 UJ
Butanone,2-	0.00202	0.3	0.001 U	0.0011 U	R	R	R	R	R	R	R	R
Carbon disulfide	0.00156	2.7	0.00032 U	0.0012 J	0.0009 J	0.0018 J	0.00038 UJ	0.00035 UJ	0.028 UJ	0.0018 J	0.00035 UJ	0.2 J
Carbon tetrachloride	NE	0.6	0.00022 U	0.00023 U	0.00023 U	0.00023 U	0.00026 U	0.00024 U	0.042 U	0.00025 U	0.00024 U	0.048 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.00024 U	0.00026 U	0.00025 U	0.00025 U	0.00029 U	0.00027 U	0.018 U	0.00028 U	0.00027 U	0.021 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.00078 U	0.00083 U	0.0008 U	0.00081 U	0.00093 U	0.00086 U	0.12 U	0.00089 U	0.00086 U	0.14 U
Styrene	NE	NE	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00014 U	0.018 U	0.00014 U	0.00014 U	0.02 U
Tetrachloroethene	0.000149	1.4	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.037 U	0.0009 J	0.0002 U	0.04 U
Trichloroethene	0.00021	0.7	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.00032 U	0.00032 U	0.027 U	0.00032 U	0.00032 U	0.03 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	ND	0.0416	0.0394	0.0255	ND	0.0011	27.69	0.045	ND	2.26
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	0.011	NA	NA	NA	0.0069	0.012	136.7	0.0087	0.082	12.43
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.017 U	2.1 J	0.028 J	0.027 J	0.02 U	0.013 J	4.2	0.02 U	0.025 J	31
Acenaphthene	0.117	50	0.0031 U	18 J	0.43 J	0.18 J	0.0036 U	0.44	0.94 J	0.034 J	0.031 J	16
Acenaphthylene	0.259	41	0.0031 U	26	0.73 J	0.071 J	0.0036 U	0.0035 U	1.3 J	0.025 J	0.0035 U	6.3 J
Anthracene	0.488	50	0.0028 U	80	1.6	0.31 J	0.022 J	0.12 J	2.7	0.07 J	0.04 J	31
Benzo[g,h,i]perylene	0.565	50	0.004 U	25	3.8	0.71	0.085 J	0.48	1.5 J	0.19 J	0.0044 U	6.9 J
Fluoranthene	3.416	50	0.02 J	180	10	2.2	0.2 J	0.9	10	0.57	0.092 J	51
Fluorene	0.267	50	0.0025 U	57	0.37 J	0.13 J	0.0029 U	0.039 J	4	0.025 J	0.045 J	36
Naphthalene	0.476	13	0.0033 U	13 J	0.06 J	0.087 J	0.0037 U	0.07 J	23	0.0037 U	0.071 J	100
Phenanthrene	3.949	50	0.011 J	270	5.6	1.3	0.086 J	0.27 J	14	0.29 J	0.19 J	100
Pyrene	4.525	50	0.037 J	170	8	1.6	0.17 J	1.2	7	0.45	0.077 J	42
Total Noncarcinogenic PAHs	NE	NE	0.068	841.1	30.618	6.615	0.563	3.532	68.64	1.654	0.571	402.2
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.016 J	61	4.9	0.88	0.091	0.57	2.5	0.22	0.032 J	23
Benzo[a]pyrene	1.046	0.061	0.017 J	56	5	0.94	0.11	0.69	2.3	0.25	0.029 J	16
Benzo[b]fluoranthene	0.728	1.1	0.0085 J	37	4.1	0.74	0.084	0.41	1.6	0.17	0.025 J	8.3
Benzo[k]fluoranthene	0.996	1.1	0.016 J	56	4.9	0.93	0.089	0.63	2.5	0.27	0.015 J	16
Chrysene	1.267	0.4	0.016 J	59	5	0.9	0.099 J	0.63	3	0.25 J	0.04 J	29
Dibenz[a,h]anthracene	0.162	0.014	0.0024 U	3.2	1.6	0.24	0.025 J	0.18	0.55	0.07	0.0027 U	2.7
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.0024 U	25	3.3	0.6	0.067	0.38	1.3	0.16	0.0027 U	6.2
Total Carcinogenic PAHs	NE	NE	0.0735	298.2	28.8	5.23	0.565	3.49	13.75	1.39	0.141	92.2
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	0.1415	1139.3	59.418	11.845	1.128	7.022	82.39	3.044	0.712	512.4
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.022 U	1.2 U	0.047 U	0.18 J	0.16 J	0.025 U	0.12 U	0.099 J	0.025 U	0.53 U
Butyl benzyl phthalate	0.024	50	0.015 U	0.81 U	0.031 U	0.015 U	0.017 U	0.017 U	0.077 U	0.017 U	0.017 U	0.35 U
Carbazole	0.131	NE	0.0027 U	16 J	0.6 J	0.13 J	0.0031 U	0.018 J	1.9 J	0.031 J	0.024 J	6.2 J
Dibenzofuran	0.197	6.2	0.019 U	45	0.15 J	0.073 J	0.022 U	0.03 J	2.7	0.01 J	0.044 J	24
Diethyl phthalate	0.01	7.1	0.01 U	0.54 U	0.021 U	0.01 U	0.011 U	0.011 U	0.051 U	0.011 U	0.011 U	0.23 U
Dimethylphenol, 2,4	0.021	NE	0.034 U	0.54 J	0.071 U	0.035 U	0.039 U	0.038 U	0.18 U	0.039 U	0.038 U	0.8 U
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.58 U	0.022 U	0.011 U	0.012 U	0.012 U	0.055 U	0.012 U	0.012 U	0.25 U
Isophorone	NE	4.4	0.028 U	1.5 U	0.058 U	0.029 U	0.032 U	0.031 U	0.14 U	0.032 U	0.031 U	0.66 U
Methylphenol, 4	0.08	0.9	0.037 U	1.3	0.076 U	0.038 U	0.042 U	0.041 U	0.19 U	0.042 U	0.041 U	0.86 U
Methylphenol, 2	0.021	0.1	0.034 U	1.8 U	0.07 U	0.034 U	0.038 U	0.037 U	0.17 U	0.038 U	0.037 U	0.79 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	0.011 U	0.59 U	0.024 U	0.011 U	0.013 U	0.012 U	0.059 U	0.013 U	0.012 U	0.27 U
Pentachlorophenol	NE	1	0.069 U	3.6 U	0.14 U	0.069 U	0.078 U	0.073 U	0.36 U	0.078 U	0.073 U	1.6 U
Phenol	0.042	0.03	0.05 U	2.7 U	0.1 U	0.051 U	0.056 U	0.055 U	0.26 U	0.056 U	0.055 U	1.2 U
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	0.1415	1201.84	60.168	12.228	1.288	7.07	86.99	3.184	0.78	542.6
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	NA	493	21.82	1.13	NA	2.08	16.5	NA	NA	248.5

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH009	14GH009	14GH010	14GH010	14GH010	14GH010	14GH010	14GH010	14GH011	14GH011	14GH011
Depth Interval (ft):			5-7	13-15	0-2	2-4	6-8	14-16	18-19	6-8	14-16	20-21	
Date Collected:			2/27/2004	2/27/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004
Investigation Conducted by:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>													
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.229	0.229	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>													
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.  
 Red bolding indicates concentration is above the respective NYSDEC RSCO.  
 Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
 Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH012 0-2 3/15/2004 H&A	14GH012 2-4 3/15/2004 H&A	14GH012 5-7 3/16/2004 H&A	14GH012 16-17 3/16/2004 H&A	14GH013 5-7 3/18/2004 H&A	14GH013 13-15 3/18/2004 H&A	14GH013 22-23 3/18/2004 H&A	ST14SB05 19-21 4/17/2006 GEI	ST14SB05 23-25 4/17/2006 GEI	ST14SB05 25-27 4/17/2006 GEI	
<b>BTEX (mg/kg)</b>													
Benzene	0.00223	0.06	0.008	0.0008 J	0.00025 U	0.0008 J	0.072	0.099	12	0.88	2.7	1.7	
Toluene	0.0028	1.5	0.002 J	0.0012 J	0.00023 U	0.00022 U	0.018	0.014	5.6	0.25 J	0.62 J	13	
Ethylbenzene	0.000139	5.5	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.0007 J	0.0005 J	0.86	4.9	13	1.2	
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Xylene, total	0.000472	1.2	0.00052 U	0.00052 U	0.00053 U	0.00052 U	0.0021 J	0.0017 J	3.7	6.9	12.7	14.8	
Total BTEX	NE	NE	0.01	0.002	ND	0.0008	0.0928	0.1152	22.16	12.93	29.02	30.7	
<b>Other VOCs (mg/kg)</b>													
Acetone	0.141	0.2	0.029	0.032	0.0027 U	0.0026 U	0.0028 U	0.0028 U	0.0028 U	0.22 UJ	4 U	3.9 U	4 U
Butanone,2-	0.00202	0.3	R	R	R	R	R	R	R	R	4 U	3.9 U	4 U
Carbon disulfide	0.00156	2.7	0.00032 UJ	0.00032 UJ	0.00033 UJ	0.002 J	0.001 J	0.0005 J	0.029 U	0.79 U	0.78 U	0.79 U	
Carbon tetrachloride	NE	0.6	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00024 U	0.0006 J	0.044 U	0.79 U	0.78 U	0.79 U	
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Chloroform	NE	0.3	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00027 U	0.00027 U	0.019 U	0.79 U	0.78 U	0.79 U	
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Methyl-2-pentanone,4	NE	1	0.0008 U	0.0008 U	0.00081 U	0.0008 U	0.00086 U	0.00087 U	0.13 U	4 U	3.9 U	4 U	
Styrene	NE	NE	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U	0.00014 U	0.6	0.79 U	0.78 U	5.7	
Tetrachloroethene	0.000149	1.4	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.037 U	0.79 UJ	0.78 UJ	0.79 UJ	
Trichloroethene	0.00021	0.7	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.00032 U	0.00032 U	0.027 U	0.79 U	0.78 U	0.79 U	
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.75 J	1	0.79 U	
Methyl acetate	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.79 UJ	0.78 J	0.79 UJ	
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	1.5	2.3	0.79 U	
Total VOCs	NE	10	0.039	0.034	ND	0.0028	0.0938	0.1163	22.76	15.18	33.1	36.4	
<b>VOC TICs (mg/kg)</b>													
Total VOC TICs	NE	NE	NA	NA	NA	0.0372	NA	NA	48.04	123.1	129.7	69.8	
<b>Noncarcinogenic PAHs (mg/kg)</b>													
Methylnaphthalene,2	0.106	36.4	0.017 U	0.018 U	0.018 U	0.018 U	0.16 J	0.043 J	4.6	3.3 J	2.9	3.2	
Acenaphthene	0.117	50	0.0031 U	0.0077 J	0.0081 J	0.072 J	0.22 J	0.14 J	2.1	16	2.5	0.39 J	
Acenaphthylene	0.259	41	0.089 J	0.0032 U	0.0033 U	0.0087 J	0.81	0.25 J	1.7	4.1 J	0.7 J	1.7	
Anthracene	0.488	50	0.038 J	0.034 J	0.021 J	0.048 J	0.89	0.49	3.6	27	4.7	1.2	
Benzo[ghi]perylene	0.565	50	0.24 J	0.13 J	0.047 J	0.061 J	1.1	0.64	0.64 J	3.5 J	0.59 J	0.3 J	
Fluoranthene	3.416	50	0.19 J	0.44	0.14 J	0.27 J	8.3	3.7	4.4	56	8.5	2.2	
Fluorene	0.267	50	0.0025 U	0.0026 U	0.0027 U	0.037 J	0.39 J	0.13 J	4.4	36	5.7	1.8	
Naphthalene	0.476	13	0.014 J	0.0034 U	0.0034 U	0.081 J	0.47 J	0.12 J	15	36	11	13	
Phenanthrene	3.949	50	0.085 J	0.12 J	0.061 J	0.13 J	5.4	2	9.1	100	16	5.1	
Pyrene	4.525	50	0.2 J	0.42	0.24 J	0.22 J	7.1	3.4	4.3	47	7.5	2.1	
Total Noncarcinogenic PAHs	NE	NE	0.856	1.1517	0.5171	0.9277	24.84	10.913	49.84	328.9	60.09	30.99	
<b>Carcinogenic PAHs (mg/kg)</b>													
Benzo[a]anthracene	2.599	0.224	0.12	0.24	0.088	0.12	3.8	2	2	22	3.3	1.1	
Benzo[a]pyrene	1.046	0.061	0.23	0.22	0.1	0.12	5.4	2.1	1.5	14	2.3	0.74	
Benzo[b]fluoranthene	0.728	1.1	0.16	0.16	0.091	0.075	3.8	1.6	0.79	16	2.7	0.78	
Benzo[k]fluoranthene	0.996	1.1	0.19	0.23	0.11	0.12	5.6	2.2	1.6	4.9	0.74 J	0.2 J	
Chrysene	1.267	0.4	0.15 J	0.28 J	0.097 J	0.13 J	4.6	1.9	1.9	16	2.8	0.95	
Dibenz[a,h]anthracene	0.162	0.014	0.061	0.048	0.019 J	0.022 J	0.67	0.29	0.24	0.71 J	0.11 J	0.054 J	
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.19	0.12	0.044	0.06	1.6	0.8	0.63	3.4 J	0.66 J	0.35 J	
Total Carcinogenic PAHs	NE	NE	1.101	1.298	0.549	0.647	25.47	10.89	8.66	77.01	12.61	4.174	
<b>Total PAHs (mg/kg)</b>													
Total PAHs	NE	NE	1.957	2.4497	1.0661	1.5747	50.31	21.803	58.5	405.91	72.7	35.164	
<b>Other SVOCs (mg/kg)</b>													
Bis(2-ethylhexyl)phthalate	0.823	50	0.022 U	0.089 J	0.024 U	0.023 U	0.19 U	0.33 U	0.047 U	4.1 U	0.82 U	0.42 U	
Butyl benzyl phthalate	0.024	50	0.015 U	0.015 U	0.016 U	0.015 U	0.031 U	0.42	0.032 U	4.1 U	0.82 U	0.42 U	
Carbazole	0.131	NE	0.011 J	0.0028 U	0.0029 U	0.034 J	0.45 J	0.14 J	2.8	5.2 J	1.3	1.2 J	
Dibenzofuran	0.197	6.2	0.019 U	0.02 U	0.02 U	0.018 J	0.29 J	0.087 J	2.5	21	3.3	1.3	
Diethyl phthalate	0.01	7.1	0.01 U	0.01 U	0.01 U	0.01 U	0.021 U	0.011 U	0.021 U	4.1 U	0.82 U	0.42 U	
Dimethylphenol, 2,4	0.021	NE	0.034 U	0.035 U	0.036 U	0.027 J	0.071 U	0.038 U	1.9	4.1 U	0.82 U	0.42 U	
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U	0.012 U	0.022 U	4.1 U	0.82 U	0.42 U	
Isophorone	NE	4.4	0.028 U	0.029 U	0.03 U	0.029 U	0.058 U	0.031 U	0.059 U	4.1 U	0.82 U	0.42 U	
Methylphenol, 4	0.08	0.9	0.037 U	0.038 U	0.039 U	0.038 U	0.052 J	0.0098 J	4.1	4.1 U	0.82 U	0.42 U	
Methylphenol, 2	0.021	0.1	0.034 U	0.034 U	0.035 U	0.034 U	0.07 U	0.037 U	1.3	4.1 U	0.82 U	0.42 U	
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Nitrophenol,4	NE	0.1	0.011 U	0.011 U	0.012 U	0.011 U	0.024 U	0.012 U	0.024 U	10 U	2.1 U	1 U	
Pentachlorophenol	NE	1	0.069 U	0.069 U	0.073 U	0.069 U	0.14 U	0.073 U	0.14 U	10 U	2.1 U	1 U	
Phenol	0.042	0.03	0.05 U	0.051 U	0.052 U	0.051 U	0.1 U	0.055 U	2.7	4.1 U	0.82 U	0.42 U	
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	7.1	1.2	0.56	
Total SVOCs	NE	500	1.968	2.5387	1.0661	1.6537	51.102	22.4598	73.8	439.21	78.5	38.224	
<b>SVOC TICs (mg/kg)</b>													
Total SVOC TICs	NE	NE	NA	1.2	NA	2.1	15.39	4.41	27.94	70.2	14.69	19.09	



**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	14GH012 0-2 3/15/2004 H&A	14GH012 2-4 3/15/2004 H&A	14GH012 5-7 3/16/2004 H&A	14GH012 16-17 3/16/2004 H&A	14GH013 5-7 3/18/2004 H&A	14GH013 13-15 3/18/2004 H&A	14GH013 22-23 3/18/2004 H&A	ST14SB05 19-21 4/17/2006 GEI	ST14SB05 23-25 4/17/2006 GEI	ST14SB05 25-27 4/17/2006 GEI
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	NA	NA	1.36 J	1.3 J	1.44 J
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	91.6 J	105 J	62.6 J
Cadmium	0.2	1	NA	NA	NA	NA	NA	NA	NA	0.213 J	0.224 J	0.2 J
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	17.4	17.5	16.8
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	26.3	84	3.49
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	0.026 J	0.043 N	0.013 UJ
Silver	0.229	0.229	NA	NA	NA	NA	NA	NA	NA	1.24 UJ	1.24 UJ	1.25 UJ
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	7460 J	6980 J	6240 J
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	7.43 UJ	7.46 UJ	7.6 UJ
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	0.335 J	0.325 J	0.24 J
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	16000 J	12200 J	9430 J
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	8.22	10.1 J	6.83 J
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	20.1 J	25.7 J	17.9 J
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	13700 J	14800 J	13100 J
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	10300 J	7540 J	7860 J
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	472	384	180
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	17 J	18.3 J	15.9 J
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	3120	3650 J	2660 J
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	143 J	149 J	300 J
Thallium	NE	SB	NA	NA	NA	NA	NA	NA	NA	1.24 U	1.24 U	1.75
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	23.4	25.4	24.1
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	45.8 J	59.5 J	39.4 J
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	1.85	4.07	0.63 U
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	0.93	0.84	0.63 U

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB05 48-49 4/17/2006 GEI	14GH014 8-10 3/12/2004 H&A	14GH014 16-18 3/12/2004 H&A	14GH014 26-28 3/12/2004 H&A	14PH001 0-2 2/25/2004 H&A	14PH001 2-4 2/25/2004 H&A	14PH001 5-7 3/16/2004 H&A	14PH001 13-15 3/16/2004 H&A	14PH001 29-31 3/16/2004 H&A	ST14SB04 2-4 4/3/2006 GEI
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.13	0.024	0.022	0.06	0.0099	0.05	0.082	0.014	0.0025	0.027 U
Toluene	0.0028	1.5	0.0031 J	0.0022 J	0.0022 J	0.01	0.0054	0.014	0.004 J	0.00031 U	0.00021 U	0.027 U
Ethylbenzene	0.000139	5.5	0.028 U	0.0005 J	0.0012 J	0.031	0.00022 U	0.0011 J	0.00023 U	0.00031 U	0.00021 U	0.027 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.057 U	0.0018 J	0.0066	0.023	0.00052 U	0.003 J	0.0019 J	0.00074 U	0.00051 U	0.054 U
Total BTEX	NE	NE	0.1331	0.0285	0.032	0.124	0.0153	0.0681	0.0879	0.014	0.0025	ND
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.14 U	0.053	0.094	0.0029 U	0.0026 UJ	0.035 J	0.0028 U	0.066	0.0026 U	0.13 UJ
Butanone,2-	0.00202	0.3	0.14 U	0.0083 J	0.027 J	R	0.0011 U	0.0011 U	R	0.014 J	R	0.13 UJ
Carbon disulfide	0.00156	2.7	0.028 U	0.0042 J	0.0048 J	0.0008 J	0.00032 U	0.069	0.00035 UJ	0.0062 J	0.0024 J	0.027 U
Carbon tetrachloride	NE	0.6	0.028 U	0.00025 U	0.00025 U	0.00025 U	0.00022 U	0.00023 U	0.00024 U	0.00032 U	0.00022 U	0.027 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.028 U	0.00028 U	0.00028 U	0.00028 U	0.00025 U	0.00026 U	0.00027 U	0.00035 U	0.00024 U	0.027 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.14 U	0.00089 U	0.0009 U	0.00089 U	0.0008 U	0.00083 U	0.00086 U	0.0011 U	0.00078 U	0.13 U
Styrene	NE	NE	0.028 U	0.00014 U	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U	0.00018 U	0.00013 U	0.027 U
Tetrachloroethene	0.000149	1.4	0.028 U	0.0002 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.00025 U	0.00019 U	0.027 U
Trichloroethene	0.00021	0.7	0.028 U	0.00032 U	0.00032 U	0.00032 U	0.0003 U	0.0003 U	0.00032 U	0.0004 U	0.0003 U	0.027 U
Methylcyclohexane	NE	NE	0.028 U	NA	NA	NA	NA	NA	NA	NA	NA	0.027 U
Methyl acetate	NE	NE	0.028 U	NA	NA	NA	NA	NA	NA	NA	NA	0.027 UJ
Isopropyl benzene	NE	NE	0.028 U	NA	NA	NA	NA	NA	NA	NA	NA	0.027 U
Total VOCs	NE	10	0.1331	0.094	0.1578	0.1248	0.0153	0.1721	0.0879	0.1002	0.0049	ND
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	0.098	NA	0.013	0.16	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.37 U	0.038 J	0.041 J	0.041 J	0.066 J	7.9	0.019 U	0.024 U	0.018 U	0.36 U
Acenaphthene	0.117	50	0.37 U	0.15 J	0.038 J	0.23 J	0.13 J	2.9 J	0.0034 U	0.0044 U	0.017 J	0.36 U
Acenaphthylene	0.259	41	0.37 U	0.036 J	0.0091 J	0.028 J	0.37	21	0.0034 U	0.0044 U	0.0032 U	1.3
Anthracene	0.488	50	0.37 U	0.74	0.035 J	0.0032 U	0.4	14	0.0031 U	0.004 U	0.026 J	0.68
Benzo[g,h,i]perylene	0.565	50	0.37 U	0.0045 U	0.014 J	0.0044 U	1.1	30	0.0043 U	0.0056 U	0.0041 U	16 J
Fluoranthene	3.416	50	0.37 U	0.081 J	0.034 J	0.0013 U	2.6	60	0.022 J	0.0017 U	0.034 J	5.6
Fluorene	0.267	50	0.37 U	0.26 J	0.014 J	0.0028 U	0.13 J	4.1	0.0028 U	0.0036 U	0.042 J	0.096 J
Naphthalene	0.476	13	0.18 J	0.38 J	0.072 J	0.4 J	0.19 J	15 J	0.028 J	0.028 J	0.047 J	0.57
Phenanthrene	3.949	50	0.37 U	0.24 J	0.11 J	0.0038 U	1.3	30	0.023 J	0.0048 U	0.1 J	1.3
Pyrene	4.525	50	0.37 U	0.071 J	0.051 J	0.0029 U	2.7	76	0.02 J	0.0037 U	0.028 J	25
Total Noncarcinogenic PAHs	NE	NE	0.18	1.996	0.4181	0.699	8.986	260.9	0.093	0.028	0.294	50.546
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.37 U	0.043	0.038 J	0.011 U	1.8	65	0.011 U	0.014 U	0.01 U	9.8
Benzo[a]pyrene	1.046	0.061	0.37 U	0.01 J	0.029 J	0.003 U	1.9	85	0.0093 J	0.0039 U	0.0028 U	15 J
Benzo[b]fluoranthene	0.728	1.1	0.37 U	0.011 J	0.02 J	0.0032 U	1.4	87	0.0031 U	0.004 U	0.0029 U	20 J
Benzo[k]fluoranthene	0.996	1.1	0.37 U	0.011 J	0.028 J	0.0043 UJ	2	48	0.016 J	0.0054 U	0.004 U	5.9 J
Chrysene	1.267	0.4	0.37 U	0.017 J	0.057 J	0.0051 U	1.8	60	0.005 U	0.0065 U	0.0047 U	9.8
Dibenz[a,h]anthracene	0.162	0.014	0.37 U	0.0028 U	0.0028 U	0.0027 U	0.4	14	0.0026 U	0.0034 U	0.0025 U	1.5 J
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.37 U	0.0027 U	0.013 J	0.0027 U	1.1	34	0.0026 U	0.0034 U	0.0025 U	8.1 J
Total Carcinogenic PAHs	NE	NE	ND	0.092	0.185	ND	10.4	393	0.0253	ND	ND	70.1
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	0.18	2.088	0.6031	0.699	19.386	653.9	0.1183	0.028	0.294	120.646
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.37 U	0.025 U	0.14 J	0.025 U	0.11 J	0.23 U	0.024 U	0.032 U	0.023 U	0.36 U
Butyl benzyl phthalate	0.024	50	0.37 U	0.017 U	0.017 U	0.017 U	0.015 U	0.15 U	0.016 U	0.021 U	0.015 U	0.36 U
Carbazole	0.131	NE	0.37 UJ	1.2	0.0032 U	0.16 J	0.18 J	3.2 J	0.0029 U	0.0038 U	0.0028 U	0.36 U
Dibenzofuran	0.197	6.2	0.37 U	0.07 J	0.022 U	0.015 J	0.09 J	6.5	0.021 U	0.027 U	0.025 J	0.15 J
Diethyl phthalate	0.01	7.1	0.37 U	0.011 U	0.012 U	0.011 U	0.01 U	0.1 U	0.011 U	0.014 U	0.01 U	0.36 U
Dimethylphenol, 2,4	0.021	NE	0.37 U	0.039 U	0.016 J	0.067 J	0.016 J	0.83 J	0.037 U	0.048 U	0.035 U	0.36 U
Di-n-butyl phthalate	0.064	8.1	0.37 U	0.012 U	0.012 U	0.012 U	0.011 U	0.11 U	0.012 U	0.015 U	0.011 U	0.36 U
Isophorone	NE	4.4	0.37 U	0.032 U	0.033 U	0.031 U	0.028 U	0.29 U	0.03 U	0.04 U	0.029 U	0.36 U
Methylphenol, 4	0.08	0.9	0.37 U	0.042 U	0.026 J	0.041 U	0.033 J	1.3 J	0.04 U	0.052 U	0.038 U	0.36 U
Methylphenol,2	0.021	0.1	0.37 U	0.038 U	0.039 U	0.018 J	0.01 J	0.48 J	0.036 U	0.047 U	0.034 U	0.36 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	0.94 U	0.013 U	0.013 U	0.012 U	0.011 U	0.11 U	0.012 U	0.016 U	0.011 U	0.92 U
Pentachlorophenol	NE	1	0.94 U	0.078 U	0.078 U	0.073 U	0.069 U	0.69 U	0.073 U	0.096 U	0.069 U	0.92 U
Phenol	0.042	0.03	0.37 U	0.056 U	0.058 U	0.055 U	0.05 U	0.53 J	0.054 U	0.07 U	0.051 U	0.36 U
Biphenyl,1,1	NE	NE	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	0.36 U
Total SVOCs	NE	500	0.18	3.358	0.7851	0.959	19.825	666.74	0.1183	0.028	0.319	120.796
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	1.72	3.62	9.1	1.05	11.66	367	NA	0.5	NA	8.49

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB05 48-49 4/17/2006 GEI	14GH014 8-10 3/12/2004 H&A	14GH014 16-18 3/12/2004 H&A	14GH014 26-28 3/12/2004 H&A	14PH001 0-2 2/25/2004 H&A	14PH001 2-4 2/25/2004 H&A	14PH001 5-7 3/16/2004 H&A	14PH001 13-15 3/16/2004 H&A	14PH001 29-31 3/16/2004 H&A	ST14SB04 2-4 4/3/2006 GEI
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	1.14 J	NA	NA	NA	6.2	7.7	2.6	2	NA	5.79
Barium	124.7	300	84.6 J	NA	NA	NA	67.5	74.2	66.9	19.8 J	NA	59.2 J
Cadmium	0.2	1	0.264 J	NA	NA	NA	0.11 J	0.16 J	0.095 U	0.12 U	NA	0.076 J
Chromium	36.69	10	18.5	NA	NA	NA	20.3	13	13.3	19	NA	11.7
Lead	237.7	237.7	4.77	NA	NA	NA	121	177	121	9	NA	116 J
Mercury	1.305	0.1	0.011 UJ	NA	NA	NA	0.23	0.39	0.19	0.06	NA	0.313 J
Silver	0.229	0.229	1.12 UJ	NA	NA	NA	0.15 U	0.16 U	0.33 U	0.43 U	NA	1.09 UJ
Aluminum	7960	7960	6880 J	NA	NA	NA	6770	6230	7980	10500	NA	6560 J
Antimony	NE	SB	6.8 UJ	NA	NA	NA	0.86 U	0.88 U	1.4 U	1.8 U	NA	1.82 J
Beryllium	0.463	0.16	0.414 J	NA	NA	NA	0.39 J	0.42 J	0.45 J	0.51 J	NA	0.368 J
Calcium	11563	11563	6600 J	NA	NA	NA	3190	20400	2440	1620	NA	8580 J
Cobalt	5.698	30	12.1 J	NA	NA	NA	4.6 J	6.0 J	5.2 J	5.6 J	NA	5.24 J
Copper	35.84	25	24.4 J	NA	NA	NA	27.5	64.2	22.1	6.7 J	NA	30.8
Iron	14369	2000	17700 J	NA	NA	NA	12800	15500	12600	20600	NA	10500 J
Magnesium	3129	3129	5180 J	NA	NA	NA	1840	2000	1910	4320	NA	2200 J
Manganese	358.5	358.5	404	NA	NA	NA	285	287	197	314	NA	248 J
Nickel	15.3	13	16.2 J	NA	NA	NA	12.1	17.8	13.1	14.7	NA	11.9 J
Potassium	1193	1193	3300 J	NA	NA	NA	707 J	895 J	498 J	1500	NA	1090 J
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	213 J	NA	NA	NA	79.7 U	139 J	253 J	407 J	NA	224 J
Thallium	NE	SB	1.12 U	NA	NA	NA	0.97 U	1.00 U	1.1 U	1.5 U	NA	1.09 U
Vanadium	30.25	150	30.3	NA	NA	NA	25.6	20.6	16.8	20.4	NA	19.1
Zinc	81.77	20	61.8 J	NA	NA	NA	75.1	164	99.2	48.6	NA	62.6 J
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.57 U	NA	NA	NA	1	32.7	0.5 U	0.77	NA	2.11
Cyanide, Amenable	NE	NE	0.57 U	NA	NA	NA	NA	NA	NA	NA	NA	0.55

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB04 15-17 4/11/2006 GEI	ST14SB04 53-55 4/11/2006 GEI	14PH002 5-7 3/10/2004 H&A	14PH002 18-20 3/10/2004 H&A	14PH002 28-30 3/10/2004 H&A	14PH003 5-7 3/9/2004 H&A	14PH003 14-16 3/9/2004 H&A	14PH003 25-27 3/9/2004 H&A	ST14SB03 13-15 4/13/2006 GEI	ST14SB03 DUP 13-15 4/13/2006 GEI
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.042 U	0.03 U	0.0039	0.0035 J	0.0019	0.0042	0.071	0.0028 U	0.12 J	0.037 J
Toluene	0.0028	1.5	0.042 U	0.03 U	0.0021 J	0.0022 J	0.0011 J	0.0014 J	0.0036 J	0.00024 U	0.004 J	0.034 U
Ethylbenzene	0.000139	5.5	0.042 U	0.03 U	0.00025 U	0.00028 UJ	0.00023 U	0.00025 U	0.0012 J	0.00023 U	0.005 J	0.034 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.085 U	0.061 U	0.0006 U	0.00067 UJ	0.00056 U	0.0006 U	0.0024 J	0.00057 U	0.075 U	0.068 U
Total BTEX	NE	NE	ND	ND	0.006	0.0057	0.003	0.0056	0.0782	ND	0.129	0.037
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.21 U	0.15 U	0.003 UJ	0.0034 UJ	0.0028 U	0.003 UJ	0.003 UJ	0.0028 UJ	0.19 U	0.17 U
Butanone,2-	0.00202	0.3	0.21 U	0.15 U	R	R	R	R	R	R	0.19 U	0.17 U
Carbon disulfide	0.00156	2.7	0.028 J	0.03 U	0.00037 U	0.0011 J	0.0042 J	0.0008 J	0.0015 J	0.00035 U	0.037 U	0.034 U
Carbon tetrachloride	NE	0.6	0.042 U	0.03 U	0.00026 U	0.00029 UJ	0.00024 U	0.00026 U	0.00026 U	0.00025 U	0.037 U	0.034 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.042 U	0.03 U	0.0035 J	0.00032 UJ	0.00027 U	0.00029 U	0.00029 U	0.00027 U	0.037 U	0.034 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.21 U	0.15 U	0.00092 U	0.001 UJ	0.00086 U	0.00093 U	0.00093 U	0.00087 U	0.19 U	0.17 U
Styrene	NE	NE	0.042 U	0.03 U	0.00015 U	0.00017 UJ	0.00014 U	0.00015 U	0.00015 U	0.00014 U	0.037 U	0.034 U
Tetrachloroethene	0.000149	1.4	0.042 U	0.03 U	0.0042	0.00024 UJ	0.0002 U	0.0002 U	0.00022 U	0.0002 U	0.037 U	0.034 U
Trichloroethene	0.00021	0.7	0.042 U	0.03 U	0.00032 U	0.00038 UJ	0.00032 U	0.00032 U	0.00035 U	0.00032 U	0.037 U	0.034 U
Methylcyclohexane	NE	NE	0.042 U	0.03 U	NA	NA	NA	NA	NA	NA	0.037 U	0.034 U
Methyl acetate	NE	NE	0.042 U	0.03 UJ	NA	NA	NA	NA	NA	NA	0.037 U	0.034 U
Isopropyl benzene	NE	NE	0.042 U	0.03 U	NA	NA	NA	NA	NA	NA	0.037 U	0.034 UJ
Total VOCs	NE	10	0.028	ND	0.0137	0.0068	0.0072	0.0064	0.0797	ND	0.129	0.037
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	NA	NA	NA	0.055	0.085	0.012	0.016	0.037	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.57 U	0.4 U	0.052 J	0.022 U	0.019 U	0.4 J	0.56 J	0.019 U	0.49 U	0.46 U
Acenaphthene	0.117	50	0.57 U	0.4 U	0.081 J	0.0039 U	0.018 J	0.38 J	0.3 J	0.015 J	0.49 U	0.46 U
Acenaphthylene	0.259	41	0.57 U	0.4 U	0.46	0.0039 U	0.056 J	0.27 J	0.019 UJ	0.0035 U	0.49 U	0.46 U
Anthracene	0.488	50	0.57 U	0.4 U	0.5	0.0036 U	0.0031 U	0.25 J	0.017 UJ	0.0032 U	0.49 U	0.46 U
Benzo[g,h,i]perylene	0.565	50	0.57 U	0.4 UJ	2.3	0.0049 U	0.0043 U	0.42 J	0.024 UJ	0.0044 U	0.49 UJ	0.46 UJ
Fluoranthene	3.416	50	0.57 U	0.4 U	3.8	0.0015 U	0.0013 U	0.97	0.13 J	0.0013 U	0.49 U	0.094 J
Fluorene	0.267	50	0.57 U	0.4 U	0.074 J	0.0032 U	0.0028 U	0.22 J	0.015 UJ	0.0028 U	0.49 U	0.46 U
Naphthalene	0.476	13	0.57 U	0.1 J	0.29 J	0.0041 U	0.039 J	3.6	50 J	0.0036 U	0.44 J	0.48
Phenanthrene	3.949	50	0.57 U	0.095 J	1.9	0.0042 U	0.0037 U	0.9	0.34 J	0.0038 U	0.49 U	0.46 U
Pyrene	4.525	50	0.57 U	0.4 U	3.9	0.0032 U	0.012 J	0.93	0.13 J	0.0029 U	0.49 U	0.09 J
Total Noncarcinogenic PAHs	NE	NE	ND	0.195	13.357	ND	0.125	8.34	51.46	0.015	0.44	0.664
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.57 U	0.4 U	2.1	0.012 U	0.011 U	0.43	0.078 J	0.011 U	0.49 U	0.46 U
Benzo[a]pyrene	1.046	0.061	0.57 U	0.4 U	2.3	0.0034 U	0.003 U	0.4	0.079 J	0.003 U	0.49 U	0.46 U
Benzo[b]fluoranthene	0.728	1.1	0.57 U	0.4 U	3	0.0036 U	0.0031 U	0.35	0.072 J	0.0032 U	0.49 U	0.46 U
Benzo[k]fluoranthene	0.996	1.1	0.57 U	0.4 U	2.4 J	0.0048 UJ	0.0042 UJ	0.38 J	0.098 J	0.0043 U	0.49 U	0.46 U
Chrysene	1.267	0.4	0.57 U	0.4 U	2.5	0.0057 U	0.005 U	0.52	0.13 J	0.0051 U	0.49 U	0.46 U
Dibenzo[a,h]anthracene	0.162	0.014	0.57 U	0.4 UJ	0.58	0.003 U	0.0026 U	0.13	0.014 UJ	0.0027 U	0.49 UJ	0.46 UJ
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.57 U	R	2.2	0.003 U	0.0026 U	0.27	0.014 UJ	0.0027 U	R	R
Total Carcinogenic PAHs	NE	NE	ND	ND	15.08	ND	ND	2.48	0.457	ND	ND	ND
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	ND	0.195	28.437	ND	0.125	10.82	51.917	0.015	0.44	0.664
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.57 U	0.4 U	0.025 U	0.028 U	0.024 U	0.026 U	1.3 J	0.13 U	0.49 U	0.46 U
Butyl benzyl phthalate	0.024	50	0.57 U	0.4 U	0.017 U	0.019 U	0.016 U	0.017 U	0.089 UJ	0.017 U	0.49 U	0.46 U
Carbazole	0.131	NE	0.57 UJ	0.4 U	0.16 J	0.0034 U	0.0029 U	0.12 J	0.016 UJ	0.003 U	0.49 U	0.46 U
Dibenzofuran	0.197	6.2	0.57 U	0.4 U	0.1 J	0.024 U	0.021 U	0.23 J	0.11 UJ	0.021 U	0.49 U	0.46 U
Diethyl phthalate	0.01	7.1	0.57 U	0.4 U	0.011 U	0.012 U	0.011 U	0.012 U	0.059 UJ	0.011 U	0.49 U	0.46 U
Dimethylphenol, 2,4	0.021	NE	0.57 U	0.4 U	0.039 U	0.042 U	0.037 U	0.04 U	0.2 UJ	0.038 U	0.49 U	0.46 U
Di-n-butyl phthalate	0.064	8.1	0.57 U	0.4 U	0.012 U	0.013 U	0.012 U	0.012 U	0.064 UJ	0.012 U	0.49 U	0.46 U
Isophorone	NE	4.4	0.57 U	0.4 U	0.032 U	0.035 U	0.03 U	0.033 U	0.17 UJ	0.031 U	0.49 U	0.46 U
Methylphenol, 4	0.08	0.9	0.57 U	0.4 U	0.01 J	0.046 U	0.04 U	0.017 J	0.22 UJ	0.041 U	0.49 U	0.46 U
Methylphenol,2	0.021	0.1	0.57 U	0.4 U	0.038 U	0.042 U	0.036 U	0.039 U	0.2 UJ	0.037 U	0.49 U	0.46 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	1.4 U	1 U	0.013 U	0.014 U	0.012 U	0.013 U	0.066 UJ	0.012 U	1.2 U	1.1 U
Pentachlorophenol	NE	1	1.4 U	1 U	0.078 U	0.082 U	0.073 U	0.078 U	0.4 UJ	0.073 U	1.2 U	1.1 U
Phenol	0.042	0.03	0.57 U	0.4 U	0.056 U	0.062 U	0.054 U	0.058 U	0.3 UJ	0.055 U	0.49 U	0.46 U
Biphenyl,1,1	NE	NE	0.57 U	0.4 U	NA	NA	NA	NA	NA	NA	0.49 U	0.46 U
Total SVOCs	NE	500	ND	0.195	28.707	ND	0.125	11.187	53.217	0.015	0.44	0.664
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	3.02	2.569	8.91	NA	NA	7.48	71.4	NA	4.33	3.93

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB04 15-17 4/11/2006 GEI	ST14SB04 53-55 4/11/2006 GEI	14PH002 5-7 3/10/2004 H&A	14PH002 18-20 3/10/2004 H&A	14PH002 28-30 3/10/2004 H&A	14PH003 5-7 3/9/2004 H&A	14PH003 14-16 3/9/2004 H&A	14PH003 25-27 3/9/2004 H&A	ST14SB03 13-15 4/13/2006 GEI	ST14SB03 DUP 13-15 4/13/2006 GEI
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	6.75 J	1.2 U	6.5 J	1.6 J	NA	2.7 J	6.7	NA	11.7 J	10.9 J
Barium	124.7	300	25.1 J	27.7 J	174	23.9 J	NA	149	148	NA	287 J	366 J
Cadmium	0.2	1	0.86 U	0.052 J	0.10 U	0.11 U	NA	0.10 U	0.10 U	NA	0.76 U	0.69 U
Chromium	36.69	10	23.4	8.09	13.7	18	NA	13.9	8	NA	13.8	15.4
Lead	237.7	237.7	11	1.18	265	6.8	NA	241	1150	NA	689	565
Mercury	1.305	0.1	0.019 J	0.012 UJ	0.48	0.023 U	NA	0.54	1.1	NA	1.5 J	0.735 J
Silver	0.229	0.229	1.7 UJ	1.22 UJ	0.18 U	0.19 U	NA	0.18 U	0.81 J	NA	1.5 UJ	1.37 UJ
Aluminum	7960	7960	11000 J	2500 J	5510	8060	NA	6260	3770	NA	5650 J	7070 J
Antimony	NE	SB	10.2 UJ	7.3 UJ	0.98 UJ	1.1 UJ	NA	1.0 U	1.0 U	NA	14.2 J	8.24 UJ
Beryllium	0.463	0.16	0.604 J	0.146 J	0.28 J	0.49 J	NA	0.35 J	0.26 J	NA	0.446 J	0.596 J
Calcium	11563	11563	2600 J	8120 J	21000	430 J	NA	5690	20700	NA	7720 J	9080 J
Cobalt	5.698	30	8.4 J	4.86 J	5.9 J	5.1 J	NA	4.6 J	4.2 J	NA	6.49 J	7.24 J
Copper	35.84	25	13.7 J	10.2 J	99.1	14.9	NA	23	54.2	NA	64.2 J	123 J
Iron	14369	2000	22600 J	7140 J	18700 J	14500 J	NA	12100	11400	NA	19500 J	18100 J
Magnesium	3129	3129	5710 J	4610 J	6660 J	2810 J	NA	2400	1570	NA	1320 J	1380 J
Manganese	358.5	358.5	417	149	452 J	115 J	NA	133	146	NA	251	295
Nickel	15.3	13	20.9 J	10.2 J	13.6	15.4	NA	13.2	10.8	NA	16.2 J	19.6 J
Potassium	1193	1193	2710 J	1290 J	727 J	885 J	NA	750 J	565 J	NA	889 J	989 J
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	924 J	239 J	326 J	193 J	NA	221 J	274 J	NA	474 J	735 J
Thallium	NE	SB	1.7 U	1.22 U	1.1 U	1.2 U	NA	1.1 U	1.2 U	NA	1.5 U	1.37 U
Vanadium	30.25	150	31.6	10.7	18.7	16.5	NA	17.7	12.6 J	NA	22.7	25.1
Zinc	81.77	20	61.7 J	23.4 J	279	36.1	NA	90.1	89.1	NA	68.4 J	66.9 J
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.86 U	0.61 U	56	0.5 U	NA	0.5 U	0.5 U	NA	8.56	7.6
Cyanide, Amenable	NE	NE	0.86 U	0.61 U	NA	NA	NA	NA	NA	NA	1.2	0.69 U

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB03 35-37 4/13/2006 GEI	ST14SB03 55-57 4/13/2006 GEI	ST14SB03 71-73 4/13/2006 GEI	ST14SB03 84-86 4/14/2006 GEI	ST14SB06 24-25 5/4/2006 GEI	ST14SB06 31-33 5/5/2006 GEI	ST14SB06 35-37 5/10/2006 GEI	ST14SB06 53-55 5/10/2006 GEI	ST14SB06 56-57 5/11/2006 GEI	ST14SB06 57-58 5/11/2006 GEI
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.25 J	0.03 J	0.029 U	0.029 U	4.4 J	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Toluene	0.0028	1.5	0.032 UJ	0.031 U	0.029 U	0.029 U	93	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Ethylbenzene	0.000139	5.5	0.014 J	0.017 J	0.029 U	0.029 U	320	0.03 U	0.031 U	0.034 U	0.031 U	0.0093 J
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.0063 J	0.0036 J	0.059 U	0.058 U	1080	0.06 U	0.062 U	0.069 U	0.061 U	0.016 J
Total BTEX	NE	NE	0.2703	0.0506	ND	ND	1497.4	ND	ND	ND	ND	0.0253
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.16 UJ	0.16 U	0.15 U	0.15 U	36 UJ	0.15 U	0.16 U	0.17 U	0.15 U	0.16 U
Butanone,2-	0.00202	0.3	0.16 UJ	0.16 U	0.15 U	0.15 U	36 UJ	0.15 U	0.16 U	0.17 U	0.15 U	0.16 U
Carbon disulfide	0.00156	2.7	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 UJ	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Carbon tetrachloride	NE	0.6	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 U	0.03 UJ	0.031 U	0.034 U	0.031 U	0.033 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	NE	0.3	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 U	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Cyclohexane	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl-2-pentanone,4	NE	1	0.16 UJ	0.16 U	0.15 U	0.15 U	36 U	0.15 U	0.16 U	0.17 U	0.15 U	0.16 U
Styrene	NE	NE	0.032 UJ	0.031 U	0.029 U	0.029 U	4.7 J	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Tetrachloroethene	0.000149	1.4	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 UJ	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Trichloroethene	0.00021	0.7	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 U	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Methylcyclohexane	NE	NE	0.032 UJ	0.031 U	0.029 U	0.029 U	7.1 U	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Methyl acetate	NE	NE	0.032 UJ	0.031 U	0.029 U	0.029 UJ	7.1 UJ	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Isopropyl benzene	NE	NE	0.032 UJ	0.031 U	0.029 U	0.029 U	18	0.03 U	0.031 U	0.034 U	0.031 U	0.033 U
Total VOCs	NE	10	0.2703	0.0506	ND	ND	1520.1	ND	ND	ND	ND	0.0253
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	NA	0.143	NA	NA	10090	0.058	NA	NA	0.032	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.42 U	0.41 U	0.39 U	0.38 U	1200	1	0.42 U	0.46 U	0.15 J	0.43 U
Acenaphthene	0.117	50	0.42 U	0.41 U	0.39 U	0.38 U	290	0.29 J	0.42 U	0.46 U	0.09 J	0.43 U
Acenaphthylene	0.259	41	0.42 U	0.41 U	0.39 U	0.38 U	460	0.41	0.42 U	0.46 U	0.39 U	0.43 U
Anthracene	0.488	50	0.42 U	0.41 U	0.39 U	0.38 U	460	0.49	0.42 U	0.46 U	0.1 J	0.43 U
Benzo[ghi]perylene	0.565	50	0.42 U	0.41 UJ	0.39 U	0.38 U	87 J	0.39 UJ	0.42 UJ	0.46 U	0.39 UJ	0.43 UJ
Fluoranthene	3.416	50	0.42 U	0.41 U	0.39 U	0.38 U	820	0.92	0.42 U	0.46 U	0.18 J	0.43 U
Fluorene	0.267	50	0.42 U	0.41 U	0.39 U	0.38 U	570	0.59	0.42 U	0.46 U	0.12 J	0.43 U
Naphthalene	0.476	13	0.42 U	0.39 J	0.39 U	0.38 U	6500	4.6	0.42 U	0.46 U	0.55	0.43 U
Phenanthrene	3.949	50	0.42 U	0.41 U	0.39 U	0.38 U	1400	1.5	0.42 U	0.46 U	0.39 U	0.43 U
Pyrene	4.525	50	0.42 U	0.41 U	0.39 U	0.38 U	970	0.8	0.42 U	0.46 U	0.19 J	0.43 U
Total Noncarcinogenic PAHs	NE	NE	ND	0.39	ND	ND	12667	10.6	ND	ND	1.38	ND
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.42 U	0.41 U	0.39 U	0.38 U	360	0.38 J	0.42 U	0.46 U	0.078 J	0.43 U
Benzo[a]pyrene	1.046	0.061	0.42 U	0.41 U	0.39 U	0.38 U	240 J	0.26 J	0.42 U	0.46 U	0.39 U	0.43 U
Benzo[b]fluoranthene	0.728	1.1	0.42 U	0.41 U	0.39 U	0.38 U	350 J	0.27 J	0.42 U	0.46 U	0.12 J	0.43 U
Benzo[k]fluoranthene	0.996	1.1	0.42 U	0.41 U	0.39 U	R	180 J	2 U	0.42 U	R	0.099 J	0.43 U
Chrysene	1.267	0.4	0.42 U	0.41 U	0.39 U	0.38 U	340	0.35 J	0.42 U	0.46 U	0.39 U	0.43 U
Dibenz[a,h]anthracene	0.162	0.014	0.42 U	0.41 UJ	0.39 U	0.38 U	15 J	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.42 U	R	0.39 U	0.38 U	43 J	0.056 J	0.42 UJ	0.46 U	0.39 UJ	0.43 UJ
Total Carcinogenic PAHs	NE	NE	ND	ND	ND	ND	1528	1.316	ND	ND	0.297	ND
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	ND	0.39	ND	ND	14195	11.916	ND	ND	1.677	ND
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.42 U	0.41 U	0.39 U	0.38 U	37 UJ	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Butyl benzyl phthalate	0.024	50	0.42 U	0.41 U	0.39 U	0.38 U	37 UJ	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Carbazole	0.131	NE	0.42 UJ	0.41 U	0.39 UJ	0.38 UJ	340 J	0.39 U	0.42 U	0.46 U	0.072 J	0.43 U
Dibenzofuran	0.197	6.2	0.42 U	0.41 U	0.39 U	0.38 U	450	0.44	0.42 U	0.46 U	0.093 J	0.43 U
Diethyl phthalate	0.01	7.1	0.42 U	0.41 U	0.39 U	0.38 U	37 U	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Dimethylphenol, 2,4	0.021	NE	0.42 U	0.41 U	0.39 U	0.38 U	12 J	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Di-n-butyl phthalate	0.064	8.1	0.42 U	0.41 U	0.068 J	0.38 U	37 U	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Isophorone	NE	4.4	0.42 U	0.41 U	0.39 U	0.38 U	26 J	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Methylphenol, 4	0.08	0.9	0.42 U	0.41 U	0.39 U	0.38 U	37 U	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Methylphenol,2	0.021	0.1	0.42 U	0.41 U	0.39 U	0.38 U	37 U	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrophenol,4	NE	0.1	1.1 U	1 U	0.97 U	0.96 U	92 U	0.99 U	1 UJ	1.1 U	0.98 UJ	1.1 U
Pentachlorophenol	NE	1	1.1 U	1 U	0.97 U	0.96 U	92 U	0.99 U	1 U	1.1 U	0.98 U	1.1 U
Phenol	0.042	0.03	0.42 U	0.4 J	0.39 U	0.38 U	37 U	0.39 U	0.42 U	0.46 U	0.39 U	0.43 U
Biphenyl,1,1	NE	NE	0.42 U	0.41 U	0.39 U	0.38 U	190	0.19 J	0.42 U	0.46 U	0.39 U	0.43 U
Total SVOCs	NE	500	ND	0.79	0.068	ND	15213	12.546	ND	ND	1.842	ND
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	2.05	2.56	2.492	2.42	2528	8.24	2.46	2.9	2.18	2.84

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB03 35-37 4/13/2006 GEI	ST14SB03 55-57 4/13/2006 GEI	ST14SB03 71-73 4/13/2006 GEI	ST14SB03 84-86 4/14/2006 GEI	ST14SB06 24-25 5/4/2006 GEI	ST14SB06 31-33 5/5/2006 GEI	ST14SB06 35-37 5/10/2006 GEI	ST14SB06 53-55 5/10/2006 GEI	ST14SB06 56-57 5/11/2006 GEI	ST14SB06 57-58 5/11/2006 GEI
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	1.28 UJ	1.91 J	1.18 UJ	1.2 U	2.8 J	0.718 J	1.16 J	NA	NA	1.65
Barium	124.7	300	85.4 J	150 J	72.5 J	61.8 J	41 J	39.1 J	72.9 J	NA	NA	139 J
Cadmium	0.2	1	0.60 U	0.63 U	0.59 U	0.177 J	0.562 UJ	0.599 UJ	0.631 UJ	NA	NA	0.651 UJ
Chromium	36.69	10	14.5	27.3	13.5	13.8	15 J	16 J	19.7 J	NA	NA	23.9 J
Lead	237.7	237.7	7	6.36	2.29	2.91	5.05 J	8.92 J	9.1 J	NA	NA	7.42 J
Mercury	1.305	0.1	0.008 J	0.013 UJ	0.012 UJ	0.012 UJ	0.021 J	0.018 J	0.015 J	NA	NA	0.026 J
Silver	0.229	0.229	1.28 U	1.24 UJ	1.18 U	1.17 UJ	1.75 J	2.48 J	2.88 J	NA	NA	1.3 UJ
Aluminum	7960	7960	6560 J	11400 J	6060 J	5350 J	3760 J	6420 J	6780 J	NA	NA	7800 J
Antimony	NE	SB	7.67 UJ	7.44 UJ	7.1 UJ	6.99 UJ	3.13 J	7.19 UJ	7.58 UJ	NA	NA	7.81 UJ
Beryllium	0.463	0.16	0.34 J	0.511 J	0.159 J	0.261 J	0.265 J	0.429 J	0.491 J	NA	NA	0.66 U
Calcium	11563	11563	17000 J	16400 J	6510 J	9710 J	577 J	11600 J	11400 J	NA	NA	11400 J
Cobalt	5.698	30	6.57 J	11.9 J	7 J	16.4 J	2.41 J	6.32 J	8.14	NA	NA	8.01
Copper	35.84	25	19.2 J	26.6 J	16.6 J	69.2 J	8.42 J	15.2 J	12.7 J	NA	NA	20.3
Iron	14369	2000	12100 J	20800 J	10900 J	12700 J	8750 J	12400 J	13800 J	NA	NA	12900 J
Magnesium	3129	3129	7580 J	10900 J	5560 J	6530 J	1650 J	5940 J	9480 J	NA	NA	7410 J
Manganese	358.5	358.5	428	436	217	216	55.1 J	372 J	362 J	NA	NA	317 J
Nickel	15.3	13	17.7 J	27.9 J	13.5 J	19.7 J	12.1 J	17.8 J	44.8 J	NA	NA	23.3 J
Potassium	1193	1193	2600 J	4920 J	4120 J	3140 J	809 J	2970 J	3410 J	NA	NA	4090 J
Selenium	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	214.8	214.8	641 UJ	657 J	827 J	581 J	210 J	673 J	1000 J	NA	NA	1600 J
Thallium	NE	SB	1.28 U	1.24 U	2.2 J	1.17 U	1.12 U	1.2 U	1.3 U	NA	NA	1.3 U
Vanadium	30.25	150	18.2	36.4	20.1	20.4	20.3	20.3	22.6	NA	NA	23.9
Zinc	81.77	20	39.1 J	65.2 J	38.2 J	50.3 J	19.4 J	30.5 J	30.3 J	NA	NA	39.5 J
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.64 U	0.63 U	0.59 U	0.58 U	0.568 U	0.605 U	0.63 U	NA	NA	0.66 U
Cyanide, Amenable	NE	NE	0.64 U	0.63 U	0.59 U	0.58 U	0.57 U	0.61 U	0.63 U	NA	NA	0.66 U

Blue indicates compound detected in sample.  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB08 27-29 5/2/2006 GEI	ST14SB08 35-37 5/2/2006 GEI	ST14SB08 43-45 5/3/2006 GEI	ST14SB08 50-51 5/3/2006 GEI	ST14SB09 18-20 5/23/2008 AECOM	ST14SB09 DUF 18-20 5/23/2008 AECOM	ST14SB09 22-24 5/23/2008 AECOM	ST14SB09 34-36 5/23/2008 AECOM	ST14SB09 42-45 5/23/2008 AECOM	ST14SB10 10-14 5/29/2008 AECOM
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.031 U	0.03 U	0.029 U	0.031 U	0.0044 U	0.0042 U	240	0.0039 U	0.012 J	0.0048 U
Toluene	0.0028	1.5	0.0072 J	0.03 U	0.029 U	0.031 U	0.0053 U	0.0052 U	160	0.0048 U	0.0050 U	0.0058 U
Ethylbenzene	0.00139	5.5	0.031 U	0.03 U	0.029 U	0.031 U	0.0049 U	0.0047 U	24,000 J	0.0044 U	0.0045 U	0.0053 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	0.011 U	0.011 U	130	0.010 U	0.011 U	0.012 U
o-Xylene	NE	NE	NR	NR	NR	NR	0.0046 U	0.0045 U	48	0.0041 U	0.0043 U	0.0051 U
Xylene, total	0.000472	1.2	0.062 U	0.06 U	0.057 U	0.062 U	ND	ND	178	ND	ND	ND
Total BTEX	NE	NE	0.0072	ND	ND	ND	ND	ND	602	ND	0.012	ND
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.16 U	0.15 U	0.14 U	0.15 U	0.100 U	0.100 U	0.110 U	0.093 U	0.097 U	0.140 J
Butanone,2-	0.00202	0.3	0.16 U	0.15 U	0.14 U	0.15 U	0.030 U	0.030 U	0.032 U	0.027 U	0.029 U	0.033 U
Carbon disulfide	0.00156	2.7	0.031 U	0.03 U	0.029 U	0.031 U	0.0066 U	0.0064 U	0.0068 U	0.0059 U	0.0061 U	0.0072 U
Carbon tetrachloride	NE	0.6	0.031 U	0.03 U	0.029 U	0.031 U	0.0036 U	0.0035 U	0.0037 U	0.0032 U	0.0034 U	0.0039 U
Chlorobenzene	NE	NE	NR	NR	NR	NR	0.0046 U	0.0045 U	0.014 J	0.0041 U	0.0043 U	0.0051 U
Chloroform	NE	0.3	0.031 U	0.03 U	0.029 U	0.031 U	0.0054 U	0.0052 U	0.0056 U	0.0048 U	0.0051 U	0.0059 U
Cyclohexane	NE	NE	NR	NR	NR	NR	0.0062 U	0.0060 U	0.14	0.0056 U	0.0058 U	0.0068 U
Methyl-2-pentanone,4	NE	1	0.16 U	0.15 U	0.14 U	0.15 U	0.023 U	0.023 U	0.024 U	0.021 U	0.022 U	0.025 U
Styrene	NE	NE	0.031 U	0.03 U	0.029 U	0.031 U	0.0038 U	0.0037 U	35,000 J	0.0034 U	0.0035 U	0.0041 U
Tetrachloroethene	0.00149	1.4	0.031 U	0.03 U	0.029 U	0.031 U	0.0075 U	0.0073 U	0.0078 U	0.0068 U	0.0070 U	0.0082 U
Trichloroethene	0.00021	0.7	0.031 U	0.03 U	0.029 U	0.031 U	0.0044 U	0.0043 U	0.0046 U	0.0040 U	0.0041 U	0.0049 U
Methylcyclohexane	NE	NE	0.031 U	0.03 U	0.029 U	0.031 U	0.0050 U	0.0049 U	0.17	0.0045 U	0.0047 U	0.0055 U
Methyl acetate	NE	NE	0.031 U	0.03 U	0.029 U	0.031 U	0.010 U	0.010 U	0.011 U	0.0092 U	0.0096 U	0.011 U
Isopropyl benzene	NE	NE	0.031 U	0.03 U	0.029 U	0.031 U	0.0050 U	0.0048 U	0.23	0.0045 U	0.0047 U	0.0054 U
Total VOCs	NE	10	0.0072	ND	ND	ND	ND	ND	637.554	ND	0.012	0.140
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	0.106	36.4	0.41 U	0.39 U	0.39 U	0.4 U	0.011 U	0.011 U	400	0.010 U	0.011 U	2.100 J
Acenaphthene	0.117	50	0.41 U	0.39 U	0.39 U	0.4 U	0.083 J	0.0085 U	42	0.0079 U	0.0081 U	0.047 U
Acenaphthylene	0.259	41	0.41 U	0.39 U	0.39 U	0.4 U	0.0058 U	0.0058 U	220	0.0054 U	0.0055 U	0.032 U
Anthracene	0.488	50	0.41 U	0.39 U	0.39 U	0.4 U	0.044 J	0.013 U	320	0.012 U	0.013 U	0.073 U
Benzo[a,h,i]perylene	0.565	50	0.41 U	0.39 U	0.39 U	0.4 U	0.052 J	0.028 U	30	0.027 U	0.027 U	0.160 U
Fluoranthene	3.416	50	0.41 U	0.39 U	0.39 U	0.4 U	0.200 J	0.0095 U	340	0.0089 U	0.0091 U	0.240 J
Fluorene	0.267	50	0.41 U	0.39 U	0.39 U	0.4 U	0.011 U	0.011 U	250	0.0099 U	0.010 U	0.230 J
Naphthalene	0.476	13	0.41 U	0.39 U	0.39 U	0.4 U	0.0095 U	0.0095 U	1200	0.0088 U	0.0090 U	0.260 J
Phenanthrene	3.949	50	0.41 U	0.39 U	0.39 U	0.4 U	0.093 J	0.012 U	630	0.060 J	0.055 J	1.200 J
Pyrene	4.525	50	0.41 U	0.39 U	0.39 U	0.4 U	0.200 J	0.0086 U	300	0.0080 U	0.0082 U	0.340 J
Total Noncarcinogenic PAHs	NE	NE	ND	ND	ND	ND	0.672	ND	3732	0.060	0.055	4.370
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	2.599	0.224	0.41 U	0.39 U	0.39 U	0.4 U	0.095 J	0.0095 U	160	0.0088 U	0.0090 U	0.052 U
Benzo[a]pyrene	1.046	0.061	0.41 U	0.39 U	0.39 U	0.4 U	0.080 J	0.012 U	120	0.011 U	0.011 U	0.064 U
Benzo[b]fluoranthene	0.728	1.1	0.41 U	0.39 U	0.39 U	0.4 U	0.089 J	0.028 U	130	0.026 U	0.027 U	0.160 U
Benzo[k]fluoranthene	0.996	1.1	0.41 U	0.39 U	R	0.4 U	0.018 U	0.018 U	33	0.017 U	0.017 U	0.100 U
Chrysene	1.267	0.4	0.41 U	0.39 U	0.39 U	0.4 U	0.097 J	0.0073 U	140	0.0068 U	0.0070 U	0.040 U
Dibenzo[a,h]anthracene	0.162	0.014	0.41 U	0.39 U	0.39 U	0.4 U	0.029 U	0.029 U	4,600 J	0.027 U	0.028 U	0.160 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.41 U	0.39 U	0.39 U	0.4 U	0.042 J	0.010 U	28	0.0093 U	0.0095 U	0.055 U
Total Carcinogenic PAHs	NE	NE	ND	ND	ND	ND	0.403	ND	615.6	ND	ND	ND
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	ND	ND	ND	ND	1.075	ND	4347.6	0.060	0.055	4.370
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.41 U	0.39 U	0.39 U	0.4 U	0.015 U	0.079 J	0.800 U	0.014 U	0.046 J	0.083 U
Butyl benzyl phthalate	0.024	50	0.41 U	0.39 U	0.39 U	0.4 U	0.025 U	0.025 U	1,300 U	0.023 U	0.024 U	0.140 U
Carbazole	0.131	NE	0.41 U	0.39 U	0.39 U	0.4 U	0.030 U	0.030 U	120	0.028 U	0.029 U	0.170 U
Dibenzofuran	0.197	6.2	0.41 U	0.39 U	0.39 U	0.4 U	0.012 U	0.012 U	180	0.011 U	0.012 U	0.067 U
Diethyl phthalate	0.01	7.1	0.41 U	0.39 U	0.39 U	0.4 U	0.013 U	0.013 U	0.710 U	0.012 U	0.013 U	0.074 U
Dimethylphenol, 2,4	0.021	NE	0.41 U	0.39 U	0.39 U	0.4 U	0.012 U	0.012 U	50	0.011 U	0.011 U	0.065 U
Di-n-butyl phthalate	0.064	8.1	0.41 U	0.39 U	0.39 U	0.4 U	0.018 U	0.018 U	0.980 U	0.017 U	0.018 U	0.100 U
Isophorone	NE	4.4	0.41 U	0.39 U	0.39 U	0.4 U	0.013 U	0.013 U	0.680 U	0.012 U	0.012 U	0.071 U
Methylphenol, 4	0.08	0.9	0.41 U	0.39 U	0.39 U	0.4 U	0.012 U	0.012 U	54	0.011 U	0.011 U	0.066 U
Methylphenol,2	0.021	0.1	0.41 U	0.39 U	0.39 U	0.4 U	0.010 U	0.010 U	25	0.0097 U	0.010 U	0.058 U
N-Nitrosodiphenylamine	NE	NE	NR	NR	NR	NR	0.030 U	0.030 U	1,600 U	0.028 U	0.028 U	0.260 J
Nitrophenol,4	NE	0.1	1 U	0.98 U	0.97 U	1 U	0.023 U	0.023 U	1,200 U	0.022 U	0.022 U	0.130 U
Pentachlorophenol	NE	1	1 U	0.98 U	0.97 U	1 U	0.045 U	0.045 U	2,400 U	0.042 U	0.043 U	0.250 U
Phenol	0.042	0.03	0.41 U	0.39 U	0.39 U	0.4 U	0.011 U	0.011 U	23	0.010 U	0.010 U	0.060 U
Biphenyl,1,1	NE	NE	0.41 U	0.39 U	0.39 U	0.4 U	0.012 U	0.012 U	62	0.011 U	0.011 U	0.064 U
Total SVOCs	NE	500	ND	ND	ND	ND	1.075	0.079	4861.6	0.060	0.101	4.630
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	3,509	2,65	2,05	2,76	NA	NA	NA	NA	NA	NA



**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB08 27-29 5/2/2006 GEI	ST14SB08 35-37 5/2/2006 GEI	ST14SB08 43-45 5/3/2006 GEI	ST14SB08 50-51 5/3/2006 GEI	ST14SB09 18-20 5/23/2008 AECOM	ST14SB09 DUF 18-20 5/23/2008 AECOM	ST14SB09 22-24 5/23/2008 AECOM	ST14SB09 34-36 5/23/2008 AECOM	ST14SB09 42-45 5/23/2008 AECOM	ST14SB10 10-14 5/29/2008 AECOM
<b>Metals (mg/kg)</b>												
Arsenic	13.63	7.5	1.2 UJ	1.2 U	1.18 UJ	1.2 UJ	3.24	0.461 J	22	1.04	0.680 J	9.07
Barium	124.7	300	50.7 J	19.2 J	23.1 J	61.6 J	86.7	239	95.1	40.6	199	124 J
Cadmium	0.2	1	0.61 UJ	0.6 UJ	0.592 UJ	0.62 UJ	0.851	2.18	1.09	1.53	1.94	0.494
Chromium	36.69	10	11.9 J	5.5 J	7.5 J	16.2 J	17.7	32.8	17.8	17.4	26.6	10.9
Lead	237.7	237.7	7.2 J	4.5 J	2.75 U	6.8 J	17.3 J	8.550 J	282 J	8.820 J	6.810 J	457 J
Mercury	1.305	0.1	0.012 U	0.012 U	0.032	0.012 U	0.046	0.008 U	0.088	0.008 U	0.008 U	0.579
Silver	0.229	0.229	0.16 J	1.2 UJ	1.36 J	1.2 UJ	0.167 U	0.165 U	0.177 U	0.156 U	0.160 U	1.73
Aluminum	7960	7960	4780 J	1850 J	2380 J	5350 J	8120	10900	7700	4950	9680	3750
Antimony	NE	SB	9.8 J	7.2 UJ	7.1 UJ	7.4 UJ	0.460 U	0.462 J	0.490 U	0.430 U	0.826 J	0.977 J
Beryllium	0.463	0.16	0.62 UJ	0.6 UJ	0.134 J	0.62 UJ	0.121 J	0.024 U	0.025 U	0.022 U	0.023 U	0.026 U
Calcium	11563	11563	13000 J	4220 J	817 J	17700 J	4220	5110	8080	1310	4580	13000 J
Cobalt	5.698	30	6.6 J	6 UJ	4.52 J	7.1 J	11.6	17.2	7.99	9.62	16.3	3.25
Copper	35.84	25	11.9 J	7.5 J	10.6 J	15.8 J	15.1	22.4	22	23.5	23.3	472 J
Iron	14369	2000	11200 J	7060 J	6530 J	12600 J	13800	30200	18000	22900	25700	9280
Magnesium	3129	3129	5800 J	2690 J	1550 J	9760 J	3180	9140	5000	2530	8220	1380
Manganese	358.5	358.5	358 J	178 J	70.3 J	275 J	1230	624	529	293	513	170 J
Nickel	15.3	13	12.8 J	6.4 J	9.4 J	13.4 J	20	28	20.8	13.6	27.8	10.2
Potassium	1193	1193	3190 J	835 J	1070 J	2870 J	1810 J	4140 J	2200 J	1200 J	4340 J	541
Selenium	NE	NE	NR	NR	NR	NR	0.650 U	0.645 U	0.693 U	0.607 U	0.624 U	0.711 U
Sodium	214.8	214.8	712 J	304 J	293 J	802 J	269	309	533	307	338	309 J
Thallium	NE	SB	1.2 U	1.3 J	1.24 J	1.2 U	0.785 U	0.779 U	0.837 U	0.733 U	0.753 U	0.858 U
Vanadium	30.25	150	13.4 J	10	8.82	20.7	22.1	47.6	21.9	49.4	41.1	13.9
Zinc	81.77	20	27.5 J	23 J	18.3 J	34.8 J	48.9	101	43.2	51.6	95.2	71.1
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	0.623 U	0.599 U	0.592 U	0.617 U	0.598 U	0.593 U	16.54	0.555 U	0.570 U	0.654 U
Cyanide, Amenable	NE	NE	0.62 U	0.6 U	0.59 U	0.62 U	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB10 18-20 5/29/2008 AECOM	ST14SB10 20-24 5/29/2008 AECOM	ST14SB10 38-40 5/29/2008 AECOM	ST14SB10 DUF 38-40 5/29/2008 AECOM	ST14SB11 11-13 6/25/2008 AECOM	ST14SB11 20-23 6/25/2008 AECOM	ST14SB11 26-28 6/25/2008 AECOM	ST14SB11 40-44 6/25/2008 AECOM
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.0043 U	0.0042 U	0.0047 U	0.0047 U	0.0026 U	0.0025 U	0.0025 U	0.0039 U
Toluene	0.0028	1.5	0.0052 U	0.0051 U	0.0057 U	0.0057 U	0.0027 U	0.0025 U	0.0025 U	0.0048 U
Ethylbenzene	0.00139	5.5	0.0048 U	0.0047 U	0.0052 U	0.0052 U	0.0023 U	0.0022 U	0.0022 U	0.0044 U
m/p-Xylenes	NE	NE	0.011 U	0.011 U	0.012 U	0.012 U	0.0057 U	0.0053 U	0.0053 U	0.010 U
o-Xylene	NE	NE	0.0045 U	0.0044 U	0.0049 U	0.0049 U	0.0025 U	0.0024 U	0.0024 U	0.0042 U
Xylene, total	0.000472	1.2	ND	ND	ND	ND	ND	ND	ND	ND
Total BTEX	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.120 J	0.099 U	0.110 U	0.140 J	0.022 U	0.021 U	0.021 U	0.093 U
Butanone,2-	0.00202	0.3	0.030 U	0.029 U	0.032 U	0.033 U	0.019 U	0.017 U	0.017 U	0.027 U
Carbon disulfide	0.00156	2.7	0.0064 U	0.0063 U	0.0070 U	0.0070 U	0.0024 U	0.0023 U	0.0023 U	0.0059 U
Carbon tetrachloride	NE	0.6	0.0035 U	0.0034 U	0.0038 U	0.0038 U	0.0029 U	0.0027 U	0.0027 U	0.0032 U
Chlorobenzene	NE	NE	0.0045 U	0.0044 U	0.0049 U	0.0049 U	0.0024 U	0.0022 U	0.0022 U	0.0042 U
Chloroform	NE	0.3	0.0053 U	0.0052 U	0.0058 U	0.0058 U	0.0023 U	0.0021 U	0.0021 U	0.0049 U
Cyclohexane	NE	NE	0.0061 U	0.0060 U	0.0066 U	0.0066 U	0.0021 U	0.0020 U	0.0020 U	0.0056 U
Methyl-2-pentanone,4	NE	1	0.023 U	0.022 U	0.025 U	0.025 U	0.013 U	0.012 U	0.012 U	0.021 U
Styrene	NE	NE	0.0037 U	0.0036 U	0.0040 U	0.0040 U	0.0030 U	0.0028 U	0.0028 U	0.0034 U
Tetrachloroethene	0.00149	1.4	0.0074 U	0.0072 U	0.0080 U	0.0081 U	0.0048 U	0.0045 U	0.0045 U	0.0068 U
Trichloroethene	0.00021	0.7	0.0043 U	0.0043 U	0.0047 U	0.0047 U	0.0020 U	0.0019 U	0.0019 U	0.0040 U
Methylcyclohexane	NE	NE	0.0049 U	0.0048 U	0.0054 U	0.0054 U	0.0028 U	0.0026 U	0.0026 U	0.0045 U
Methyl acetate	NE	NE	0.010 UJ	0.0099 UJ	0.011 UJ	0.011 UJ	0.0057 U	0.0053 U	0.0053 U	0.0093 U
Isopropyl benzene	NE	NE	0.0049 U	0.0048 U	0.0053 U	0.0053 U	0.0028 U	0.0026 U	0.0026 U	0.0045 U
Total VOCs	NE	10	0.120	ND	ND	0.140	ND	ND	ND	ND
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.070 J	0.092 J	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
Acenaphthene	0.117	50	0.059 J	0.083 J	0.0095 U	0.0093 U	0.0093 U	0.0086 U	0.0088 U	0.0082 U
Acenaphthylene	0.259	41	0.0058 U	0.0058 U	0.0064 U	0.0063 U	0.0063 U	0.0058 U	0.0060 U	0.0055 U
Anthracene	0.488	50	0.140 J	0.170 J	0.015 U	0.063 J	0.014 U	0.013 U	0.014 U	0.013 U
Benzo[g,h,i]perylene	0.565	50	0.040 J	0.028 U	0.032 U	0.031 U	0.031 U	0.029 U	0.029 U	0.027 U
Fluoranthene	3.416	50	0.340 J	0.42	0.011 U	0.190 J	0.010 U	0.0097 U	0.0099 U	0.0092 U
Fluorene	0.267	50	0.050 J	0.062 J	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.010 U
Naphthalene	0.476	13	0.0095 U	0.0095 U	0.011 U	0.010 U	0.010 U	0.0096 U	0.0098 U	0.0091 U
Phenanthrene	3.949	50	1.4	2	0.052 J	0.75	0.013 U	0.012 U	0.013 U	0.012 U
Pyrene	4.525	50	0.370 J	0.47	0.0096 U	0.190 J	0.0094 U	0.0087 U	0.0089 U	0.0083 U
Total Noncarcinogenic PAHs	NE	NE	2.469	3.297	0.052	1.193	ND	ND	ND	ND
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.140 J	0.170 J	0.011 U	0.073 J	0.010 U	0.0096 U	0.0098 U	0.0091 U
Benzo[a]pyrene	1.046	0.061	0.075 J	0.072 J	0.013 U	0.047 J	0.013 U	0.012 U	0.012 U	0.011 U
Benzo[b]fluoranthene	0.728	1.1	0.084 J	0.075 J	0.032 U	0.046 J	0.031 U	0.029 U	0.029 U	0.027 U
Benzo[k]fluoranthene	0.996	1.1	0.018 U	0.018 U	0.020 U	0.020 U	0.020 U	0.018 U	0.019 U	0.017 U
Chrysene	1.267	0.4	0.200 J	0.260 J	0.0082 U	0.120 J	0.0080 U	0.0074 U	0.0076 U	0.0071 U
Dibenz[a,h]anthracene	0.162	0.014	0.029 U	0.029 U	0.032 U	0.031 U	0.032 U	0.029 U	0.030 U	0.028 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.041 J	0.0099 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0096 U
Total Carcinogenic PAHs	NE	NE	0.540	0.577	ND	0.286	ND	ND	ND	ND
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	3.009	3.874	0.052	1.479	ND	ND	ND	ND
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.120 J	0.052 J	0.017 U	0.068 J	0.094 J	0.015 U	0.016 U	0.015 U
Butyl benzyl phthalate	0.024	50	0.025 U	0.025 U	0.028 U	0.027 U	0.027 U	0.025 U	0.026 U	0.024 U
Carbazole	0.131	NE	0.030 U	0.030 U	0.034 U	0.033 U	0.033 U	0.030 U	0.031 U	0.029 U
Dibenzofuran	0.197	6.2	0.012 U	0.012 U	0.014 U	0.013 U	0.013 U	0.012 U	0.013 U	0.012 U
Diethyl phthalate	0.01	7.1	0.013 U	0.013 U	0.015 U	0.015 U	0.015 U	0.014 U	0.014 U	0.013 U
Dimethylphenol, 2,4	0.021	NE	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
Di-n-butyl phthalate	0.064	8.1	0.018 U	0.018 U	0.021 U	0.020 U	0.020 U	0.019 U	0.019 U	0.018 U
Isophorone	NE	4.4	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.012 U
Methylphenol, 4	0.08	0.9	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U
Methylphenol,2	0.021	0.1	0.010 U	0.010 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U
N-Nitrosodiphenylamine	NE	NE	0.030 U	0.030 U	0.033 U	0.032 U	0.032 U	0.030 U	0.031 U	0.028 U
Nitrophenol,4	NE	0.1	0.023 U	0.023 U	0.026 U	0.025 U	0.025 U	0.024 U	0.024 U	0.022 U
Pentachlorophenol	NE	1	0.045 U	0.045 U	0.050 U	0.049 U	0.049 U	0.045 U	0.046 U	0.043 U
Phenol	0.042	0.03	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
Biphenyl,1,1	NE	NE	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
Total SVOCs	NE	500	3.129	3.926	0.052	1.547	0.344	ND	ND	ND
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB10	ST14SB10	ST14SB10	ST14SB10 DUF	ST14SB11	ST14SB11	ST14SB11	ST14SB11
Depth Interval (ft):			18-20	20-24	38-40	38-40	11-13	20-23	26-28	40-44
Date Collected:			5/29/2008	5/29/2008	5/29/2008	5/29/2008	6/25/2008	6/25/2008	6/25/2008	6/25/2008
Investigation Conducted by:			AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	6.65	3.75	0.159 U	3.27	5.07	0.145 U	0.147 U	0.139 U
Barium	124.7	300	63.1 J	109 J	118 J	50.5 J	201	45.6	61	80.1
Cadmium	0.2	1	0.603	1.3	1.83	1.09	0.087 U	0.081 U	0.082 U	0.077 U
Chromium	36.69	10	11.2	23.7	28.3	20.3	12.1	19.8	23.1	27.2
Lead	237.7	237.7	599 J	92.8 J	10.5 J	44.1 J	525	7.4	9.24	9.28
Mercury	1.305	0.1	0.19	0.1	0.009 U	0.064	4.4	0.013	0.009 U	0.008 U
Silver	0.229	0.229	1.42	1.83	0.944	1.6	0.385 J	0.169 U	0.171 U	0.162 U
Aluminum	7960	7960	4980	7490	11800	7490	5440	6810	8960	9810
Antimony	NE	SB	0.458 U	0.463 U	1.430 J	0.501 U	0.505 U	0.467 U	0.474 U	0.446 U
Beryllium	0.463	0.16	0.024 U	0.024 U	0.027 U	0.026 U	0.34	0.413	0.449	0.561
Calcium	11563	11563	5990 J	8020 J	10600 J	2990 J	12100	1580	15200	3790
Cobalt	5.698	30	4.73	10	15.7	7.83	5.85	9.67	10.6	16.6
Copper	35.84	25	37.5 J	79.1 J	32.9 J	20.1 J	196	19.7	24.1	32.1
Iron	14369	2000	11400	20600	25500	18800	14200	17400	22900	31000
Magnesium	3129	3129	2180	4100	9700	2990	2130	3100	8410	5510
Manganese	358.5	358.5	170 J	461 J	380 J	122 J	262 J+	96.0 J+	662 J+	507 J+
Nickel	15.3	13	12.1	24.6	27.4	21.4	17.3	24.3	30.9	23.4
Potassium	1193	1193	776	2090	6870	1500	881	2040	2940	4350
Selenium	NE	NE	0.647 U	0.654 U	0.726 U	0.708 U	0.729 J	0.660 U	0.670 U	0.631 U
Sodium	214.8	214.8	289 J	411 J	726 J	276 J	348	323	376	470
Thallium	NE	SB	0.781 U	0.789 U	0.876 U	0.855 U	0.862 U	0.797 U	0.808 U	0.762 U
Vanadium	30.25	150	13.8	48.3	43	31.2	17.8	26.1	27.1	49.7
Zinc	81.77	20	30.6	51.6	82.8	43.1	397	37	44.6	93.9
<b>Cyanide (mg/kg)</b>										
Cyanide, Total	0.705	NE	1	0.807	0.745	0.783	0.653 U	0.604 U	0.617 U	0.577 U
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB11 8-10 6/25/2008 AECOM	ST14SB12 24-28 5/29/2008 AECOM	ST14SB12 44-48 5/30/2008 AECOM	ST14SB13 DUF DUP-051308 5/13/2008 AECOM	ST14SB13 24.0-28.0 5/13/2008 AECOM	ST14SB13 30.0-32.0 5/13/2008 AECOM	ST14SB13 49.0-50.0 5/13/2008 AECOM	ST14SB16 22-24 6/24/2008 AECOM	ST14SB16 48-50 6/24/2008 AECOM
<b>BTEX (mg/kg)</b>											
Benzene	0.00223	0.06	0.0044 U	0.0040 U	0.0046 U	0.014 J	0.017 J	0.0045 U	0.022 J	0.0027 U	0.0024 U
Toluene	0.0028	1.5	0.0054 U	0.0049 U	0.0057 U	0.0050 U	0.0055 U	0.0055 U	0.0058 U	0.0028 U	0.0024 U
Ethylbenzene	0.00139	5.5	0.0049 U	0.0044 U	0.0051 U	0.0098 J	0.012 J	0.0050 U	0.0053 U	0.0024 U	0.0021 U
m/p-Xylenes	NE	NE	0.011 U	0.010 U	0.012 U	0.022 J	0.030 J	0.012 U	0.012 U	0.0059 U	0.0052 U
o-Xylene	NE	NE	0.0047 U	0.0042 U	0.0049 U	0.013 J	0.018 J	0.0048 U	0.0050 U	0.0026 U	0.0023 U
Xylene, total	0.000472	1.2	ND	ND	ND	0.035	0.048	ND	ND	ND	ND
Total BTEX	NE	NE	ND	ND	ND	0.0588	0.077	ND	0.022	ND	ND
<b>Other VOCs (mg/kg)</b>											
Acetone	0.141	0.2	0.100 U	0.094 U	0.110 U	0.096 U	0.110 U	0.110 U	0.110 U	0.023 U	0.020 U
Butanone,2-	0.00202	0.3	0.031 U	0.028 U	0.032 U	0.028 U	0.032 U	0.031 U	0.031 U	0.019 U	0.017 U
Carbon disulfide	0.00156	2.7	0.0067 U	0.0060 U	0.0069 U	0.0061 U	0.0068 U	0.0068 U	0.0071 U	0.0025 U	0.0022 U
Carbon tetrachloride	NE	0.6	0.0036 U	0.0033 U	0.0038 U	0.0033 U	0.0037 U	0.0037 U	0.0039 U	0.0030 U	0.0027 U
Chlorobenzene	NE	NE	0.0047 U	0.0042 U	0.0049 U	0.0043 U	0.0048 U	0.0048 U	0.0050 U	0.0025 U	0.0022 U
Chloroform	NE	0.3	0.0055 U	0.0049 U	0.0057 U	0.0050 U	0.0056 U	0.0056 U	0.0059 U	0.0024 U	0.0021 U
Cyclohexane	NE	NE	0.040 J	0.0056 U	0.0066 U	0.0058 U	0.0064 U	0.0064 U	0.0067 U	0.0022 U	0.0019 U
Methyl-2-pentanone,4	NE	1	0.024 U	0.021 U	0.025 U	0.022 U	0.024 U	0.024 U	0.025 U	0.013 U	0.012 U
Styrene	NE	NE	0.0038 U	0.0034 U	0.0040 U	0.0035 U	0.0039 U	0.0039 U	0.0041 U	0.0031 U	0.0028 U
Tetrachloroethene	0.00149	1.4	0.0076 U	0.0068 U	0.0080 U	0.0070 U	0.0078 U	0.0078 U	0.0082 U	0.0050 U	0.0044 U
Trichloroethene	0.00021	0.7	0.0045 U	0.0040 U	0.0047 U	0.0041 U	0.0046 U	0.0046 U	0.0048 U	0.0021 U	0.0018 U
Methylcyclohexane	NE	NE	0.200 J	0.0046 U	0.0053 U	0.0047 U	0.0052 U	0.0052 U	0.0055 U	0.0029 U	0.0025 U
Methyl acetate	NE	NE	0.010 U	0.0093 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.011 U	0.0059 U	0.0052 U
Isopropyl benzene	NE	NE	0.100 J	0.0045 U	0.0053 U	0.028 J	0.039	0.0051 U	0.0054 U	0.0028 U	0.0025 U
Total VOCs	NE	10	0.340	ND	ND	0.0868	0.116	ND	0.022	ND	ND
<b>VOC TICs (mg/kg)</b>											
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>											
Methylnaphthalene,2	0.106	36.4	1.900 J	0.011 U	0.012 U	0.049 J	0.063 J	0.012 U	0.012 U	0.013 U	0.044 J
Acenaphthene	0.117	50	1.700 J	0.0081 U	0.0093 U	0.0088 U	0.0091 U	0.0090 U	0.0090 U	0.0099 U	0.0088 U
Acenaphthylene	0.259	41	0.430 J	0.0055 U	0.0063 U	0.0060 U	0.0062 U	0.0061 U	0.0061 U	0.0067 U	0.0060 U
Anthracene	0.488	50	0.730 J	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U
Benzo[g,h,i]perylene	0.565	50	0.150 U	0.027 U	0.031 U	0.030 U	0.031 U	0.030 U	0.030 U	0.033 U	0.029 U
Fluoranthene	3.416	50	0.320 J	0.0091 U	0.010 U	0.0099 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0099 U
Fluorene	0.267	50	2.9	0.010 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U
Naphthalene	0.476	13	1.000 J	0.0091 U	0.010 U	0.058 J	0.065 J	0.010 U	0.010 U	0.011 U	0.082 J
Phenanthrene	3.949	50	4.5	0.012 U	0.013 U	0.069 J	0.069 J	0.013 U	0.013 U	0.014 U	0.048 J
Pyrene	4.525	50	1.700 J	0.0082 U	0.0094 U	0.0089 U	0.0092 U	0.0091 U	0.0091 U	0.010 U	0.0089 U
Total Noncarcinogenic PAHs	NE	NE	15.18	ND	ND	0.176	0.197	ND	ND	ND	0.174
<b>Carcinogenic PAHs (mg/kg)</b>											
Benzo[a]anthracene	2.599	0.224	0.230 J	0.0090 U	0.010 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0098 U
Benzo[a]pyrene	1.046	0.061	0.062 U	0.011 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U
Benzo[b]fluoranthene	0.728	1.1	0.150 U	0.027 U	0.031 U	0.029 U	0.030 U	0.030 U	0.030 U	0.033 U	0.029 U
Benzo[k]fluoranthene	0.996	1.1	0.097 U	0.017 U	0.020 U	0.019 U	0.019 U	0.019 U	0.019 U	0.021 U	0.019 U
Chrysene	1.267	0.4	0.039 U	0.0070 U	0.0080 U	0.0076 U	0.0079 U	0.0078 U	0.0078 U	0.0085 U	0.0076 U
Dibenz[a,h]anthracene	0.162	0.014	0.028 U	0.028 U	0.032 U	0.030 U	0.031 U	0.031 U	0.031 U	0.034 U	0.030 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.053 U	0.0095 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.012 U	0.010 U
Total Carcinogenic PAHs	NE	NE	0.230	ND	ND	ND	ND	ND	ND	ND	ND
<b>Total PAHs (mg/kg)</b>											
Total PAHs	NE	NE	15.410	ND	ND	0.176	0.197	ND	ND	ND	0.174
<b>Other SVOCs (mg/kg)</b>											
Bis(2-ethylhexyl)phthalate	0.823	50	0.890 J	0.043 J	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.018 U	0.016 U
Butyl benzyl phthalate	0.024	50	0.130 U	0.024 U	0.027 U	0.026 U	0.027 U	0.026 U	0.026 U	0.029 U	0.026 U
Carbazole	0.131	NE	0.160 U	0.029 U	0.033 U	0.031 U	0.032 U	0.032 U	0.032 U	0.035 U	0.031 U
Dibenzofuran	0.197	6.2	0.420 J	0.012 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U
Diethyl phthalate	0.01	7.1	0.072 U	0.013 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U	0.014 U
Dimethylphenol, 2,4	0.021	NE	0.260 J	0.011 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.014 U	0.012 U
Di-n-butyl phthalate	0.064	8.1	0.099 U	0.018 U	0.020 U	0.019 U	0.020 U	0.020 U	0.020 U	0.022 U	0.019 U
Isophorone	NE	4.4	0.069 U	0.012 U	0.014 U	0.013 U	0.014 U	0.014 U	0.014 U	0.015 U	0.013 U
Methylphenol, 4	0.08	0.9	0.210 J	0.011 U	0.013 U	0.012 U	0.013 U	0.013 U	0.013 U	0.014 U	0.012 U
Methylphenol,2	0.021	0.1	0.056 U	0.010 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U
N-Nitrosodiphenylamine	NE	NE	5.400 J	0.028 U	0.032 U	0.031 U	0.032 U	0.031 U	0.031 U	0.034 U	0.031 U
Nitrophenol,4	NE	0.1	0.130 U	0.022 U	0.025 U	0.024 U	0.025 U	0.025 U	0.025 U	0.027 U	0.024 U
Pentachlorophenol	NE	1	0.240 U	0.043 U	0.049 U	0.046 U	0.048 U	0.047 U	0.047 U	0.052 U	0.046 U
Phenol	0.042	0.03	0.059 U	0.010 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U
Biphenyl,1,1	NE	NE	0.063 U	0.011 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.014 U	0.012 U
Total SVOCs	NE	500	22.59	0.043	ND	0.176	0.197	ND	ND	ND	0.174
<b>SVOC TICs (mg/kg)</b>											
Total SVOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

Sample Borehole Location:	Site-Specific Background Value (from H&A SCR)	NYSDEC RSCOs	ST14SB11 8-10 6/25/2008 AECOM	ST14SB12 24-28 5/29/2008 AECOM	ST14SB12 44-48 5/30/2008 AECOM	ST14SB13 DUF DUP-051308 5/13/2008 AECOM	ST14SB13 24.0-28.0 5/13/2008 AECOM	ST14SB13 30.0-32.0 5/13/2008 AECOM	ST14SB13 49.0-50.0 5/13/2008 AECOM	ST14SB16 22-24 6/24/2008 AECOM	ST14SB16 48-50 6/24/2008 AECOM
<b>Metals (mg/kg)</b>											
Arsenic	13.63	7.5	2.69	0.598 J	2.9	3.17	3.68	0.921	2.05	0.167 U	0.146 U
Barium	124.7	300	175	28.1 J	54.2 J	34.6 J	41.5 J	25.7 J	36.6 J	106	88.3
Cadmium	0.2	1	0.086 U	0.429	1.65	0.083 U	0.084 U	0.084 U	0.085 U	0.093 U	0.081 U
Chromium	36.69	10	18.5	11.5	24.4	11.5	11.2	14.1	10.8	19.2	15
Lead	237.7	237.7	199	3.810 J	11.8 J	95.8	154	12.7	7.3	8.83	7.14
Mercury	1.305	0.1	0.707	0.008 U	0.017	0.212 J-	0.272 J-	0.012 J-	0.009 J-	0.041	0.008 U
Silver	0.229	0.229	0.180 U	0.987	3.46	0.174 U	0.198 J	0.176 U	0.178 U	0.195 U	0.170 U
Aluminum	7960	7960	6570	3400	11800	4750	4760	3620	4060	6200	5660
Antimony	NE	SB	0.497 U	0.440 U	0.498 U	2.88	1.28	0.501 J	0.491 U	0.538 U	0.471 U
Beryllium	0.463	0.16	0.339	0.126 J	0.047 J	0.223 J	0.236 J	0.316	0.314	0.377	0.347
Calcium	11563	11563	15400	425 J	18200 J	1980	2570	1420	17000	2000	14000
Cobalt	5.698	30	7.29	2.63	11.7	4.16	4.14	2.69	4.88	6.41	6.13
Copper	35.84	25	57.9	5.840 J	28.0 J	29.8 J	162 J	11.2 J	13.9 J	14.5	14.6
Iron	14369	2000	19300	9530	23200	10700	10400	8630	12400	16500	13900
Magnesium	3129	3129	2160	1200	10300	2140	2100	1960	6070	3360	5940
Manganese	358.5	358.5	245 J+	54.4 J	510 J	119	122	53.9	365	155 J+	333 J+
Nickel	15.3	13	17.3	10.1	34.9	11.1	10.7	9.44	12.1	18.6	17.8
Potassium	1193	1193	995	434	3720	607	635	1300	1490	1990	1930
Selenium	NE	NE	0.895	0.622 U	0.703 U	0.678 U	0.693 U	0.686 U	0.694 U	0.760 U	0.665 U
Sodium	214.8	214.8	663	86.9 J	2150 J	270	294	131	512	337	203
Thallium	NE	SB	0.848 U	0.751 U	0.849 U	0.819 U	0.836 U	0.828 U	0.838 U	0.918 U	0.803 U
Vanadium	30.25	150	24.5	20.6	27.3	13.8	13.7	19.1	14.2	24.1	18.5
Zinc	81.77	20	71.7	18.9	54.7	53.3	86	20	24.6	29.8	28.6
<b>Cyanide (mg/kg)</b>											
Cyanide, Total	0.705	NE	0.643 U	0.569 U	0.648 U	0.62 U	0.638 U	0.631 U	0.635 U	0.695 U	0.617 U
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample.  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-4  
East 14th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation  
New York, NY**

	Summary Statistics											
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (mg/kg)</b>												
Benzene	106	67	39	32	0	250	14GH004-24-26	0.0008	14GH012 16 - 17 3/16/04 H&A	8.163070149	0.00025	0.042
Toluene	106	48	58	8	0	340	14GH004-24-26	0.0011	14PH002 28 - 30 3/10/04 H&A	12.9451625	0.00021	0.042
Ethylbenzene	106	40	66	7	0	320	ST14SB06 24 - 25 5/4/06 GEI	0.0004	14GH008 9 - 11 2/26/04 H&A	11.939325	0.00021	0.046
m/p-Xylenes	23	3	20	0	0	130	ST14SB09-22-24	0.022	ST14SB13 DUP-DUP-051308	43.35066667	0.0052	0.012
o-Xylene	23	3	20	0	0	48	ST14SB09-22-24	0.013	ST14SB13 DUP-DUP-051308	16.01033333	0.0023	0.0051
Xylene, total	106	41	65	12	0	1080	ST14SB06 24 - 25 5/4/06 GEI	0.0017	14GH013 13 - 15 3/18/04 H&A	42.64169024	-	0.092
Total BTEX	106	70	36	0	0	1497.4	ST14SB06 24 - 25 5/4/06 GEI	0.0008	14GH012 16 - 17 3/16/04 H&A	48.48822571	-	-
<b>Other VOCs (mg/kg)</b>												
Acetone	106	25	81	1	0	0.21	14GH002-2-4	0.027	14GH003-21-23	0.06632	0.0026	36
Butanone,2-	78	13	65	0	0	0.04	14GH002-2-4	0.0083	14GH014 8 - 10 3/12/04 H&A	0.015853846	0.001	36
Carbon disulfide	106	35	71	0	0	0.2	14GH011 20 - 21 3/17/04 H&A	0.0005	14GH013 13 - 15 3/18/04 H&A	0.017094286	0.00032	7.1
Carbon tetrachloride	106	1	105	0	0	0.0006	14GH013 13 - 15 3/18/04 H&A	0.0006	14GH013 13 - 15 3/18/04 H&A	0.0006	0.00022	7.1
Chlorobenzene	23	1	22	0	0	0.014	ST14SB09-22-24	0.014	ST14SB09-22-24	0.014	0.0022	0.0051
Chloroform	106	1	105	0	0	0.0035	14PH002 5 - 7 3/10/04 H&A	0.0035	14PH002 5 - 7 3/10/04 H&A	0.0035	0.00024	7.1
Cyclohexane	23	2	21	0	0	0.14	ST14SB09-22-24	0.04	ST14SB11-8-10	0.09	0.0019	0.0068
Methyl-2-pentanone,4	106	1	105	0	0	0.0025	14GH008 9 - 11 2/26/04 H&A	0.0025	14GH008 9 - 11 2/26/04 H&A	0.0025	0.00078	36
Styrene	106	9	97	0	0	67	14GH004-24-26	0.0008	14GH008 9 - 11 2/26/04 H&A	12.64371111	0.00013	0.79
Tetrachloroethene	106	2	104	0	0	0.0042	14PH002 5 - 7 3/10/04 H&A	0.0009	14GH011 6 - 8 3/17/04 H&A	0.00255	0.00019	7.1
Trichloroethene	106	2	104	0	0	0.0011	14GH003-13-15	0.0009	14GH003-21-23	0.001	0.0003	7.1
Methylcyclohexane	51	4	47	0	0	1	ST14SB05 23 - 25 4/17/06 GEI	0.17	ST14SB09-22-24	0.53	0.0025	7.1
Methyl acetate	51	1	50	0	0	0.78	ST14SB05 23 - 25 4/17/06 GEI	0.78	ST14SB05 23 - 25 4/17/06 GEI	0.78	0.0052	7.1
Isopropyl benzene	51	8	43	0	0	18	ST14SB06 24 - 25 5/4/06 GEI	0.0041	ST14SB01DUP-36-39.8	2.7751375	0.0025	0.79
Total VOCs	92	75	17	12	0	1520.1	ST14SB06 24 - 25 5/4/06 GEI	0.0011	14GH010 14 - 16 3/17/04 H&A	47.14320533	-	-
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	43	43	0	0	0	10090	ST14SB06 24 - 25 5/4/06 GEI	0.0069	14GH010 6 - 8 3/17/04 H&A	298.7839233	-	-
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	106	54	52	6	0	1200	ST14SB06 24 - 25 5/4/06 GEI	0.013	14GH010 14 - 16 3/17/04 H&A	52.67783333	0.01	0.61
Acenaphthene	106	58	48	5	0	200	ST14SB06 24 - 25 5/4/06 GEI	0.0077	14GH012 2 - 4 3/15/04 H&A	8.160151724	0.0031	0.61
Acenaphthylene	106	47	59	5	0	460	ST14SB06 24 - 25 5/4/06 GEI	0.0087	14GH012 16 - 17 3/16/04 H&A	28.55092766	0.0031	0.61
Anthracene	106	59	47	6	0	460	ST14SB06 24 - 25 5/4/06 GEI	0.0082	14GH005-25-26.5	27.5148339	0.0028	0.61
Benzo[a,h,i]perylene	106	42	64	4	0	87	ST14SB06 24 - 25 5/4/06 GEI	0.014	14GH014 16 - 18 3/12/04 H&A	8.905214286	0.004	0.61
Fluoranthene	106	65	41	8	0	820	ST14SB06 24 - 25 5/4/06 GEI	0.01	14GH005-25-26.5	44.21467692	0.0013	0.61
Fluorene	106	51	55	6	0	570	ST14SB06 24 - 25 5/4/06 GEI	0.012	14GH003-6-8	35.14756863	0.0025	0.61
Naphthalene	106	69	37	11	0	6500	ST14SB06 24 - 25 5/4/06 GEI	0.011	14GH003-21-23	178.8248551	0.0033	0.61
Phenanthrene	106	69	37	8	0	1400	ST14SB06 24 - 25 5/4/06 GEI	0.011	14GH009 5 - 7 2/27/04 H&A	71.56001449	0.0037	0.61
Pyrene	106	66	40	6	0	970	ST14SB06 24 - 25 5/4/06 GEI	0.0099	14GH005-25-26.5	41.45280152	0.0029	0.61
Total Noncarcinogenic PAHs	83	69	14	0	0	12667	ST14SB06 24 - 25 5/4/06 GEI	0.015	14PH003 25 - 27 3/9/04 H&A	399.6551522	-	-
<b>Carcinogenic PAHs (mg/kg)</b>												
Benzo[a]anthracene	106	58	48	33	0	360	ST14SB06 24 - 25 5/4/06 GEI	0.0094	14GH003-13-15	22.1020069	0.0088	0.61
Benzo[a]pyrene	106	56	50	42	0	240	ST14SB06 24 - 25 5/4/06 GEI	0.0087	14GH003-6-8	17.06173036	0.0028	0.61
Benzo[b]fluoranthene	106	54	52	17	0	350	ST14SB06 24 - 25 5/4/06 GEI	0.0084	14GH006-5-7	16.84941481	0.0029	0.61
Benzo[k]fluoranthene	103	51	52	18	0	210	14GH004-24-26	0.0087	14GH003-6-8	15.09997451	0.004	2
Chrysene	106	57	49	29	0	340	ST14SB06 24 - 25 5/4/06 GEI	0.0086	14GH003-21-23	20.47337895	0.0047	0.61
Dibenz[a,h]anthracene	106	36	70	36	0	28	14GH007-13-15	0.019	14GH012 5 - 7 3/16/04 H&A	2.896805556	0.0024	0.61
Indeno[1,2,3-cd]pyrene	102	43	59	11	0	78	14GH004-24-26	0.013	14GH014 16 - 18 3/12/04 H&A	7.423627907	0.0024	0.61
Total Carcinogenic PAHs	106	60	46	0	0	1528	ST14SB06 24 - 25 5/4/06 GEI	0.0086	14GH003-21-23	84.12401962	-	-
<b>Total PAHs (mg/kg)</b>												
Total PAHs	106	82	24	0	0	14195	ST14SB06 24 - 25 5/4/06 GEI	0.015	14PH003 25 - 27 3/9/04 H&A	444.3854451	-	-
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	106	21	85	0	0	1.3	14PH003 14 - 16 3/9/04 H&A	0.043	ST14SB12-24-28	0.243333333	0.014	61
Butyl benzyl phthalate	106	1	105	0	0	0.42	14GH013 13 - 15 3/18/04 H&A	0.42	14GH013 13 - 15 3/18/04 H&A	0.42	0.015	37
Carbazole	106	45	61	0	0	340	ST14SB06 24 - 25 5/4/06 GEI	0.0086	14GH003-13-15	18.70439111	0.0027	0.61
Dibenzofuran	106	47	59	7	0	450	ST14SB06 24 - 25 5/4/06 GEI	0.0086	14GH001-5-7	28.8020617	0.011	0.61
Diethyl phthalate	106	2	104	0	0	0.13	14GH002-28-30	0.076	ST14SB01-28-32	0.103	0.01	37
Dimethylphenol, 2,4	106	20	86	0	0	50	ST14SB09-22-24	0.0087	14GH003-6-8	3.93759	0.011	9.2
Di-n-butyl phthalate	106	1	105	0	0	0.068	ST14SB03 71 - 73 4/13/06 GEI	0.068	ST14SB03 71 - 73 4/13/06 GEI	0.068	0.011	37
Isophorone	106	1	105	0	0	26	ST14SB06 24 - 25 5/4/06 GEI	26	ST14SB06 24 - 25 5/4/06 GEI	26	0.012	15
Methylphenol, 4	106	25	81	7	0	54	ST14SB09-22-24	0.0093	14GH005-5-7	3.023804	0.011	37
Methylphenol,2	106	9	97	6	0	25	ST14SB09-22-24	0.01	14PH001 0 - 2 2/25/04 H&A	3.273111111	0.0087	37
N-Nitrosodiphenylamine	23	2	21	0	0	5.4	ST14SB11-8-10	0.26	ST14SB10-10-14	2.83	0.028	1.6
Nitrophenol,4	106	2	104	0	0	0.086	14GH001-17-18.7	0.026	14GH002-5-7	0.056	0.011	92
Pentachlorophenol	106	1	105	0	0	0.039	14GH001-5-7	0.039	14GH001-5-7	0.039	0.042	92
Phenol	106	9	97	8	0	23	ST14SB09-22-24	0.27	14GH002-28-30	3.78	0.01	37
Biphenyl,1,1	51	6	45	0	0	190	ST14SB06 24 - 25 5/4/06 GEI	0.19	ST14SB06 31 - 33 5/5/06 GEI	43.50833333	0.011	0.61
Total SVOCs	106	88	18	6	0	15213	ST14SB06 24 - 25 5/4/06 GEI	0.015	14PH003 25 - 27 3/9/04 H&A	449.4978284	-	-
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	70	70	0	0	0	3391	14GH007-13-15	0.2	ST14SB01-24-28	143.5208571	-	-
<b>Metals (mg/kg)</b>												
Arsenic	57	42	15	5	0	22	ST14SB09-22-24	0.461	ST14SB09 DUP-18-20	4.273761905	0.139	1.3
Barium	57	57	0	6	0	378	ST14SB01-12-16	19.2	ST14SB08 35 - 37 5/2/06 GEI	96.76666667	-	-
Cadmium	57	21	36	12	0	2.18	ST14SB09 DUP-18-20	0.052	ST14SB04 53 - 55 4/11/06 GEI	0.783952381	0.077	0.928
Chromium	57	57	0	30	0	33.6	ST14SB01-12-16	5.5	ST14SB08 35 - 37 5/2/06 GEI	16.9649123	-	-
Lead	57	56	1	10	0	1160	ST14SB01-12-16	1.18	ST14SB04 53 - 55 4/11/06 GEI	132.4446429	2.75	2.75
Mercury	57	38	19	16	0	4.4	ST14SB11-11-13	0.008	ST14SB03 35 - 37 4/13/06 GEI	0.387473684	0.008	0.023
Silver	52	15	37	13	0	3.46	ST14SB12-44-48	0.16	ST14SB08 27 - 29 5/2/06 GEI	1.466266667	0.15	1.7
Aluminum	57	57	0	13	0	14100	ST14SB01-12-16	1850	ST14SB08 35 - 37 5/2/06 GEI	6682.631579	-	-
Antimony	57	12	45	0	0	14.2	ST14SB03 13 - 15 4/13/06 GEI	0.462	ST14SB09 DUP-18-20	4.242166667	0.43	11.1
Beryllium	57	39	18	23	0	0.661	ST14SB11-40-44	0.047	ST14SB12-44-48	0.34674359	0.022	0.928
Calcium	57	57	0	20	0	22900	ST14SB01-12-16	425	ST14SB12-24-28	9281.035088	-	-
Cobalt	57	56	1	16	0	17.2	ST14SB09 DUP-18-20	2.41	ST14SB06 24 - 25 5/4/06 GEI	7.674107143	6	6
Copper	57	57	0	17	0	472	ST14SB10-10-14	5.84	ST14SB12-24-28	45.09403509	-	-
Iron	57	57	0	48	0	31000	ST14SB11-40-44	6530	ST14SB08 43 - 45 5/3/06 GEI	15395.08772	-	-
Magnesium	57	57	0	34	0	10900	ST14SB03 55 - 57 4/13/06 GEI					

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY001	17CY001	17CY001	17CY002	17CY003	17CY003	17CY003	17CY003
Depth Interval (ft bgs):			0-2	2-4	9-11	9-11	0-2	2-4	9-11	15-17
Date Collected:			2/4/2004	2/4/2004	2/11/2004	2/25/2004	2/5/2004	2/5/2004	2/26/2004	2/26/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	NA	NA	NA	0.042	NA	NA	0.0043	0.0014
Toluene	0.0028	1.5	NA	NA	NA	0.003 J	NA	NA	0.002 J	0.0024 J
Ethylbenzene	0.000139	5.5	NA	NA	NA	0.00023 U	NA	NA	0.00021 U	0.00022 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	NA	NA	NA	0.00057 U	NA	NA	0.0017 J	0.00053 U
Total BTEX	NE	NE	NA	NA	NA	0.045	NA	NA	0.008	0.0038
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	NA	NA	NA	0.0028 UJ	NA	NA	0.064 J	0.036 J
Butanone,2-	0.00202	0.3	NA	NA	NA	0.0012 U	NA	NA	R	0.011 J
Carbon disulfide	0.00156	2.7	NA	NA	NA	0.00035 U	NA	NA	0.0023 J	0.0006 J
Chloroform	NE	0.3	NA	NA	NA	0.00027 U	NA	NA	0.00024 U	0.00025 U
Dichloroethane,1,2	NE	0.1	NA	NA	NA	0.00019 U	NA	NA	0.00017 U	0.00018 U
Dichloroethene, cis-1,2	0.000241	NE	NA	NA	NA	0.00035 U	NA	NA	0.00032 U	0.00033 U
Methylene chloride	0.00104	0.1	NA	NA	NA	0.00027 U	NA	NA	0.044 U	0.0009 U
Styrene	NE	NE	NA	NA	NA	0.00014 U	NA	NA	0.00013 U	0.00013 U
Trichloroethane,1,1,1	NE	0.8	NA	NA	NA	0.00033 U	NA	NA	0.0003 U	0.00031 U
Trichloroethene	0.00021	0.7	NA	NA	NA	0.00032 U	NA	NA	0.0041	0.0003 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	NA	NA	NA	0.045	NA	NA	0.0784	0.0514
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	0.0556	0.0163
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.031 J	0.01 J	NA	4	0.026 J	0.19 J	0.12 J	0.33 J
Acenaphthene	0.117	50	0.07 J	0.042 J	NA	2.5 J	0.025 J	0.53 J	0.28 J	0.37 J
Acenaphthylene	0.259	41	0.77	0.051 J	NA	8.7	0.22 J	0.66 J	0.36 J	2.8
Anthracene	0.488	50	0.47	0.13 J	NA	7.5	0.11 J	2.4	0.86	3.8
Benzo[g,h,i]perylene	0.565	50	1.6	0.31 J	NA	12	0.23 J	2.7	0.46 J	7.1
Fluoranthene	3.416	50	2.2	1	NA	48	0.63	11	3.6	17
Fluorene	0.267	50	0.074 J	0.032 J	NA	5	0.024 J	0.67 J	0.29 J	1.2 J
Naphthalene	0.476	13	0.064 J	0.019 J	NA	5.6	0.092 J	0.56 J	0.18 J	0.28 J
Phenanthrene	3.949	50	1.3	0.56	NA	53	0.33 J	7.9	3.4	15
Pyrene	4.525	50	2.6 J	0.92 J	NA	44	0.68 J	10 J	4.5	20
Total Noncarcinogenic PAHs	NE	NE	9.179	3.074	NA	190.3	2.367	36.61	14.05	67.88
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	1.4	0.47	NA	21	0.38	5.7	2	12
Benzo[a]pyrene	1.046	0.061	2	0.47	NA	20	0.4	5.2	1.6 J	11
Benzo[b]fluoranthene	0.728	1.1	1.9	0.39	NA	16	0.25	4.2	1.5 J	9.4
Benzo[k]fluoranthene	0.996	1.1	2	0.44	NA	21	0.39	4.9	1.9 J	11
Chrysene	1.267	0.4	1.7	0.5	NA	25	0.39	5.4	2.2	12
Dibenz[a,h]anthracene	0.162	0.014	0.14	0.1	NA	4.3	0.022 J	0.3	0.16 J	2.4
Indeno[1,2,3-cd]pyrene	0.509	3.2	1.5	0.28	NA	13	0.21	2.7	0.52 J	6.5
Total Carcinogenic PAHs	NE	NE	10.64	2.65	NA	120.3	2.042	28.4	9.88	64.3
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	19.819	5.724	NA	310.6	4.409	65.01	23.93	132.18
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.12 U	0.13 U	NA	0.24 U	0.2 U	0.22 U	0.1 J	0.11 U
Carbazole	0.131	NE	0.17 J	0.047 J	NA	5.6	0.02 J	0.56 J	0.32 J	0.63 J
Dibenzofuran	0.197	6.2	0.048 J	0.013 J	NA	4.8	0.016 J	0.4 J	0.17 J	0.51 J
Dimethylphenol, 2,4	0.021	NE	0.011 J	0.034 U	NA	0.16 J	0.035 U	0.07 U	0.034 U	0.17 U
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.011 U	NA	0.11 U	0.011 U	0.36 J	0.011 U	0.052 U
Methylphenol, 4	0.08	0.9	0.035 J	0.037 U	NA	0.38 J	0.038 U	0.025 J	0.037 U	0.076 J
Methylphenol,2	0.021	0.1	0.035 U	0.034 U	NA	0.11 J	0.034 U	0.069 U	0.034 U	0.16 U
Nitroaniline,4	NE	NE	0.012 J	0.018 U	NA	0.19 U	0.018 U	0.036 U	0.018 U	0.089 U
Phenol	0.042	0.03	0.052 U	0.05 U	NA	0.52 U	0.051 U	0.1 U	0.05 U	0.24 U
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	20.095	5.784	NA	321.65	4.445	66.355	24.52	133.396
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	9.43	0.34	NA	178.5	1.1	25.9	17.78	72

**Table 5-5**  
**East 17th Street Station Subsurface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY001	17CY001	17CY001	17CY002	17CY003	17CY003	17CY003	17CY003
Depth Interval (ft bgs):			0-2	2-4	9-11	9-11	0-2	2-4	9-11	15-17
Date Collected:			2/4/2004	2/4/2004	2/11/2004	2/25/2004	2/5/2004	2/5/2004	2/26/2004	2/26/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	4.6 J	2.7 J	2.7	11.1	5.4 J	5.9	3.1 J	NA
Barium	124.7	300	272	152	146	407	90.6	757	184	NA
Cadmium	0.2	1	0.21 J	0.089 U	0.092 U	0.20 J	0.092 U	0.55 J	0.13 J	NA
Chromium	36.69	10	10.9	12.8	16.5	12.3	22.3	19.5	11.9	NA
Lead	237.7	237.7	420 J	211 J	258	714	71.7 J	639 J	161	NA
Mercury	1.305	0.1	0.40 J	0.28 J	0.29	0.81	0.23 J	1.1 J	0.43	NA
Selenium	NE	2	0.92 U	0.87 U	0.96 U	0.92 U	0.90 U	0.89 U	0.87 U	NA
Silver	0.229	0.229	0.21 J	0.16 U	0.32 U	0.17 U	0.16 J	0.16 J	0.16 U	NA
Aluminum	7960	7960	4110	4820	4270	6910	10500	6360	6150	NA
Antimony	NE	SB	0.92 UJ	0.87 UJ	1.0 J	0.92 U	0.90 UJ	0.90 J	0.87 UJ	NA
Beryllium	0.463	0.16	0.27 J	0.32 J	0.22 J	0.33 J	0.40 J	0.34 J	0.25 J	NA
Calcium	11563	11563	5680 J	6720 J	5710	31200	2630 J	22500 J	18400	NA
Cobalt	5.698	30	4.1 J	5.1 J	3.4 J	4.5 J	4.7 J	6.4 J	5.4 J	NA
Copper	35.84	25	26.3 J	74.1 J	28.1	38	26.9 J	39.7 J	40	NA
Iron	14369	2000	10100	11900	10800	12500	16300	13100	11900	NA
Magnesium	3129	3129	1830	2130	1960	3610	2170	3310	6170	NA
Manganese	358.5	358.5	177 J	259 J	193	265	230 J	265 J	192	NA
Nickel	15.3	13	11.8	16.5	10.4	11.5	11.2	15.1	13	NA
Potassium	1193	1193	707 J	931 J	526 J	1150	557 J	1480 J	864 J	NA
Sodium	214.8	214.8	97.3 J	90.1 J	90.5 U	517 J	254 J	192 J	410 J	NA
Thallium	NE	SB	1.0 U	0.98 U	1.1 U	1.0 U	1.0 U	1.0 U	0.99 U	NA
Vanadium	30.25	150	19.6	17.8	15.3	19.4	28.2	22.6	32.1	NA
Zinc	81.77	20	179	191	116	289	86.8	511	194	NA
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.



**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY003	17CY003	17CY004	17CY004	17CY004	17CY005	17CY005 DUP	17CY006
Depth Interval (ft bgs):			21-23	29-31	9-11	15-17	29-30	9-11	9-11	9-11
Date Collected:			2/26/2004	2/26/2004	2/13/2004	2/13/2004	2/13/2004	3/3/2004	3/3/2004	3/2/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.0021	0.00028 U	0.0008 J	0.00028 U	0.021	NA	NA	0.0029
Toluene	0.0028	1.5	0.0017 J	0.00023 U	0.0018 U	0.0027 U	0.0049 U	NA	NA	0.00024 U
Ethylbenzene	0.000139	5.5	0.00024 U	0.00023 U	0.00022 U	0.0008 J	0.0029 J	NA	NA	0.00023 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.00057 U	0.00056 U	0.00054 U	0.004 J	0.006	NA	NA	0.00057 U
Total BTEX	NE	NE	0.0038	ND	0.0008	0.0048	0.0299	NA	NA	0.0029
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.025 J	0.048 J	0.044	0.074	0.063	NA	NA	0.019 J
Butanone,2-	0.00202	0.3	0.008 J	0.019 J	0.0011 U	0.0012 U	0.0011 U	NA	NA	0.0012 U
Carbon disulfide	0.00156	2.7	0.0036 J	0.0024 J	0.00034 U	0.0009 J	0.0039 J	NA	NA	0.0011 J
Chloroform	NE	0.3	0.00027 U	0.00027 U	0.00026 U	0.00028 U	0.00026 U	NA	NA	0.00027 U
Dichloroethane,1,2	NE	0.1	0.00019 U	0.00018 U	0.00018 U	0.0002 U	0.00018 U	NA	NA	0.00018 U
Dichloroethene, cis-1,2	0.000241	NE	0.00035 U	0.00035 U	0.00034 U	0.00037 U	0.00034 U	NA	NA	0.00035 U
Methylene chloride	0.00104	0.1	0.0009 U	0.0008 U	0.0014 U	0.0009 U	0.0007 U	NA	NA	0.0009 U
Styrene	NE	NE	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00014 U	NA	NA	0.00014 U
Trichloroethane,1,1,1	NE	0.8	0.00033 U	0.00032 U	0.00031 U	0.00035 U	0.00032 U	NA	NA	0.00033 U
Trichloroethene	0.00021	0.7	0.00032 U	0.00032 U	0.0003 U	0.00032 U	0.0003 U	NA	NA	0.00032 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	0.0404	0.0694	0.0448	0.0797	0.0968	NA	NA	0.0296
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	0.13	0.0098	NA	0.16	0.14	NA	NA	0.0068
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.012 J	0.011 J	0.037 U	0.02 U	0.018 U	NA	NA	0.013 J
Acenaphthene	0.117	50	0.024 J	0.0034 U	0.034 J	0.0094 J	0.047 J	NA	NA	0.017 J
Acenaphthylene	0.259	41	0.022 J	0.017 J	0.1 J	0.021 J	0.016 J	NA	NA	0.034 J
Anthracene	0.488	50	0.066 J	0.028 J	0.13 J	0.019 J	0.06 J	NA	NA	0.048 J
Benzo[g,h,i]perylene	0.565	50	0.082 J	0.037 J	0.31 J	0.058 J	0.056 J	NA	NA	0.0044 U
Fluoranthene	3.416	50	0.3 J	0.12 J	0.94	0.1 J	0.15 J	NA	NA	0.3 J
Fluorene	0.267	50	0.024 J	0.0028 U	0.053 J	0.0029 U	0.019 J	NA	NA	0.021 J
Naphthalene	0.476	13	0.014 J	0.0035 U	0.039 J	0.027 J	0.027 J	NA	NA	0.032 J
Phenanthrene	3.949	50	0.24 J	0.11 J	0.66 J	0.058 J	0.11 J	NA	NA	0.22 J
Pyrene	4.525	50	0.34 J	0.12 J	0.88	0.17 J	0.21 J	NA	NA	0.32 J
Total Noncarcinogenic PAHs	NE	NE	1.124	0.443	3.146	0.4624	0.695	NA	NA	1.005
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.17	0.071	0.48	0.078	0.1	NA	NA	0.14
Benzo[a]pyrene	1.046	0.061	0.15	0.066	0.4	0.087	0.11	NA	NA	0.18
Benzo[b]fluoranthene	0.728	1.1	0.094	0.041	0.44	0.065	0.081	NA	NA	0.15
Benzo[k]fluoranthene	0.996	1.1	0.15	0.067	0.44	0.08	0.1	NA	NA	0.17
Chrysene	1.267	0.4	0.17 J	0.08 J	0.55 J	0.08 J	0.12 J	NA	NA	0.18 J
Dibenz[a,h]anthracene	0.162	0.014	0.0027 U	0.0026 U	0.019 J	0.0028 U	0.0026 UJ	NA	NA	0.0027 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.073	0.031 J	0.3	0.051	0.054 J	NA	NA	0.14
Total Carcinogenic PAHs	NE	NE	0.807	0.356	2.629	0.441	0.565	NA	NA	0.96
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	1.931	0.799	5.775	0.9034	1.26	NA	NA	1.965
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.025 U	0.024 U	0.29 J	0.49	0.17 J	NA	NA	0.096 J
Carbazole	0.131	NE	0.014 J	0.0029 U	0.045 J	0.0031 U	0.019 J	NA	NA	0.019 J
Dibenzofuran	0.197	6.2	0.013 J	0.021 U	0.033 J	0.011 J	0.02 J	NA	NA	0.017 J
Dimethylphenol, 2,4	0.021	NE	0.038 U	0.037 U	0.073 U	0.039 U	0.036 U	NA	NA	0.038 U
Di-n-butyl phthalate	0.064	8.1	0.012 U	0.012 U	0.023 U	0.012 U	0.011 U	NA	NA	0.012 U
Methylphenol, 4	0.08	0.9	0.041 U	0.031 J	0.078 U	0.042 U	0.039 U	NA	NA	0.041 U
Methylphenol,2	0.021	0.1	0.037 U	0.036 U	0.072 U	0.038 U	0.035 U	NA	NA	0.037 U
Nitroaniline,4	NE	NE	0.019 U	0.019 U	0.038 U	0.02 U	0.019 U	NA	NA	0.019 U
Phenol	0.042	0.03	0.055 U	0.054 U	0.11 U	0.056 U	0.052 U	NA	NA	0.055 U
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	1.958	0.83	6.143	1.4044	1.469	NA	NA	2.097
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	1.1	4.65	NA	NA	0.7	NA	NA	NA

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY003 21-23 2/26/2004 H&A	17CY003 29-31 2/26/2004 H&A	17CY004 9-11 2/13/2004 H&A	17CY004 15-17 2/13/2004 H&A	17CY004 29-30 2/13/2004 H&A	17CY005 9-11 3/3/2004 H&A	17CY005 DUP 9-11 3/3/2004 H&A	17CY006 9-11 3/2/2004 H&A
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	NA	NA	5	NA	NA	3.1	0.84 J	1.2 J
Barium	124.7	300	NA	NA	106	NA	NA	217	124	64.5
Cadmium	0.2	1	NA	NA	0.095 U	NA	NA	0.35 J	0.27 J	0.098 U
Chromium	36.69	10	NA	NA	13.1 J	NA	NA	17.1	17.4	13.9
Lead	237.7	237.7	NA	NA	132 J	NA	NA	171	42	61.3 J
Mercury	1.305	0.1	NA	NA	1.3	NA	NA	0.59	0.3	0.37 J
Selenium	NE	2	NA	NA	1.00 U	NA	NA	0.95 U	0.90 U	1.0 U
Silver	0.229	0.229	NA	NA	0.40 J	NA	NA	0.40 J	0.30 U	0.34 U
Aluminum	7960	7960	NA	NA	7420 J	NA	NA	8550	8470	7080
Antimony	NE	SB	NA	NA	1.4 U	NA	NA	1.3 U	1.2 U	1.4 U
Beryllium	0.463	0.16	NA	NA	0.38 J	NA	NA	0.31 J	0.39 J	0.28 J
Calcium	11563	11563	NA	NA	10900 J	NA	NA	7130	3010	4280
Cobalt	5.698	30	NA	NA	6.5 J	NA	NA	10.1 J	10.5	9.4 J
Copper	35.84	25	NA	NA	27.6	NA	NA	41.3	28.4	29.8
Iron	14369	2000	NA	NA	16200 J	NA	NA	18600	18700	15400
Magnesium	3129	3129	NA	NA	3020	NA	NA	4310	4060	5130
Manganese	358.5	358.5	NA	NA	497	NA	NA	156	128	101
Nickel	15.3	13	NA	NA	18.7	NA	NA	22.8	22.3	22.9
Potassium	1193	1193	NA	NA	1630	NA	NA	3830	4250	3400
Sodium	214.8	214.8	NA	NA	283 J	NA	NA	249 J	213 J	208 J
Thallium	NE	SB	NA	NA	1.1 U	NA	NA	1.1 U	1.0 U	1.1 U
Vanadium	30.25	150	NA	NA	15.7	NA	NA	20.1	17.2	16.3
Zinc	81.77	20	NA	NA	132	NA	NA	136	81.8	76.7
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

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**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted By:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY006 19-21 3/2/2004 H&A	17CY006 25-25.5 3/2/2004 H&A	17CY007 0-2 1/29/2004 H&A	17CY007 2-4 1/30/2004 H&A	17CY007 8-10 2/16/2004 H&A	17CY007 14-16 2/16/2004 H&A	17CY007 28-30 2/16/2004 H&A	17CY008 0-2 1/29/2004 H&A
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.0006 J	9.2	NA	NA	0.01	0.047	0.0029	NA
Toluene	0.0028	1.5	0.00024 U	2	NA	NA	0.0048 J	0.0017 J	0.0018 J	NA
Ethylbenzene	0.000139	5.5	0.00023 U	13	NA	NA	0.001 J	0.025	0.003 J	NA
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.00057 U	15	NA	NA	0.0035 J	0.0098	0.0058 J	NA
Total BTEX	NE	NE	0.0006	39.2	NA	NA	0.0193	0.0835	0.0135	NA
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.01 J	0.25 U	NA	NA	0.07 J	0.04 J	0.041 J	NA
Butanone,2-	0.00202	0.3	0.0012 U	0.26 U	NA	NA	0.0011 U	0.0011 U	0.0012 U	NA
Carbon disulfide	0.00156	2.7	0.0016 J	0.034 U	NA	NA	0.0033 J	0.0009 J	0.001 J	NA
Chloroform	NE	0.3	0.00027 U	0.023 U	NA	NA	0.00026 U	0.00026 U	0.00027 U	NA
Dichloroethane,1,2	NE	0.1	0.00019 U	0.015 U	NA	NA	0.00018 U	0.00018 U	0.00019 U	NA
Dichloroethene, cis-1,2	0.000241	NE	0.00035 U	0.029 U	NA	NA	0.00034 U	0.00034 U	0.00035 U	NA
Methylene chloride	0.00104	0.1	0.0008 U	0.017 U	NA	NA	0.019 J	0.0013 U	0.006 J	NA
Styrene	NE	NE	0.00014 U	0.28 J	NA	NA	0.00014 U	0.00013 U	0.00014 U	NA
Trichloroethane,1,1,1	NE	0.8	0.00033 U	0.049 U	NA	NA	0.00032 U	0.00031 U	0.00033 U	NA
Trichloroethene	0.00021	0.7	0.00032 U	0.032 U	NA	NA	0.0003 U	0.0003 U	0.00032 U	NA
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	0.0122	39.48	NA	NA	0.1116	0.1244	0.0615	NA
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	0.0095	301.5	NA	NA	0.0069	0.7239	0.0842	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.015 J	15	0.017 U	0.12 J	0.11 J	0.046 J	1.3	0.013 J
Acenaphthene	0.117	50	0.03 J	12	0.019 J	0.14 J	0.4	0.016 J	0.89	0.048 J
Acenaphthylene	0.259	41	0.04 J	5.6	0.061 J	0.62	0.25 J	0.0032 U	0.33 J	0.017 J
Anthracene	0.488	50	0.11 J	17	0.08 J	0.88	0.98	0.021 J	1.7	0.14 J
Benzo[g,h,i]perylene	0.565	50	0.2 J	6.5	0.32 J	2.6	0.72	0.047 J	0.3 J	0.4
Fluoranthene	3.416	50	0.6	47	0.62	3.7	1.8	0.13 J	2.3	0.79
Fluorene	0.267	50	0.043 J	15	0.0025 U	0.21 J	0.37 J	0.0086 J	1.3	0.046 J
Naphthalene	0.476	13	0.049 J	51	0.0032 U	0.18 J	2.5	0.88	2.7	0.0034 U
Phenanthrene	3.949	50	0.42	79	0.3 J	3.2	0.86	0.091 J	5	0.59
Pyrene	4.525	50	0.73	43	0.72	7	3.3 J	0.13 J	2.2 J	1.1
Total Noncarcinogenic PAHs	NE	NE	2.237	291.1	2.12	18.65	11.29	1.3696	18.02	3.144
<b>Carcinogenic PAHs (mg/kg)</b>										
Benzo[a]anthracene	2.599	0.224	0.28	16	0.37	2.8	1.5	0.064	1.2	0.42
Benzo[a]pyrene	1.046	0.061	0.27	14	0.4	2.6	1.5	0.07	0.87	0.43
Benzo[b]fluoranthene	0.728	1.1	0.22	11	0.34	2	0.93	0.05	0.48	0.37
Benzo[k]fluoranthene	0.996	1.1	0.29	14	0.36	2	1.3	0.063	0.86	0.4
Chrysene	1.267	0.4	0.31 J	16	0.42	3.1	2	0.077 J	1.1	0.5
Dibenz[a,h]anthracene	0.162	0.014	0.0026 U	2.2	0.092	0.81	0.32	0.0025 U	0.1	0.13
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.18	6.7	0.29	2.1	0.78	0.042	0.32	0.34
Total Carcinogenic PAHs	NE	NE	1.55	79.9	2.272	15.41	8.33	0.366	4.93	2.59
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	3.787	371	4.392	34.06	19.62	1.7356	22.95	5.734
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.024 U	0.23 U	0.022 U	0.52	0.12 J	0.17 J	0.13 J	0.26 J
Carbazole	0.131	NE	0.036 J	7.5	0.028 J	0.21 J	0.068 J	0.0028 U	0.3 J	0.065 J
Dibenzofuran	0.197	6.2	0.028 J	13	0.01 J	0.11 J	0.06 J	0.02 U	0.64	0.026 J
Dimethylphenol, 2,4	0.021	NE	0.037 U	0.6 J	0.033 U	0.036 U	0.013 J	0.035 U	0.038 U	0.036 U
Di-n-butyl phthalate	0.064	8.1	0.012 U	0.11 U	0.01 U	0.098 J	0.011 U	0.011 U	0.012 U	0.011 U
Methylphenol, 4	0.08	0.9	0.04 U	1 J	0.036 U	0.039 U	0.032 J	0.038 U	0.1 J	0.039 U
Methylphenol,2	0.021	0.1	0.036 U	0.68 J	0.033 U	0.035 U	0.035 U	0.034 U	0.037 U	0.035 U
Nitroaniline,4	NE	NE	0.019 U	0.18 U	0.018 U	0.21 J	0.019 U	0.018 U	0.02 U	0.019 U
Phenol	0.042	0.03	0.054 U	0.88 J	0.048 U	0.052 U	0.052 U	0.051 U	0.055 U	0.052 U
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	3.851	394.66	4.43	35.208	19.913	1.9056	24.12	6.085
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	NA	114.6	3.43	17.52	29.43	6.16	19.05	25.07

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY006	17CY006	17CY007	17CY007	17CY007	17CY007	17CY007	17CY008
Depth Interval (ft bgs):			19-21	25-25.5	0-2	2-4	8-10	14-16	28-30	0-2
Date Collected:			3/2/2004	3/2/2004	1/29/2004	1/30/2004	2/16/2004	2/16/2004	2/16/2004	1/29/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	NA	NA	8.9	14.2	10.3	NA	NA	13.7
Barium	124.7	300	NA	NA	106	552	87.4	NA	NA	84.5
Cadmium	0.2	1	NA	NA	0.088 UJ	1.3 J	0.093 U	NA	NA	0.58 J
Chromium	36.69	10	NA	NA	16.6	30.5	13	NA	NA	28.7
Lead	237.7	237.7	NA	NA	114	1270	189	NA	NA	122
Mercury	1.305	0.1	NA	NA	0.38	0.79	0.75	NA	NA	3.9
Selenium	NE	2	NA	NA	0.86 U	4.6 U	0.98 U	NA	NA	0.91 U
Silver	0.229	0.229	NA	NA	0.15 U	0.18 J	0.33 U	NA	NA	0.16 U
Aluminum	7960	7960	NA	NA	8430	5000	5890 J	NA	NA	9840
Antimony	NE	SB	NA	NA	0.86 U	0.92 U	1.4 UJ	NA	NA	0.91 U
Beryllium	0.463	0.16	NA	NA	0.48 J	0.39 J	0.35 J	NA	NA	0.58 J
Calcium	11563	11563	NA	NA	1380	7780	12300	NA	NA	1910
Cobalt	5.698	30	NA	NA	5.0 J	6.1 J	5.1 J	NA	NA	5.4 J
Copper	35.84	25	NA	NA	35.5	120	27.2	NA	NA	37
Iron	14369	2000	NA	NA	17000	25500	17500	NA	NA	15800
Magnesium	3129	3129	NA	NA	1790	1840	2520	NA	NA	1620
Manganese	358.5	358.5	NA	NA	389	218	290	NA	NA	501
Nickel	15.3	13	NA	NA	12.7	19.1	17.9	NA	NA	16
Potassium	1193	1193	NA	NA	524 J	792 J	920 J	NA	NA	415 J
Sodium	214.8	214.8	NA	NA	91.9 J	134 J	176 J	NA	NA	84.2 UJ
Thallium	NE	SB	NA	NA	0.96 U	1.0 U	1.1 U	NA	NA	1.0 U
Vanadium	30.25	150	NA	NA	22.3	22.8	15.8	NA	NA	35.6
Zinc	81.77	20	NA	NA	114	478	109	NA	NA	84
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY008	17CY008	17CY009	17CY010	17GH001	17GH001	17GH001	17GH002
Depth Interval (ft bgs):			2-4	9-11	8-10	7-9	5-7	13-15	28-30	9-11
Date Collected:			1/29/2004	2/9/2004	2/9/2004	2/9/2004	2/10/2004	2/10/2004	3/9/2004	2/24/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	NA	NA	NA	NA	0.0044	0.0024	0.49	0.0044
Toluene	0.0028	1.5	NA	NA	NA	NA	0.0032 U	0.0025 U	0.23 J	0.0053 J
Ethylbenzene	0.000139	5.5	NA	NA	NA	NA	0.0025 J	0.0017 J	0.48	0.00023 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	NA	NA	NA	NA	0.004 J	0.0028 J	0.88	0.00055 U
Total BTEX	NE	NE	NA	NA	NA	NA	0.0109	0.0069	2.08	0.0097
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	NA	NA	NA	NA	0.056 J	0.051 J	0.21 U	0.058 J
Butanone,2-	0.00202	0.3	NA	NA	NA	NA	0.0069	0.0052 J	R	R
Carbon disulfide	0.00156	2.7	NA	NA	NA	NA	0.0011 J	0.0019 J	0.029 UJ	0.00034 U
Chloroform	NE	0.3	NA	NA	NA	NA	0.00024 U	0.00027 U	0.019 U	0.00026 U
Dichloroethane,1,2	NE	0.1	NA	NA	NA	NA	0.00017 U	0.00018 U	0.013 U	0.00018 U
Dichloroethene, cis-1,2	0.000241	NE	NA	NA	NA	NA	0.00031 U	0.00035 U	0.025 U	0.00034 U
Methylene chloride	0.00104	0.1	NA	NA	NA	NA	0.0041 U	0.0021 U	0.014 U	0.00026 U
Styrene	NE	NE	NA	NA	NA	NA	0.00012 U	0.00014 U	0.018 U	0.00014 U
Trichloroethane,1,1,1	NE	0.8	NA	NA	NA	NA	0.00029 U	0.00032 U	0.041 U	0.00032 U
Trichloroethene	0.00021	0.7	NA	NA	NA	NA	0.00027 U	0.00032 U	0.027 U	0.0003 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	NA	NA	NA	NA	0.0749	0.065	2.08	0.0677
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	0.012	12.56	0.01
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.26 J	NA	NA	NA	0.27 J	0.014 J	0.15 J	0.099 J
Acenaphthene	0.117	50	0.35 J	NA	NA	NA	0.68 J	0.032 J	0.21 J	0.031 J
Acenaphthylene	0.259	41	0.76 J	NA	NA	NA	0.55 J	0.033 J	0.077 J	0.052 J
Anthracene	0.488	50	1.1	NA	NA	NA	2.2	0.089 J	0.33 J	0.15 J
Benzo[g,h,i]perylene	0.565	50	4.2 J	NA	NA	NA	1.2	0.1 J	0.16 J	0.11 J
Fluoranthene	3.416	50	9.1	NA	NA	NA	7.8	0.44	1.1	0.49
Fluorene	0.267	50	0.46 J	NA	NA	NA	0.72 J	0.036 J	0.36 J	0.085 J
Naphthalene	0.476	13	0.65 J	NA	NA	NA	0.57 J	0.045 J	0.52	0.14 J
Phenanthrene	3.949	50	7.2	NA	NA	NA	6.7	0.34 J	1.5	0.42
Pyrene	4.525	50	12	NA	NA	NA	8.4	0.47	0.84	0.51
Total Noncarcinogenic PAHs	NE	NE	36.08	NA	NA	NA	29.09	1.599	5.247	2.087
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	3.3	NA	NA	NA	4.3	0.21	0.38	0.28
Benzo[a]pyrene	1.046	0.061	4.3 J	NA	NA	NA	3.8	0.17	0.29	0.24
Benzo[b]fluoranthene	0.728	1.1	3.5 J	NA	NA	NA	3.6	0.12	0.23	0.15
Benzo[k]fluoranthene	0.996	1.1	4 J	NA	NA	NA	3.8	0.19	0.31 J	0.26
Chrysene	1.267	0.4	4.7	NA	NA	NA	4.3	0.23 J	0.38	0.26 J
Dibenz[a,h]anthracene	0.162	0.014	1.1 J	NA	NA	NA	0.0051 UJ	0.0026 UJ	0.062	0.041
Indeno[1,2,3-cd]pyrene	0.509	3.2	3.5 J	NA	NA	NA	1.4	0.1	0.16	0.093
Total Carcinogenic PAHs	NE	NE	24.4	NA	NA	NA	21.2	1.02	1.812	1.324
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	60.48	NA	NA	NA	50.29	2.619	7.059	3.411
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.047 U	NA	NA	NA	0.5 J	0.094 J	0.023 U	0.024 U
Carbazole	0.131	NE	0.54 J	NA	NA	NA	0.43 J	0.025 J	0.19 J	0.031 J
Dibenzofuran	0.197	6.2	0.38 J	NA	NA	NA	0.52 J	0.029 J	0.22 J	0.061 J
Dimethylphenol, 2,4	0.021	NE	0.071 U	NA	NA	NA	0.071 U	0.036 U	0.035 U	0.037 U
Di-n-butyl phthalate	0.064	8.1	0.022 U	NA	NA	NA	0.022 U	0.011 U	0.011 U	0.012 U
Methylphenol, 4	0.08	0.9	0.076 U	NA	NA	NA	0.018 J	0.039 U	0.038 U	0.01 J
Methylphenol,2	0.021	0.1	0.07 U	NA	NA	NA	0.07 U	0.035 U	0.034 U	0.036 U
Nitroaniline,4	NE	NE	0.036 U	NA	NA	NA	0.036 U	0.019 U	0.018 U	0.019 U
Phenol	0.042	0.03	0.1 U	NA	NA	NA	0.1 U	0.052 U	0.051 U	0.054 U
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	61.4	NA	NA	NA	51.758	2.767	7.469	3.513
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	23.52	NA	NA	NA	18.62	0.34	2.08	1.16

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17CY008	17CY008	17CY009	17CY010	17GH001	17GH001	17GH001	17GH002
Depth Interval (ft bgs):			2-4	9-11	8-10	7-9	5-7	13-15	28-30	9-11
Date Collected:			1/29/2004	2/9/2004	2/9/2004	2/9/2004	2/10/2004	2/10/2004	3/9/2004	2/24/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	21.5	4.3	3.4	5.8	NA	NA	NA	NA
Barium	124.7	300	266	68.3	55.7	200	NA	NA	NA	NA
Cadmium	0.2	1	0.17 J	0.095 U	0.093 U	0.24 J	NA	NA	NA	NA
Chromium	36.69	10	16.8	14.7	17.7	24.7	NA	NA	NA	NA
Lead	237.7	237.7	1200	1590 J	109 J	617 J	NA	NA	NA	NA
Mercury	1.305	0.1	2.9	0.56 J	0.48 J	0.67 J	NA	NA	NA	NA
Selenium	NE	2	0.90 U	1.0 U	0.98 U	1.0 U	NA	NA	NA	NA
Silver	0.229	0.229	0.20 J	0.33 U	0.33 U	0.83 J	NA	NA	NA	NA
Aluminum	7960	7960	6080	6240 J	5340 J	6150 J	NA	NA	NA	NA
Antimony	NE	SB	0.90 U	1.4 UJ	1.4 UJ	1.4 UJ	NA	NA	NA	NA
Beryllium	0.463	0.16	0.43 J	0.36 J	0.36 J	0.42 J	NA	NA	NA	NA
Calcium	11563	11563	4040	35600 J	8900 J	10900 J	NA	NA	NA	NA
Cobalt	5.698	30	8.7 J	5.4 J	5.5 J	5.8 J	NA	NA	NA	NA
Copper	35.84	25	86.9	62.4 J	28.1 J	92.8 J	NA	NA	NA	NA
Iron	14369	2000	30300	13000	13500	15600	NA	NA	NA	NA
Magnesium	3129	3129	2580	3290	3770	2490	NA	NA	NA	NA
Manganese	358.5	358.5	425	378	389	251	NA	NA	NA	NA
Nickel	15.3	13	33.5	18.5	25.3	16.7	NA	NA	NA	NA
Potassium	1193	1193	905 J	736 J	593 J	868 J	NA	NA	NA	NA
Sodium	214.8	214.8	162 J	188 J	199 J	247 J	NA	NA	NA	NA
Thallium	NE	SB	1.0 U	1.1 U	1.1 U	1.2 U	NA	NA	NA	NA
Vanadium	30.25	150	22.2	16.1	14.4	21.1	NA	NA	NA	NA
Zinc	81.77	20	224	57.6	47.1	236	NA	NA	NA	NA
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

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**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17GH002	17GH002	17GH003	17GH003	17GH004	17GH004	17GH004	17GH005
Depth Interval (ft bgs):			15-17	29-31	7-9	15-15.5	9-11	19-20	27-27.5	9-11
Date Collected:			2/24/2004	2/24/2004	2/27/2004	2/27/2004	2/27/2004	3/1/2004	3/1/2004	2/12/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.00025 U	0.00025 U	0.0012	0.0012	0.0009 J	0.0003 U	0.038	0.0069
Toluene	0.0028	1.5	0.00023 U	0.00022 U	0.002 J	0.0024 J	0.0016 J	0.00026 U	0.0068	0.0038 J
Ethylbenzene	0.000139	5.5	0.00023 U	0.00022 U	0.00022 U	0.00023 U	0.00023 U	0.00025 U	0.034	0.0006 J
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.00055 U	0.00054 U	0.00052 U	0.00056 U	0.00056 U	0.00061 U	0.057	0.0028 J
Total BTEX	NE	NE	ND	ND	0.0032	0.0036	0.0025	ND	0.1358	0.0141
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.086 J	0.055 J	0.042 J	0.056 J	0.041 J	0.0031 UJ	0.029 J	0.0028 UJ
Butanone,2-	0.00202	0.3	0.014 J	R	0.0011 U	0.0011 U	0.0092	0.0013 U	0.0081	R
Carbon disulfide	0.00156	2.7	0.0012 J	0.0039 J	0.0018 J	0.0016 J	0.001 J	0.0015 J	0.0019 J	0.004 J
Chloroform	NE	0.3	0.00026 U	0.00026 U	0.00025 U	0.00027 U	0.00027 U	0.00029 U	0.00027 U	0.001 J
Dichloroethane,1,2	NE	0.1	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00021 U	0.00018 U	0.00018 U
Dichloroethene, cis-1,2	0.000241	NE	0.00034 U	0.0012 J	0.00032 U	0.00035 U	0.00035 U	0.00038 U	0.00035 U	0.00034 U
Methylene chloride	0.00104	0.1	0.0008 U	0.00026 U	0.00026 U	0.003 U	0.0032 U	0.0005 U	0.0011 U	0.00026 U
Styrene	NE	NE	0.00014 U	0.00013 U	0.00013 U	0.00014 U	0.00014 U	0.00015 U	0.00014 U	0.00014 U
Trichloroethane,1,1,1	NE	0.8	0.00032 U	0.00031 U	0.0003 U	0.00032 U	0.00032 U	0.00036 U	0.00032 U	0.00032 U
Trichloroethene	0.00021	0.7	0.0003 U	0.0003 U	0.0003 U	0.00032 U	0.00032 U	0.00035 U	0.0013	0.0003 U
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	NE	10	0.1012	0.0601	0.047	0.0612	0.0537	0.0015	0.1761	0.0191
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	0.051	0.055	0.0097	NA	0.0075	0.0762	0.24	0.013
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.018 U	0.019 U	0.023 J	0.023 J	0.018 U	0.074 J	0.72	0.23 J
Acenaphthene	0.117	50	0.014 J	0.0034 U	0.023 J	0.063 J	0.0033 U	0.16 J	0.77	0.17 J
Acenaphthylene	0.259	41	0.0033 U	0.0034 U	0.042 J	0.033 J	0.0033 U	0.035 J	0.35 J	0.23 J
Anthracene	0.488	50	0.013 J	0.0031 U	0.056 J	0.055 J	0.003 U	0.29 J	0.99	0.61
Benzo[g,h,i]perylene	0.565	50	0.0042 U	0.0043 U	0.16 J	0.15 J	0.02 J	0.29 J	1.1	1.1
Fluoranthene	3.416	50	0.063 J	0.0013 U	0.3 J	0.32 J	0.025 J	1	6	3.1
Fluorene	0.267	50	0.0027 U	0.0028 U	0.021 J	0.024 J	0.0027 U	0.17 J	0.87	0.18 J
Naphthalene	0.476	13	0.03 J	0.0035 U	0.038 J	0.097 J	0.0034 U	0.14 J	3.1	0.59
Phenanthrene	3.949	50	0.075 J	0.0037 U	0.24 J	0.21 J	0.019 J	1.3	6.5	2.4
Pyrene	4.525	50	0.065 J	0.0028 U	0.37 J	0.38 J	0.033 J	1.1	6	3
Total Noncarcinogenic PAHs	NE	NE	0.26	ND	1.273	1.355	0.097	4.559	26.4	11.61
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.035 J	0.011 U	0.17	0.15	0.016 J	0.47	1.8	2
Benzo[a]pyrene	1.046	0.061	0.046	0.003 U	0.2	0.18	0.024 J	0.45	2	1.7
Benzo[b]fluoranthene	0.728	1.1	0.029 J	0.0031 U	0.16	0.12	0.018 J	0.32	1.6	1.2
Benzo[k]fluoranthene	0.996	1.1	0.047	0.0042 U	0.2	0.18	0.022 J	0.44	1.8	1.9
Chrysene	1.267	0.4	0.035 J	0.005 U	0.21 J	0.19 J	0.021 J	0.46	2.1	2
Dibenz[a,h]anthracene	0.162	0.014	0.0026 U	0.0026 U	0.047	0.0026 U	0.0026 U	0.082	0.31	0.0027 UJ
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.0025 U	0.0026 U	0.13	0.13	0.015 J	0.27	1.2	1.2
Total Carcinogenic PAHs	NE	NE	0.192	ND	1.117	0.95	0.116	2.492	10.81	10
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	0.452	ND	2.39	2.305	0.213	7.051	37.21	21.61
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.18 J	0.024 U	0.12 J	0.14 J	0.024 U	0.026 U	0.024 U	0.26 J
Carbazole	0.131	NE	0.0029 U	0.0029 U	0.028 J	0.021 J	0.0029 U	0.13 J	0.52	0.19 J
Dibenzofuran	0.197	6.2	0.02 U	0.021 U	0.019 J	0.02 J	0.02 U	0.12 J	0.63	0.23 J
Dimethylphenol, 2,4	0.021	NE	0.036 U	0.037 U	0.034 U	0.036 U	0.036 U	0.04 U	2.2	0.0083 J
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U
Methylphenol, 4	0.08	0.9	0.011 J	0.04 U	0.0079 J	0.026 J	0.039 U	0.043 U	8.4	0.032 J
Methylphenol,2	0.021	0.1	0.035 U	0.036 U	0.034 U	0.035 U	0.035 U	0.039 U	3.8	0.0096 J
Nitroaniline,4	NE	NE	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U	0.021 U	0.019 U	0.019 U
Phenol	0.042	0.03	0.052 U	0.054 U	0.05 U	0.052 U	0.052 U	0.058 U	9.1	0.055 U
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Total SVOCs	NE	500	0.643	ND	2.5649	2.512	0.213	7.301	61.86	22.3399
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	1.85	NA	3.58	2.65	5.24	0.35	13.81	15.05

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17GH002	17GH002	17GH003	17GH003	17GH004	17GH004	17GH004	17GH005
Depth Interval (ft bgs):			15-17	29-31	7-9	15-15.5	9-11	19-20	27-27.5	9-11
Date Collected:			2/24/2004	2/24/2004	2/27/2004	2/27/2004	2/27/2004	3/1/2004	3/1/2004	2/12/2004
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	NA	NA	NA
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.2	1	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	NA
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NE	2	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.229	0.229	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	NA
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	NA
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	NA
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.



**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17GH005	17GH005	17GH006	17GH006	17GH006	17GH006	17SB01	17SB01	17SB02
Depth Interval (ft bgs):			19-21	27-27.8	5-7	13-15	27-29	23.5-25	31-33	2-4	
Date Collected:			2/12/2004	2/12/2004	2/19/2004	2/20/2004	2/20/2004	3/22/2006	3/22/2006	3/13/2006	
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	GEI	GEI	GEI	
<b>BTEX (mg/kg)</b>											
Benzene	0.00223	0.06	0.0036	1.2	0.0006 J	0.00028 U	0.23	0.074	0.0042 J	0.027 U	
Toluene	0.0028	1.5	0.013	1.1	0.0017 J	0.00024 U	0.077 J	0.0048 J	0.031 U	0.027 U	
Ethylbenzene	0.000139	5.5	0.0033 J	0.82	0.00022 U	0.00024 U	0.29 J	0.045 U	0.031 U	0.027 U	
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR	
Xylene, total	0.000472	1.2	0.017	2.2	0.00052 U	0.0016 J	0.48 J	0.069 J	0.062 U	0.054 U	
Total BTEX	NE	NE	0.0369	5.32	0.0023	0.0016	1.077	0.1478	0.0042	ND	
<b>Other VOCs (mg/kg)</b>											
Acetone	0.141	0.2	0.035 J	2.3	0.039 J	0.058 J	R	0.39 J	0.16 U	0.14 U	
Butanone,2-	0.00202	0.3	R	R	0.0011 U	0.012 J	R	0.2 J	0.16 U	0.14 U	
Carbon disulfide	0.00156	2.7	0.0031 J	0.031 UJ	0.00032 U	0.00036 U	0.058 J	0.073 J	0.028 J	0.027 U	
Chloroform	NE	0.3	0.00025 U	0.021 U	0.00025 U	0.00028 U	0.019 U	0.045 U	0.031 U	0.027 U	
Dichloroethane,1,2	NE	0.1	0.00018 U	0.014 U	0.00018 U	0.00019 U	0.012 U	0.045 U	0.031 U	0.027 U	
Dichloroethene, cis-1,2	0.000241	NE	0.00033 U	0.027 U	0.00032 U	0.00036 U	0.025 U	0.045 U	0.0047 J	0.027 U	
Methylene chloride	0.00104	0.1	0.0003 U	0.016 U	0.0009 U	0.00028 U	0.014 U	0.084 UJ	0.12 UJ	0.027 U	
Styrene	NE	NE	0.001 J	0.065 J	0.00013 U	0.00014 U	0.018 U	0.045 U	0.031 U	0.027 U	
Trichloroethane,1,1,1	NE	0.8	0.00031 U	0.045 U	0.0003 U	0.00034 U	0.041 U	0.045 U	0.031 U	0.027 U	
Trichloroethene	0.00021	0.7	0.0003 U	0.03 U	0.0003 U	0.00032 U	0.027 U	0.045 U	0.031 U	0.027 U	
Methylcyclohexane	NE	NE	NA	NA	NA	NA	NA	0.045 U	0.031 U	0.027 U	
Isopropyl benzene	NE	NE	NA	NA	NA	NA	NA	0.013 J	0.031 U	0.027 U	
Cyclohexane	NE	NE	NA	NA	NA	NA	NA	0.045 U	0.031 U	0.027 U	
Total VOCs	NE	10	0.076	7.685	0.0413	0.0716	1.135	0.8238	0.0369	ND	
<b>VOC TICs (mg/kg)</b>											
Total VOC TICs	NE	NE	0.019	15.14	NA	0.071	NA	0.75	NA	NA	
<b>Noncarcinogenic PAHs (mg/kg)</b>											
Methylnaphthalene,2	0.106	36.4	0.14 J	46	0.0092 J	0.01 J	20	0.14 J	0.41 U	0.37 U	
Acenaphthene	0.117	50	0.18 J	37 J	0.035 J	0.0097 J	21	0.12 J	0.41 U	0.37 U	
Acenaphthylene	0.259	41	0.37 J	20 J	0.033 J	0.015 J	3.4 J	0.59 U	0.41 U	0.37 U	
Anthracene	0.488	50	0.39	61	0.11 J	0.03 J	19	0.34 J	0.41 U	0.079 J	
Benzo[g,h,i]perylene	0.565	50	0.86	56	0.18 J	0.04 J	7.8	0.29 J	0.41 U	0.2 J	
Fluoranthene	3.416	50	3.7	320	0.55	0.13 J	47	1	0.41 U	0.79	
Fluorene	0.267	50	0.53	76	0.032 J	0.0029 U	22	0.27 J	0.41 U	0.37 U	
Naphthalene	0.476	13	0.81	330	0.019 J	0.028 J	71	0.2 J	0.41 U	0.37 U	
Phenanthrene	3.949	50	4.4	440	0.46	0.13 J	81	1.2	0.41 U	0.3 J	
Pyrene	4.525	50	3.8	290	0.59	0.13 J	38	0.83	0.41 U	0.74	
Total Noncarcinogenic PAHs	NE	NE	15.18	1676	2.0182	0.5227	330.2	4.39	ND	2.109	
<b>Carcinogenic PAHs (mg/kg)</b>											
Benz[a]anthracene	2.599	0.224	1.2	81	0.28	0.064	13	0.53 J	0.41 U	0.46	
Benzo[a]pyrene	1.046	0.061	1.3	84	0.28	0.057	11	0.46 J	0.41 U	0.44	
Benzo[b]fluoranthene	0.728	1.1	1	64	0.22	0.039 J	8.6	0.45 J	0.41 U	0.55	
Benzo[k]fluoranthene	0.996	1.1	1.3	91	0.28	0.062	13	0.19 J	0.41 U	0.22 J	
Chrysene	1.267	0.4	1.6	100	0.29 J	0.069 J	15	0.5 J	0.41 U	0.48	
Dibenz[a,h]anthracene	0.162	0.014	0.0025 UJ	0.28 UJ	0.045	0.0028 UJ	0.025 UJ	0.59 U	0.41 U	0.37 U	
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.82	52	0.16	0.032 J	7.3 J	0.42 J	0.41 U	0.16 J	
Total Carcinogenic PAHs	NE	NE	7.22	472	1.555	0.323	67.9	2.55	ND	2.31	
<b>Total PAHs (mg/kg)</b>											
Total PAHs	NE	NE	22.4	2148	3.5732	0.8457	398.1	6.94	ND	4.419	
<b>Other SVOCs (mg/kg)</b>											
Bis(2-ethylhexyl)phthalate	0.823	50	0.16 J	2.6 U	0.15 J	0.11 J	0.23 U	0.59 U	0.41 U	0.11 J	
Carbazole	0.131	NE	0.37 J	39 J	0.033 J	0.0031 U	18	0.095 J	0.41 U	0.37 U	
Dibenzofuran	0.197	6.2	0.33 J	53	0.023 J	0.014 J	19	0.59 U	0.41 U	0.37 U	
Dimethylphenol, 2,4	0.021	NE	0.013 J	1 J	0.033 U	0.039 U	0.98 J	0.59 U	0.41 U	0.37 U	
Di-n-butyl phthalate	0.064	8.1	0.011 U	1.2 U	0.01 U	0.012 U	0.11 U	0.59 U	0.41 U	0.37 U	
Methylphenol, 4	0.08	0.9	0.035 J	4.3 J	0.036 U	0.042 U	3.3 J	0.11 J	0.41 U	0.37 U	
Methylphenol,2	0.021	0.1	0.0092 J	1.8 J	0.033 U	0.038 U	1.2 J	0.59 U	0.41 U	0.37 U	
Nitroaniline,4	NE	NE	0.018 U	2.1 U	0.018 U	0.02 U	0.18 U	1.5 U	1 U	0.92 U	
Phenol	0.042	0.03	0.051 U	5.6 J	0.048 UJ	0.056 U	4.1	0.59 U	0.41 U	0.37 U	
Benzaldehyde	NE	NE	NA	NA	NA	NA	NA	0.15 J	R	0.37 UJ	
Biphenyl,1,1	NE	NE	NA	NA	NA	NA	NA	0.59 U	0.41 U	0.37 U	
Acetophenone	NE	NE	NA	NA	NA	NA	NA	0.59 U	0.41 U	0.37 U	
Total SVOCs	NE	500	23.3172	2252.7	3.7792	0.9697	444.68	7.295	ND	4.529	
<b>SVOC TICs (mg/kg)</b>											
Total SVOC TICs	NE	NE	4.19	342	NA	NA	165.2	9.12	2.55	2.105	

**Table 5-5**  
**East 17th Street Station Subsurface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17GH005	17GH005	17GH006	17GH006	17GH006	17GH006	17SB01	17SB01	17SB02
Depth Interval (ft bgs):			19-21	27-27.8	5-7	13-15	27-29	23.5-25	31-33	2-4	
Date Collected:			2/12/2004	2/12/2004	2/19/2004	2/20/2004	2/20/2004	3/22/2006	3/22/2006	3/13/2006	
Investigation Conducted By:			H&A	H&A	H&A	H&A	H&A	GEI	GEI	GEI	
<b>Metals (mg/kg)</b>											
Arsenic	13.63	7.5	NA	NA	NA	NA	NA	13.9 J	1.2 U	5.6 J	
Barium	124.7	300	NA	NA	NA	NA	NA	60.3 J	15.4 J	55 J	
Cadmium	0.2	1	NA	NA	NA	NA	NA	0.89 UJ	0.61 UJ	0.55 UJ	
Chromium	36.69	10	NA	NA	NA	NA	NA	11	4.2	16.5 J	
Lead	237.7	237.7	NA	NA	NA	NA	NA	548 J	4.3 J	66.7 J	
Mercury	1.305	0.1	NA	NA	NA	NA	NA	3.2 J	0.012 J	0.134	
Selenium	NE	2	NA	NA	NA	NA	NA	1.8 UJ	1.2 UJ	1.1 U	
Silver	0.229	0.229	NA	NA	NA	NA	NA	0.72 J	R	0.11 J	
Aluminum	7960	7960	NA	NA	NA	NA	NA	4000 J	968 J	6630 J	
Antimony	NE	SB	NA	NA	NA	NA	NA	10.6 UJ	7.4 UJ	6.6 UJ	
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	0.9 U	0.6 U	0.37 J	
Calcium	11563	11563	NA	NA	NA	NA	NA	6120 J	816 J	3680 J	
Cobalt	5.698	30	NA	NA	NA	NA	NA	6.3 J	1.5 J	5 J	
Copper	35.84	25	NA	NA	NA	NA	NA	65.8 J	6.9 J	30.7 J	
Iron	14369	2000	NA	NA	NA	NA	NA	18000 J	2960 J	19600 J	
Magnesium	3129	3129	NA	NA	NA	NA	NA	2370	557 J	2190 J	
Manganese	358.5	358.5	NA	NA	NA	NA	NA	416 J	24.2 J	363 J	
Nickel	15.3	13	NA	NA	NA	NA	NA	9.4 J	5.7	13.5 J	
Potassium	1193	1193	NA	NA	NA	NA	NA	1630 J	285 J	1310 J	
Sodium	214.8	214.8	NA	NA	NA	NA	NA	2790	75.2 J	558 UJ	
Thallium	NE	SB	NA	NA	NA	NA	NA	1.8 UJ	1.2 UJ	1.1 UJ	
Vanadium	30.25	150	NA	NA	NA	NA	NA	24.6 J	7.6 J	30.5 J	
Zinc	81.77	20	NA	NA	NA	NA	NA	157 J	11.7 J	50.4 J	
<b>Cyanide (mg/Kg)</b>											
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	0.887 U	0.625 U	0.558 U	
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	0.89 U	0.62 U	0.56 U	

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted By:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB02 25-27 3/24/2006 GEI	17SB02 30-31 3/24/2006 GEI	17SB03 2-4 3/15/2006 GEI	17SB03 8-9 3/23/2006 GEI	17SB03 51-52 3/23/2006 GEI	17SB04 2-4 3/14/2006 GEI	17SB04 27-29 3/21/2006 GEI	17SB04 49-51 3/21/2006 GEI
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.26	0.031 U	0.027 U	0.011 J	0.031 U	0.03 U	210 J	0.37 J
Toluene	0.0028	1.5	0.014 J	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	320 J	0.5 J
Ethylbenzene	0.000139	5.5	0.073	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	210 J	0.28 J
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.32	0.062 U	0.053 U	0.054 U	0.063 U	0.061 U	390 J	0.51 J
Total BTEX	NE	NE	0.667	ND	ND	0.011	ND	ND	1130	1.66
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.21 U	0.15 U	0.13 U	0.14 U	0.16 U	0.04 J	5 U	3.8 UJ
Butanone,2-	0.00202	0.3	0.037 J	0.15 U	0.13 U	0.14 U	0.16 U	0.15 U	5 UJ	3.8 UJ
Carbon disulfide	0.00156	2.7	0.016 J	0.031 U	0.027 U	0.027 U	0.031 U	0.0073 J	0.083 J	0.75 U
Chloroform	NE	0.3	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.99 U	0.75 U
Dichloroethane,1,2	NE	0.1	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.99 U	0.75 U
Dichloroethene, cis-1,2	0.000241	NE	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.99 U	0.75 U
Methylene chloride	0.00104	0.1	0.11 UJ	0.031 UJ	0.057 UJ	0.044 UJ	0.031 UJ	0.03 U	0.99 U	0.75 U
Styrene	NE	NE	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	14 J	0.75 U
Trichloroethane,1,1,1	NE	0.8	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.26 J	0.75 U
Trichloroethene	0.00021	0.7	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.99 UJ	0.75 UJ
Methylcyclohexane	NE	NE	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	1.7	0.75 U
Isopropyl benzene	NE	NE	0.064	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	1.8	0.75 U
Cyclohexane	NE	NE	0.042 U	0.031 U	0.027 U	0.027 U	0.031 U	0.03 U	0.74 J	0.75 U
Total VOCs	NE	10	0.784	ND	ND	0.011	ND	0.0473	1148.583	1.66
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	16.38	NA	NA	NA	NA	NA	115.5	3
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.45 J	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	20	0.39 U
Acenaphthene	0.117	50	0.14 J	0.4 U	0.12 J	0.36 U	0.42 U	0.079 J	7.2	0.39 U
Acenaphthylene	0.259	41	0.58 U	0.4 U	0.084 J	0.36 U	0.42 U	0.21 J	9.8	0.39 U
Anthracene	0.488	50	0.43 J	0.4 U	0.33 J	0.36 U	0.42 U	0.7	20	0.39 U
Benzo[g,h,i]perylene	0.565	50	0.58 U	0.4 U	0.56	0.36 U	0.42 U	0.4	20	0.39 U
Fluoranthene	3.416	50	0.93 J	0.4 U	2.4	0.36 U	0.42 U	2.7	150	0.39 U
Fluorene	0.267	50	0.46 J	0.4 U	0.11 J	0.36 U	0.42 U	0.18 J	30	0.39 U
Naphthalene	0.476	13	1.3	0.4 U	0.14 J	0.36 U	0.42 U	0.16 J	150	0.39 U
Phenanthrene	3.949	50	1.6 J	0.4 U	1.3	0.36 U	0.42 U	1.9	170	0.39 U
Pyrene	4.525	50	0.79 J	0.4 U	2.2	0.36 U	0.42 U	2.6	110	0.39 U
Total Noncarcinogenic PAHs	NE	NE	6.1	ND	7.244	ND	ND	8.929	687	ND
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.58 U	0.4 U	1.5	0.36 U	0.42 U	1.5	28	0.39 U
Benzo[a]pyrene	1.046	0.061	0.58 U	0.4 U	1.4	0.36 U	0.42 U	1.5	32	0.39 U
Benzo[b]fluoranthene	0.728	1.1	0.58 U	0.4 U	1.8	0.36 U	0.42 U	2	34	0.39 U
Benzo[k]fluoranthene	0.996	1.1	0.58 UJ	0.4 U	0.75	R	0.42 U	0.69	11	0.39 U
Chrysene	1.267	0.4	0.58 U	0.4 U	1.6	0.36 U	0.42 U	1.5	30	0.39 U
Dibenz[a,h]anthracene	0.162	0.014	0.58 U	0.4 U	0.055 J	0.36 U	0.42 U	0.39 U	1.1	0.39 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.2 J	0.4 U	0.53	0.36 U	0.42 U	0.27 J	23	0.39 U
Total Carcinogenic PAHs	NE	NE	0.2	ND	5.835	ND	ND	7.46	159.1	ND
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	6.3	ND	13.079	ND	ND	16.389	846.1	ND
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.085 J	1 U	0.39 U
Carbazole	0.131	NE	0.17 J	0.4 UJ	0.11 J	0.36 U	0.42 UJ	0.13 J	12 J	0.39 U
Dibenzofuran	0.197	6.2	0.19 J	0.4 U	0.37 U	0.36 U	0.42 U	0.1 J	21	0.39 U
Dimethylphenol, 2,4	0.021	NE	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	0.67 J	0.39 U
Di-n-butyl phthalate	0.064	8.1	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	1 U	0.39 U
Methylphenol, 4	0.08	0.9	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	1.7	0.39 U
Methylphenol,2	0.021	0.1	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	1 U	0.39 U
Nitroaniline,4	NE	NE	1.4 U	1 U	0.92 U	0.92 U	1.1 U	0.97 U	2.6 U	0.99 U
Phenol	0.042	0.03	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	0.53 J	0.39 U
Benzaldehyde	NE	NE	0.58 UJ	0.4 UJ	0.37 U	0.36 UJ	0.42 UJ	0.39 UJ	R	R
Biphenyl,1,1	NE	NE	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	4.7	0.39 U
Acetophenone	NE	NE	0.58 U	0.4 U	0.37 U	0.36 U	0.42 U	0.39 U	0.26 J	0.39 U
Total SVOCs	NE	500	6.66	ND	14.989	ND	ND	16.704	886.96	ND
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	2.82	0.15	6.676	2.18	0.22	12.06	20.11	2.14

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB02	17SB02	17SB03	17SB03	17SB03	17SB03	17SB04	17SB04	17SB04
Depth Interval (ft bgs):			25-27	30-31	2-4	8-9	51-52	2-4	27-29	49-51	
Date Collected:			3/24/2006	3/24/2006	3/15/2006	3/23/2006	3/23/2006	3/14/2006	3/21/2006	3/21/2006	
Investigation Conducted By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	
<b>Metals (mg/kg)</b>											
Arsenic	13.63	7.5	14.5	1.2 U	4.8 J	1.77	1.01 J	15.4	11.6 J	1.2 U	
Barium	124.7	300	85.9	20.2 J	134 J	66.5	153	103 J	160 J	18.9 J	
Cadmium	0.2	1	0.497 J	0.602 UJ	0.55 UJ	0.099 J	0.05 J	0.59 UJ	0.79 UJ	0.59 UJ	
Chromium	36.69	10	31.4	11	26.7 J	11.5	16.2	9.8 J	11.2	2	
Lead	237.7	237.7	174	2.95 J	259 J	82.4	7.36	183 J	1070 J	3.5 J	
Mercury	1.305	0.1	0.719	0.012 U	0.401	0.374	0.013 U	0.619	3.3 J	0.012 UJ	
Selenium	NE	2	1.75 U	1.2 U	1.6 J	1.11 U	1.28 U	1.8 J	5 J	1.2 UJ	
Silver	0.229	0.229	R	R	1.1 UJ	R	R	0.22 J	4.5 J	R	
Aluminum	7960	7960	16400	4100	6370 J	4990	5780	3830 J	4270 J	686 J	
Antimony	NE	SB	10.5 UJ	7.3 UJ	1.4 J	6.68 UJ	7.67 UJ	18.5 J	9.5 UJ	7.1 UJ	
Beryllium	0.463	0.16	1.04 J	0.61 U	0.38 J	0.565 U	0.64 U	0.43 J	0.8 U	0.6 U	
Calcium	11563	11563	5620 J	713 J	2160 J	8260 J	10300 J	11700 J	8380 J	7510 J	
Cobalt	5.698	30	12.4	3.15 J	6.4 J	5.03 J	7.06	7.1 J	14.7 J	1.5 J	
Copper	35.84	25	46.1 J	8.2 J	81 J	25.7 J	10.4 J	45.7 J	110 J	6.3 J	
Iron	14369	2000	26200	5600	18200 J	8550	10700	14600 J	95400 J	1940 J	
Magnesium	3129	3129	7360	1640	2220 J	3110	5440	3720 J	1580	2390	
Manganese	358.5	358.5	947	50.7	281 J	214	305	120 J	1140 J	165 J	
Nickel	15.3	13	29.4 J	11.5	13.6 J	22.4	18.1 J	14.3 J	26.6 J	4.8 U	
Potassium	1193	1193	3450 J	976 J	1020 J	1310 J	2810 J	726 J	929 J	499 J	
Sodium	214.8	214.8	2530	222 J	87.6 J	200 J	369 J	945 J	86.5 J	89.2 J	
Thallium	NE	SB	1.75 U	1.2 U	1.1 UJ	1.11 U	1.28 U	1.2 UJ	2.4	1.2 UJ	
Vanadium	30.25	150	41.3	15.7	25.7 J	15.1	20.3	18.8 J	24.3 J	6 UJ	
Zinc	81.77	20	111	17 J	171 J	42.2	27.6	55 J	328 J	9.7 J	
<b>Cyanide (mg/Kg)</b>											
Cyanide, Total	0.705	NE	0.876 U	0.608 U	0.556 U	0.557 U	0.639 U	0.891	96 J	0.602 U	
Cyanide, Amenable	NE	NE	0.88 U	0.61 U	0.56 U	0.56 U	0.64 U	0.59 U	20.6 J	0.6 U	

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location: Depth Interval (ft bgs): Date Collected: Investigation Conducted By:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB04 49-51 3/21/2006 GEI	17SB05 2-4 4/4/2006 GEI	17SB05 5-7 4/26/2006 GEI	17SB05 25-27 4/24/2006 GEI	17SB05 27-29 4/24/2006 GEI	17SB05 35-37 4/26/2006 GEI	17SB05 37-39 4/26/2006 GEI	17SB05 49-51 4/24/2006 GEI
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.019 J	0.028 U	0.028 U	0.029 U	0.021 J	0.031 U	0.035 U	0.031 U
Toluene	0.0028	1.5	0.015 J	0.003 J	0.028 U	0.029 U	0.019 J	0.031 U	0.035 U	0.031 U
Ethylbenzene	0.000139	5.5	0.007 J	0.028 U	0.028 U	0.029 U	0.026 J	0.031 U	0.035 U	0.031 U
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	NR
Xylene, total	0.000472	1.2	0.013 J	0.005 J	0.055 U	0.058 U	0.149 J	0.062 U	0.07 U	0.061 U
Total BTEX	NE	NE	0.054	0.008	ND	ND	0.215	ND	ND	ND
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.15 U	0.14 UJ	0.14 U	0.094 J	0.29	0.15 U	0.17 U	0.15 UJ
Butanone,2-	0.00202	0.3	0.15 U	0.14 U	0.14 U	0.15 U	0.096 J	0.15 U	0.17 U	0.15 U
Carbon disulfide	0.00156	2.7	0.03 U	0.028 U	0.028 UJ	0.029 Uj	0.018 J	0.031 UJ	0.035 UJ	0.031 UJ
Chloroform	NE	0.3	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Dichloroethane,1,2	NE	0.1	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Dichloroethene, cis-1,2	0.000241	NE	0.03 U	0.028 U	0.028 U	0.029 U	0.043 UJ	0.031 U	0.035 U	0.031 UJ
Methylene chloride	0.00104	0.1	0.065 UJ	0.028 U	0.028 U	0.029 U	0.043 UJ	0.031 U	0.035 U	0.031 UJ
Styrene	NE	NE	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Trichloroethane,1,1,1	NE	0.8	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Trichloroethene	0.00021	0.7	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Methylcyclohexane	NE	NE	0.03 U	0.028 U	0.028 U	0.029 U	0.043 U	0.031 U	0.035 U	0.031 U
Isopropyl benzene	NE	NE	0.03 U	0.028 U	0.028 U	0.029 U	0.06	0.031 U	0.035 U	0.031 U
Cyclohexane	NE	NE	0.03 U	0.028 U	0.028 U	0.029 U	0.043 UJ	0.031 U	0.035 U	0.031 UJ
Total VOCs	NE	10	0.054	0.008	ND	0.094	0.679	ND	ND	ND
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	0.037	NA	NA	0.496	10.31	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	0.39 U	0.37 U	0.37 U	0.11 J	0.54 J	0.42 U	0.46 U	0.41 U
Acenaphthene	0.117	50	0.39 U	0.37 U	0.37 U	0.084 J	0.24 J	0.42 U	0.46 U	0.41 U
Acenaphthylene	0.259	41	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Anthracene	0.488	50	0.39 U	0.12 J	0.2 J	0.2 J	0.55 J	0.42 U	0.46 U	0.41 U
Benzo[g,h,i]perylene	0.565	50	0.39 U	0.8	0.64 J	0.39 UJ	0.17 J	0.42 UJ	0.46 U	0.41 U
Fluoranthene	3.416	50	0.39 U	1	2.7	0.38 J	1	0.42 U	0.46 U	0.41 U
Fluorene	0.267	50	0.39 U	0.37 U	0.37 U	0.17 J	0.64	0.42 U	0.46 U	0.41 U
Naphthalene	0.476	13	0.39 U	0.37 U	0.37 U	0.21 J	1	0.42 U	0.46 U	0.41 U
Phenanthrene	3.949	50	0.39 U	0.45	0.91	0.67	1.8	0.42 U	0.46 U	0.41 U
Pyrene	4.525	50	0.39 U	1.4	2.7	0.42	0.97	0.42 U	0.46 U	0.41 U
Total Noncarcinogenic PAHs	NE	NE	ND	3.77	7.15	2.244	6.91	ND	ND	ND
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.39 U	0.65	1.4 J	0.16 J	0.57 J	0.42 U	0.46 U	0.41 U
Benzo[a]pyrene	1.046	0.061	0.39 U	0.67	0.88 J	0.13 J	0.51 J	0.42 U	0.46 U	0.41 U
Benzo[b]fluoranthene	0.728	1.1	0.39 U	0.84	2.2	0.12 J	0.52 J	0.42 UJ	0.46 U	0.41 U
Benzo[k]fluoranthene	0.996	1.1	0.39 U	0.28 J	0.77 J	0.39 U	0.32 J	0.42 U	0.46 U	0.41 U
Chrysene	1.267	0.4	0.39 U	0.64	1.3 J	0.15 J	0.62	0.42 U	0.46 U	0.41 U
Dibenz[a,h]anthracene	0.162	0.014	0.39 U	0.2 J	1.8 U	0.39 UJ	0.58 U	0.42 UJ	0.46 U	0.41 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.39 U	0.71	0.53 J	0.39 UJ	0.12 J	0.42 UJ	0.46 U	0.41 U
Total Carcinogenic PAHs	NE	NE	ND	3.99	7.08	0.56	2.66	ND	ND	ND
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	ND	7.76	14.23	2.804	9.57	ND	ND	ND
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.39 U	0.37 U	1.8 U	0.39 U	0.11 J	0.42 U	0.46 U	0.41 U
Carbazole	0.131	NE	0.39 U	0.37 U	0.069 J	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Dibenzofuran	0.197	6.2	0.39 U	0.37 U	0.37 U	0.081 J	0.29 J	0.42 U	0.46 U	0.41 U
Dimethylphenol, 2,4	0.021	NE	0.39 U	0.37 U	0.37 U	0.39 U	0.58 UJ	0.42 U	0.46 U	0.41 U
Di-n-butyl phthalate	0.064	8.1	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Methylphenol, 4	0.08	0.9	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Methylphenol,2	0.021	0.1	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Nitroaniline,4	NE	NE	0.99 U	0.94 U	0.93 U	0.97 U	1.4 U	1.1 U	1.2 U	1 U
Phenol	0.042	0.03	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Benzaldehyde	NE	NE	R	0.37 UJ	R	R	0.58 UJ	R	0.46 UJ	0.41 UJ
Biphenyl,1,1	NE	NE	0.39 U	0.37 U	0.37 U	0.39 U	0.12 J	0.42 U	0.46 U	0.41 U
Acetophenone	NE	NE	0.39 U	0.37 U	0.37 U	0.39 U	0.58 U	0.42 U	0.46 U	0.41 U
Total SVOCs	NE	500	ND	7.76	14.299	2.885	10.09	ND	ND	ND
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	2.15	0.75	3.04	3.68	11.48	2.67	3.44	1.62

**Table 5-5**  
**East 17th Street Station Subsurface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB04	17SB05	17SB05	17SB05	17SB05	17SB05	17SB05	17SB05
Depth Interval (ft bgs):			49-51	2-4	5-7	25-27	27-29	35-37	37-39	49-51
Date Collected:			3/21/2006	4/4/2006	4/26/2006	4/24/2006	4/24/2006	4/26/2006	4/26/2006	4/24/2006
Investigation Conducted By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	1.2 U	4.79	3.64	NA	16.3 J	2.13	NA	2.1 J
Barium	124.7	300	13.2 J	889 J	411 J	NA	55.3 J	54.4 J	NA	39 J
Cadmium	0.2	1	0.6 UJ	0.376 J	0.655 J	NA	0.88 UJ	0.63 U	NA	0.61 UJ
Chromium	36.69	10	1.2 U	13.3	12	NA	27.2	14.9	NA	15.3
Lead	237.7	237.7	10 J	1200 J	318	NA	128	17.8	NA	8.3
Mercury	1.305	0.1	0.012 UJ	0.477 J	0.388 J	NA	1.2 J	0.044 J	NA	0.012 UJ
Selenium	NE	2	1.2 UJ	1.14 UJ	1.1 UJ	NA	3.2 J	1.27 UJ	NA	1.9 J
Silver	0.229	0.229	R	1.14 UJ	2.65 J	NA	1.8 UJ	3.7 J	NA	1.2 UJ
Aluminum	7960	7960	613 J	4750 J	3460 J	NA	14100 J	7660 J	NA	5000 J
Antimony	NE	SB	7.2 UJ	16.3 J	6.59 UJ	NA	16.3 J	7.61 UJ	NA	18.1 J
Beryllium	0.463	0.16	0.60 U	0.268 J	0.55 U	NA	0.88 U	0.63 U	NA	0.62 U
Calcium	11563	11563	6650 J	26600 J	14100 J	NA	3970 J	18300 J	NA	13200
Cobalt	5.698	30	6 U	5.5 J	4.1 J	NA	10.5 J	8.36 J	NA	9.1 J
Copper	35.84	25	6 J	38.2	35.8 J	NA	34.9 J	18.7 J	NA	13.1 J
Iron	14369	2000	1660 J	13300 J	8960 J	NA	28900 J	12800 J	NA	10800 J
Magnesium	3129	3129	2400	2920 J	1980 J	NA	6330 J	7710 J	NA	6390 J
Manganese	358.5	358.5	162 J	284 J	197	NA	991	704	NA	292
Nickel	15.3	13	4.8 U	16.9 J	15.1 J	NA	24.4 J	21.4 J	NA	13.7 J
Potassium	1193	1193	414 J	1400 J	1120 J	NA	4110 J	3530 J	NA	2930 J
Sodium	214.8	214.8	5980 U	527 J	397 J	NA	1880 J	774 J	NA	1480 J
Thallium	NE	SB	1.2 UJ	1.14 U	1.1 UJ	NA	5.3 J	1.27 UJ	NA	1.2 U
Vanadium	30.25	150	6.0 UJ	24.7	21.5	NA	50	20.2	NA	15.1
Zinc	81.77	20	8.7 J	376 J	256 J	NA	89.5 J	45 J	NA	31.2 J
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	0.604 U	0.568 U	0.56 U	NA	2.17	0.64 U	NA	0.62 U
Cyanide, Amenable	NE	NE	0.6 U	0.57 U	0.56 U	NA	0.96	0.64 U	NA	0.62 U

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

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East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB06	17SB06 DUP	17SB06	17SB06	17SB06	17SB06	17SB06	17SB06	17WVSB02
Depth Interval (ft bgs):			2-4	2-4	27-29	29-31	35-36.5	36.5-37	50-51	10-13	
Date Collected:			5/8/2006	5/8/2006	5/17/2006	5/17/2006	5/17/2006	5/17/2006	5/18/2006	5/12/2008	
Investigation Conducted By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	AECOM	
<b>BTEX (mg/kg)</b>											
Benzene	0.00223	0.06	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0045 U	
Toluene	0.0028	1.5	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0055 U	
Ethylbenzene	0.000139	5.5	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0050 U	
m/p-Xylenes	NE	NE	NR	NR	NR	NR	NR	NR	NR	0.012 U	
o-Xylene	NE	NE	NR	NR	NR	NR	NR	NR	NR	0.0048 U	
Xylene, total	0.000472	1.2	0.057 U	0.0087 J	0.059 U	0.06 U	0.06 U	0.066 U	0.057 U	ND	
Total BTEX	NE	NE	ND	0.0087	ND	ND	ND	ND	ND	ND	
<b>Other VOCs (mg/kg)</b>											
Acetone	0.141	0.2	0.14 U	0.14 U	0.15 U	0.15 U	0.15 U	0.048 J	0.14 U	0.110 U	
Butanone,2-	0.00202	0.3	0.14 U	0.14 U	0.15 U	0.15 U	0.15 U	0.16 U	0.14 U	0.032 U	
Carbon disulfide	0.00156	2.7	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0068 U	
Chloroform	NE	0.3	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0056 U	
Dichloroethane,1,2	NE	0.1	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0052 U	
Dichloroethene, cis-1,2	0.000241	NE	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0081 U	
Methylene chloride	0.00104	0.1	0.2 UJ	0.049 UJ	0.068 UJ	0.057 U	0.074 UJ	0.057 U	0.028 UJ	0.015 U	
Styrene	NE	NE	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0039 U	
Trichloroethane,1,1,1	NE	0.8	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0060 U	
Trichloroethene	0.00021	0.7	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0046 U	
Methylcyclohexane	NE	NE	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0052 U	
Isopropyl benzene	NE	NE	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0052 U	
Cyclohexane	NE	NE	0.029 U	0.028 U	0.029 U	0.03 U	0.03 U	0.033 U	0.028 U	0.0064 U	
Total VOCs	NE	10	ND	0.0087	ND	ND	ND	0.048	ND	ND	
<b>VOC TICs (mg/kg)</b>											
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	
<b>Noncarcinogenic PAHs (mg/kg)</b>											
Methylnaphthalene,2	0.106	36.4	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.170 J	
Acenaphthene	0.117	50	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.0088 U	
Acenaphthylene	0.259	41	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.070 J	
Anthracene	0.488	50	0.61 J	0.33 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.082 J	
Benzo[g,h,i]perylene	0.565	50	1.3 J	0.96 J	0.39 U	0.39 UJ	0.39 U	0.43 UJ	0.38 U	0.029 U	
Fluoranthene	3.416	50	2.9	2.1	0.098 J	0.39 U	0.39 U	0.43 U	0.38 U	0.210 J	
Fluorene	0.267	50	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.093 J	
Naphthalene	0.476	13	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.300 J	
Phenanthrene	3.949	50	2.3	1.3 J	0.094 J	0.39 U	0.39 U	0.43 U	0.38 U	0.260 J	
Pyrene	4.525	50	4.7	3.4	0.087 J	0.39 U	0.39 U	0.43 U	0.38 U	0.150 J	
Total Noncarcinogenic PAHs	NE	NE	11.81	8.09	0.279	ND	ND	ND	ND	1.335	
<b>Carcinogenic PAHs (mg/kg)</b>											
Benz[a]anthracene	2.599	0.224	1.8 J	1.3 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.094 J	
Benzo[a]pyrene	1.046	0.061	2.2 J	1.1 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.060 J	
Benzo[b]fluoranthene	0.728	1.1	2.7 J	1.9 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.073 J	
Benzo[k]fluoranthene	0.996	1.1	0.93 J	0.6 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.051 J	
Chrysene	1.267	0.4	1.8 J	1.4 J	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.089 J	
Dibenz[a,h]anthracene	0.162	0.014	1.9 UJ	1.9 UJ	0.39 U	0.39 UJ	0.39 U	0.43 UJ	0.38 U	0.030 U	
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.49 J	0.37 J	0.39 U	R	0.39 U	R	0.38 U	0.010 U	
Total Carcinogenic PAHs	NE	NE	9.92	6.67	ND	ND	ND	ND	ND	0.367	
<b>Total PAHs (mg/kg)</b>											
Total PAHs	NE	NE	21.73	14.76	0.279	ND	ND	ND	ND	1.702	
<b>Other SVOCs (mg/kg)</b>											
Bis(2-ethylhexyl)phthalate	0.823	50	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.016 U	
Carbazole	0.131	NE	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.031 U	
Dibenzofuran	0.197	6.2	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.064 J	
Dimethylphenol, 2,4	0.021	NE	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.012 U	
Di-n-butyl phthalate	0.064	8.1	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.019 U	
Methylphenol, 4	0.08	0.9	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.012 U	
Methylphenol,2	0.021	0.1	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.011 U	
Nitroaniline,4	NE	NE	4.8 U	4.7 U	0.98 U	0.98 U	0.98 U	1.1 U	0.96 U	0.032 U	
Phenol	0.042	0.03	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.011 U	
Benzaldehyde	NE	NE	R	R	0.39 UJ	0.39 UJ	0.39 UJ	0.43 UJ	0.38 UJ	NR	
Biphenyl,1,1	NE	NE	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.012 U	
Acetophenone	NE	NE	1.9 U	1.9 U	0.39 U	0.39 U	0.39 U	0.43 U	0.38 U	0.012 U	
Total SVOCs	NE	500	21.73	14.76	0.279	ND	ND	ND	ND	1.766	
<b>SVOC TICs (mg/kg)</b>											
Total SVOC TICs	NE	NE	6.16	3.2	2.29	2.25	2.36	2.73	2.28	NA	

**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17SB06	17SB06 DUP	17SB06	17SB06	17SB06	17SB06	17SB06	17WVSB02
Depth Interval (ft bgs):			2-4	2-4	27-29	29-31	35-36.5	36.5-37	50-51	10-13
Date Collected:			5/8/2006	5/8/2006	5/17/2006	5/17/2006	5/17/2006	5/17/2006	5/18/2006	5/12/2008
Investigation Conducted By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	AECOM
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	6.21 J	5.78 J	2.07	NA	0.506 J	NA	1.16 U	7.36
Barium	124.7	300	314 J	192 J	20.4 J	NA	12.1 J	NA	39.5 J	255
Cadmium	0.2	1	0.565 UJ	0.568 UJ	0.587 UJ	NA	0.584 UJ	NA	0.579 UJ	1.31
Chromium	36.69	10	13.3 J	10.8 J	12.1 J	NA	6.2 J	NA	7.45 J	17.9
Lead	237.7	237.7	287	245	5.99 J	NA	5.45	NA	1.87	224
Mercury	1.305	0.1	1.7	1.3	0.016 J	NA	0.01 J	NA	0.012 J	0.009 U
Selenium	NE	2	1.13 U	1.14 U	1.17 U	NA	1.17 U	NA	1.16 U	0.674 U
Silver	0.229	0.229	3.02 J	2.4 J	1.17 UJ	NA	1.17 UJ	NA	1.16 UJ	0.47
Aluminum	7960	7960	4350 J	4140 J	2760 J	NA	2050 J	NA	3330 J	9090
Antimony	NE	SB	17 J	6.82 UJ	7.1 UJ	NA	7.01 UJ	NA	6.9 UJ	1.030 J
Beryllium	0.463	0.16	0.233 J	0.252 J	0.59 U	NA	0.6 U	NA	0.58 U	0.162 J
Calcium	11563	11563	17000 J	17700 J	38500 J	NA	1130 J	NA	11600 J	18000
Cobalt	5.698	30	9.92	5.11 J	2.03 J	NA	1.52 J	NA	3.97 J	7.11
Copper	35.84	25	49	43.9	4.6 J	NA	4.83 J	NA	10.1	305
Iron	14369	2000	13900 J	11500 J	5640 J	NA	4110 J	NA	5860 J	15700
Magnesium	3129	3129	1930 J	1830 J	1750 J	NA	1150 J	NA	5860 J	5080
Manganese	358.5	358.5	251 J	230 J	82.1 J	NA	40 J	NA	162 J	336
Nickel	15.3	13	20.7 J	14.1 J	6.08 J	NA	5.91 J	NA	9.29 J	18.8
Potassium	1193	1193	1160 J	1050 J	938 J	NA	378 J	NA	1820 J	1130
Sodium	214.8	214.8	383 J	485 J	841 J	NA	596 UJ	NA	953 J	556
Thallium	NE	SB	1.13 U	1.14 U	1.17 U	NA	1.17 U	NA	1.16 U	0.814 U
Vanadium	30.25	150	17.8	20	9.71 J	NA	7.7	NA	11.8	27.8
Zinc	81.77	20	237 J	159 J	13.8 J	NA	10.4 J	NA	18.3 J	164
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	1.33	0.93	0.59 U	NA	0.6 U	NA	0.58 U	0.617 U
Cyanide, Amenable	NE	NE	0.58 U	0.57 UJ	0.59 U	NA	0.6 U	NA	0.58 U	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.



**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17WVSB02	17WVSB02	ST17SB07	ST17SB07	ST17SB07	ST17SB08	ST17SB08	ST17SB08
Depth Interval (ft bgs):			20-23.5	28-30	26-28	31-32	32-34	14-18	22-26	32-36
Date Collected:			5/12/2008	5/15/2008	5/15/2008	5/15/2008	5/15/2008	5/28/2008	5/28/2008	5/28/2008
Investigation Conducted By:			AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
<b>BTEX (mg/kg)</b>										
Benzene	0.00223	0.06	0.021 J	0.0044 U	0.26	0.0045 U	0.0044 U	0.0056 U	0.0046 U	0.0043 U
Toluene	0.0028	1.5	0.076	0.0054 U	0.0077 U	0.0055 U	0.0054 U	0.0068 U	0.0056 U	0.0053 U
Ethylbenzene	0.000139	5.5	0.240 J	0.0049 U	0.045	0.0050 U	0.0049 U	0.0062 U	0.0051 U	0.0048 U
m/p-Xylenes	NE	NE	0.580 J	0.011 U	0.091	0.012 U	0.011 U	0.014 U	0.012 U	0.011 U
o-Xylene	NE	NE	0.420 J	0.0046 U	0.097	0.0047 U	0.0046 U	0.0059 U	0.0048 U	0.0046 U
Xylene, total	0.000472	1.2	1	ND	0.188	ND	ND	ND	ND	ND
Total BTEX	NE	NE	1.337	ND	0.493	ND	ND	ND	ND	ND
<b>Other VOCs (mg/kg)</b>										
Acetone	0.141	0.2	0.51	0.100 U	0.150 U	0.110 U	0.100 U	0.130 U	0.110 U	0.100 U
Butanone,2-	0.00202	0.3	0.140 J	0.031 U	0.044 U	0.031 U	0.031 U	0.039 U	0.032 U	0.030 U
Carbon disulfide	0.00156	2.7	0.0091 U	0.0066 U	0.0095 U	0.0067 U	0.0066 U	0.0084 U	0.0069 U	0.0065 U
Chloroform	NE	0.3	0.0075 U	0.0054 U	0.0078 U	0.0055 U	0.0054 U	0.0069 U	0.0057 U	0.0054 U
Dichloroethane,1,2	NE	0.1	0.0069 U	0.0050 U	0.0072 U	0.0051 U	0.0050 U	0.0063 U	0.0052 U	0.0050 U
Dichloroethene, cis-1,2	0.000241	NE	0.011 U	0.0079 U	0.011 U	0.0080 U	0.0079 U	0.010 U	0.0082 U	0.0078 U
Methylene chloride	0.00104	0.1	0.020 U	0.015 U	0.110 J	0.031 U	0.031 U	0.019 U	0.015 U	0.015 U
Styrene	NE	NE	0.0052 U	0.0038 U	0.0054 U	0.0039 U	0.0038 U	0.0048 U	0.0039 U	0.0037 U
Trichloroethane,1,1,1	NE	0.8	0.0080 U	0.0058 U	0.0083 U	0.0059 U	0.0058 U	0.0073 U	0.0060 U	0.0057 U
Trichloroethene	0.00021	0.7	0.0061 U	0.0045 U	0.0064 U	0.0045 U	0.0045 U	0.0056 U	0.0046 U	0.0044 U
Methylcyclohexane	NE	NE	0.0070 U	0.0051 U	0.0073 U	0.0052 U	0.0051 U	0.0064 U	0.0053 U	0.0050 U
Isopropyl benzene	NE	NE	0.400 J	0.0050 U	0.033 J	0.0051 U	0.0050 U	0.0063 U	0.0052 U	0.0050 U
Cyclohexane	NE	NE	0.0086 U	0.0062 U	0.0089 U	0.0063 U	0.0062 U	0.0079 U	0.0065 U	0.0062 U
Total VOCs	NE	10	2.387	ND	0.636	ND	ND	ND	ND	ND
<b>VOC TICs (mg/kg)</b>										
Total VOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>										
Methylnaphthalene,2	0.106	36.4	2.4	0.011 U	0.580 J	0.012 U	0.011 U	0.015 U	0.012 U	0.011 U
Acenaphthene	0.117	50	0.73	0.0087 U	0.200 J	0.0092 U	0.0088 U	0.011 U	0.0093 U	0.0087 U
Acenaphthylene	0.259	41	0.083 J	0.0059 U	0.075 J	0.0062 U	0.0060 U	0.0075 U	0.0063 U	0.0059 U
Anthracene	0.488	50	0.440 J	0.065 J	0.390 J	0.014 U	0.044 J	0.017 U	0.014 U	0.014 U
Benzo[g,h,i]perylene	0.565	50	0.040 U	0.029 U	0.230 J	0.031 U	0.030 U	0.037 U	0.031 U	0.029 U
Fluoranthene	3.416	50	0.65	0.250 J	0.95	0.010 U	0.170 J	0.180 J	0.095 J	0.0098 U
Fluorene	0.267	50	0.300 J	0.011 U	0.450 J	0.011 U	0.011 U	0.014 U	0.012 U	0.011 U
Naphthalene	0.476	13	2.9	0.0097 U	1.7	0.010 U	0.0098 U	0.071 J	0.010 U	0.0097 U
Phenanthrene	3.949	50	2.9	0.220 J	1.5	0.050 J	0.140 J	0.230 J	0.130 J	0.013 U
Pyrene	4.525	50	0.57	0.190 J	0.84	0.0092 U	0.140 J	0.180 J	0.082 J	0.0088 U
Total Noncarcinogenic PAHs	NE	NE	10.973	0.725	6.915	0.05	0.494	0.661	0.307	ND
<b>Carcinogenic PAHs (mg/kg)</b>										
Benz[a]anthracene	2.599	0.224	0.220 J	0.100 J	0.410 J	0.010 U	0.082 J	0.093 J	0.010 U	0.0097 U
Benzo[a]pyrene	1.046	0.061	0.110 J	0.087 J	0.440 J	0.012 U	0.065 J	0.079 J	0.013 U	0.012 U
Benzo[b]fluoranthene	0.728	1.1	0.140 J	0.110 J	0.470 J	0.030 U	0.087 J	0.096 J	0.031 U	0.029 U
Benzo[k]fluoranthene	0.996	1.1	0.025 U	0.047 J	0.150 J	0.019 U	0.019 U	0.024 U	0.020 U	0.018 U
Chrysene	1.267	0.4	0.240 J	0.088 J	0.380 J	0.0079 U	0.063 J	0.083 J	0.0080 U	0.0075 U
Dibenz[a,h]anthracene	0.162	0.014	0.040 U	0.030 U	0.065 J	0.031 U	0.030 U	0.038 U	0.031 U	0.030 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.014 U	0.010 U	0.170 J	0.011 U	0.010 U	0.013 U	0.011 U	0.010 U
Total Carcinogenic PAHs	NE	NE	0.71	0.432	2.085	ND	0.297	0.351	ND	ND
<b>Total PAHs (mg/kg)</b>										
Total PAHs	NE	NE	11.683	1.157	9.000	0.050	0.791	1.012	0.307	ND
<b>Other SVOCs (mg/kg)</b>										
Bis(2-ethylhexyl)phthalate	0.823	50	0.021 U	0.015 U	0.022 U	0.016 U	0.072 J	0.020 U	0.016 U	0.015 U
Carbazole	0.131	NE	0.042 U	0.031 U	0.180 J	0.032 U	0.031 U	0.039 U	0.033 U	0.031 U
Dibenzofuran	0.197	6.2	0.017 U	0.012 U	0.240 J	0.013 U	0.013 U	0.016 U	0.013 U	0.012 U
Dimethylphenol, 2,4	0.021	NE	0.016 U	0.012 U	0.017 U	0.013 U	0.012 U	0.015 U	0.013 U	0.012 U
Di-n-butyl phthalate	0.064	8.1	0.026 U	0.019 U	0.027 U	0.020 U	0.019 U	0.024 U	0.020 U	0.019 U
Methylphenol, 4	0.08	0.9	0.017 U	0.012 U	0.150 J	0.013 U	0.012 U	0.014 U	0.013 U	0.012 U
Methylphenol,2	0.021	0.1	0.015 U	0.011 U	0.015 U	0.011 U	0.011 U	0.014 U	0.011 U	0.011 U
Nitroaniline,4	NE	NE	0.043 U	0.032 U	0.046 U	0.033 U	0.032 U	0.041 U	0.034 U	0.032 U
Phenol	0.042	0.03	0.015 U	0.011 U	0.016 U	0.012 U	0.011 U	0.014 U	0.012 U	0.011 U
Benzaldehyde	NE	NE	NR	NR	NR	NR	NR	0.017 U	0.014 U	0.013 U
Biphenyl,1,1	NE	NE	0.081 J	0.012 U	0.098 J	0.013 U	0.012 U	0.015 U	0.013 U	0.012 U
Acetophenone	NE	NE	0.016 U	0.012 U	0.017 U	0.013 U	0.012 U	0.015 U	0.013 U	0.012 U
Total SVOCs	NE	500	11.764	1.157	9.668	0.05	0.863	1.422	0.307	ND
<b>SVOC TICs (mg/kg)</b>										
Total SVOC TICs	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Table 5-5  
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Stuyvesant Town Remedial Investigation Report  
New York, NY**

Borehole Location:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	17WVSB02	17WVSB02	ST17SB07	ST17SB07	ST17SB07	ST17SB08	ST17SB08	ST17SB08
Depth Interval (ft bgs):			20-23.5	28-30	26-28	31-32	32-34	14-18	22-26	32-36
Date Collected:			5/12/2008	5/15/2008	5/15/2008	5/15/2008	5/15/2008	5/28/2008	5/28/2008	5/28/2008
Investigation Conducted By:			AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
<b>Metals (mg/kg)</b>										
Arsenic	13.63	7.5	8.44	0.778 J	14.9	0.154 U	0.153 J	18.2	4.25	0.929
Barium	124.7	300	70.8	10.7	127	13.2	18.5	406	76.5	23.4
Cadmium	0.2	1	2.2	0.518	1.85	0.294	0.272	1.54	0.6	0.215 J
Chromium	36.69	10	28.4	7.98	29.7	7.14	8.81	14.7	11	11.4
Lead	237.7	237.7	219	5.65	349	6.73	5.21	1000 J	258 J	6.200 J
Mercury	1.305	0.1	3.5	0.010 J	1.6	0.012 J	0.03	0.873	0.493	0.013
Selenium	NE	2	0.907 U	0.655 U	0.962 U	0.701 U	0.676 U	0.850 U	0.713 U	0.666 U
Silver	0.229	0.229	1.25	0.168 U	0.246 U	0.179 U	0.173 U	0.218 U	0.183 U	0.171 U
Aluminum	7960	7960	15700	4790	15200	2620	2760	5220	5820	3370
Antimony	NE	SB	0.641 U	0.463 U	1.370 J	0.496 U	0.478 U	3.77	0.504 U	0.471 U
Beryllium	0.463	0.16	0.033 U	0.024 U	0.053 J	0.032 J	0.054 J	0.031 U	0.026 U	0.024 U
Calcium	11563	11563	4040	2420	6390	1800	450	12000	5780	793
Cobalt	5.698	30	11.3	2.91	12	2.12	2.52	7.17	4.77	2.77
Copper	35.84	25	44.7	7.89	81	11.1	5.86	99.2	22.6	8.97
Iron	14369	2000	27700	8620	28000	4570	4850	23100	11600	7350
Magnesium	3129	3129	6840	1840	6770	1060	1080	1290	2810	1690
Manganese	358.5	358.5	400	88.8	695	36.5	30.8	138	161	50.7
Nickel	15.3	13	29.7	10.1	31.3	7.8	8.95	22.2	13.9	14
Potassium	1193	1193	3150	413	3220	379	405	810 J	694 J	606 J
Sodium	214.8	214.8	1380	311	1940	304	193 J-	865	663	131 J
Thallium	NE	SB	1.090 U	0.790 U	1.160 U	0.846 U	0.816 U	1.030 U	0.860 U	0.804 U
Vanadium	30.25	150	39.2	7.06	37.2	8.89	11.1	20.1	12.6	11.7
Zinc	81.77	20	80.9	23.6	134	13	12.5	147	56.8	18
<b>Cyanide (mg/Kg)</b>										
Cyanide, Total	0.705	NE	7.41	0.607 U	3.49	0.641 U	0.618 U	8.89	0.652 U	0.609 U
Cyanide, Amenable	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).

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**Table 5-5  
East 17th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	Summary Statistics											
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (mg/kg)</b>												
Benzene	66	35	31	10	0	210	17SB04 27 - 29 3/21/06 GEI	0.0006	17GH006 5 - 7 2/19/04 H&A	6.353108571	0.00025	0.035
Toluene	66	27	39	3	0	320	17SB04 27 - 29 3/21/06 GEI	0.0016	17GH004 9 - 11 2/27/04 H&A	12.00343704	0.00022	0.035
Ethylbenzene	66	21	45	4	0	210	17SB04 27 - 29 3/21/06 GEI	0.0006	17GH005 9 - 11 2/12/04 H&A	10.73027619	0.00021	0.045
m/p-Xylenes	9	2	7	0	0	0.58	17WVSB02-20-23.5	0.091	ST17SB07-26-28	0.3355	0.011	0.014
o-Xylene	9	2	7	0	0	0.42	17WVSB02-20-23.5	0.097	ST17SB07-26-28	0.2585	0.0046	0.0059
Xylene, total	66	26	40	5	0	390	17SB04 27 - 29 3/21/06 GEI	0.0016	17GH006 13 - 15 2/20/04 H&A	15.80533462	-	0.07
Total BTEX	66	39	27	0	0	1130	17SB04 27 - 29 3/21/06 GEI	0.0006	17CY006 19 - 21 3/2/04 H&A	30.32631026	-	-
<b>Other VOCs (mg/kg)</b>												
Acetone	65	31	34	4	0	2.3	17GH005 27 - 27.8 2/12/04 H&A	0.01	17CY006 19 - 21 3/2/04 H&A	0.155225806	0.0028	5
Butanone,2-	58	13	45	1	0	0.2	17SB01 23.5 - 25 3/22/06 GEI	0.0052	17GH001 13 - 15 2/10/04 H&A	0.043569231	0.0011	5
Carbon disulfide	66	29	37	0	0	0.083	17SB04 27 - 29 3/21/06 GEI	0.0006	17CY003 15 - 17 2/26/04 H&A	0.011306897	0.00032	0.75
Chloroform	66	1	65	0	0	0.001	17GH005 9 - 11 2/12/04 H&A	0.001	17GH005 9 - 11 2/12/04 H&A	0.001	0.00024	0.99
Dichloroethane,1,2	66	1	65	0	0	0.0055	17CY006 9 - 11 3/2/04 H&A	0.0055	17CY006 9 - 11 3/2/04 H&A	0.0055	0.00017	0.99
Dichloroethane, cis-1,2	66	2	64	0	0	0.0047	17SB01 31 - 33 3/22/06 GEI	0.0012	17GH002 29 - 31 2/24/04 H&A	0.00295	0.00031	0.99
Methylene chloride	66	3	63	1	0	0.11	ST17SB07-26-28	0.006	17CY007 28 - 30 2/16/04 H&A	0.045	0.00026	0.99
Styrene	66	4	62	0	0	14	17SB04 27 - 29 3/21/06 GEI	0.001	17GH005 19 - 21 2/12/04 H&A	3.5865	0.00012	0.75
Trichloroethane,1,1,1	66	1	65	0	0	0.26	17SB04 27 - 29 3/21/06 GEI	0.26	17SB04 27 - 29 3/21/06 GEI	0.26	0.00029	0.75
Trichloroethene	66	3	63	0	0	0.0041	17CY003 9 - 11 2/26/04 H&A	0.0011	17CY006 9 - 11 3/2/04 H&A	0.002166667	0.00027	0.99
Methylcyclohexane	35	1	34	0	0	1.7	17SB04 27 - 29 3/21/06 GEI	1.7	17SB04 27 - 29 3/21/06 GEI	1.7	0.005	0.75
Isopropyl benzene	35	6	29	0	0	1.8	17SB04 27 - 29 3/21/06 GEI	0.013	17SB01 23.5 - 25 3/22/06 GEI	0.395	0.005	0.75
Cyclohexane	35	1	34	0	0	0.74	17SB04 27 - 29 3/21/06 GEI	0.74	17SB04 27 - 29 3/21/06 GEI	0.74	0.0062	0.75
Total VOCs	59	46	13	2	0	1148.583	17SB04 27 - 29 3/21/06 GEI	0.0015	17GH004 19 - 20 3/1/04 H&A	26.26091957	-	-
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	32	32	0	0	0	301.5	17CY006 25 - 25.5 3/2/04 H&A	0.0068	17CY006 9 - 11 3/2/04 H&A	14.9243875	-	-
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2	74	40	34	4	0	46	17GH005 27 - 27.8 2/12/04 H&A	0.0092	17GH006 5 - 7 2/19/04 H&A	2.84398	0.011	1.9
Acenaphthene	74	45	29	2	0	37	17GH005 27 - 27.8 2/12/04 H&A	0.0094	17CY004 15 - 17 2/13/04 H&A	1.936288889	0.0033	1.9
Acenaphthylene	74	41	33	0	0	20	17GH005 27 - 27.8 2/12/04 H&A	0.015	17GH006 13 - 15 2/20/04 H&A	1.3902439	0.0032	1.9
Anthracene	74	54	20	1	0	61	17GH005 27 - 27.8 2/12/04 H&A	0.013	17GH002 15 - 17 2/24/04 H&A	2.738055556	0.003	0.46
Benzo[a,h]perylene	74	47	27	1	0	56	17GH005 27 - 27.8 2/12/04 H&A	0.02	17GH004 9 - 11 2/27/04 H&A	2.873404255	0.0042	0.58
Fluoranthene	74	58	16	2	0	320	17GH005 27 - 27.8 2/12/04 H&A	0.025	17GH004 9 - 11 2/27/04 H&A	12.30863793	0.0013	0.46
Fluorene	74	42	32	3	0	76	17GH005 27 - 27.8 2/12/04 H&A	0.0086	17CY007 14 - 16 2/16/04 H&A	3.774895238	0.0025	1.9
Naphthalene	74	45	29	6	0	330	17GH005 27 - 27.8 2/12/04 H&A	0.014	17CY003 21 - 23 2/26/04 H&A	14.0002222	0.0032	1.9
Phenanthrene	74	59	15	5	0	440	17GH005 27 - 27.8 2/12/04 H&A	0.019	17GH004 9 - 11 2/27/04 H&A	15.49994915	0.0037	0.46
Pyrene	74	58	16	1	0	290	17GH005 27 - 27.8 2/12/04 H&A	0.033	17GH004 9 - 11 2/27/04 H&A	11.06201724	0.0028	0.46
Total Noncarcinogenic PAHs	65	51	14	0	0	1676	17GH005 27 - 27.8 2/12/04 H&A	0.097	17GH004 9 - 11 2/27/04 H&A	70.15429216	-	-
<b>Carcinogenic PAHs (mg/kg)</b>												
Benz[a]anthracene	74	55	19	37	0	81	17GH005 27 - 27.8 2/12/04 H&A	0.016	17GH004 9 - 11 2/27/04 H&A	3.893581818	0.0097	0.58
Benzo[a]pyrene	74	55	19	51	0	84	17GH005 27 - 27.8 2/12/04 H&A	0.024	17GH004 9 - 11 2/27/04 H&A	3.890381818	0.003	0.58
Benzo[b]fluoranthene	74	55	19	19	0	64	17GH005 27 - 27.8 2/12/04 H&A	0.018	17GH004 9 - 11 2/27/04 H&A	3.324781818	0.0031	0.58
Benzo[k]fluoranthene	73	51	22	16	0	91	17GH005 27 - 27.8 2/12/04 H&A	0.022	17GH004 9 - 11 2/27/04 H&A	3.856843137	0.0042	0.58
Chrysene	74	55	19	31	0	100	17GH005 27 - 27.8 2/12/04 H&A	0.021	17GH004 9 - 11 2/27/04 H&A	4.448272727	0.005	0.58
Dibenzo[a,h]anthracene	74	25	49	25	0	4.3	17CY002 9 - 11 2/25/04 H&A	0.019	17CY004 9 - 11 2/13/04 H&A	0.568	0.0025	1.9
Indeno[1,2,3-cd]pyrene	72	49	23	7	0	52	17GH005 27 - 27.8 2/12/04 H&A	0.015	17GH004 9 - 11 2/27/04 H&A	2.685530612	0.0025	0.46
Total Carcinogenic PAHs	74	56	18	0	0	472	17GH005 27 - 27.8 2/12/04 H&A	0.077299	17WVSB02-10-13	21.30728434	-	-
<b>Total PAHs (mg/kg)</b>												
Total PAHs	74	59	15	0	0	2148	17GH005 27 - 27.8 2/12/04 H&A	0.05	ST17SB07-31-32	81.22889661	-	-
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	74	23	51	0	0	0.52	17CY007 2 - 4 1/30/04 H&A	0.072	ST17SB07-32-34	0.192913043	0.015	2.6
Carbazole	74	39	35	1	0	39	17GH005 27 - 27.8 2/12/04 H&A	0.014	17CY003 21 - 23 2/26/04 H&A	2.254179487	0.0028	1.9
Dibenzofuran	74	41	33	5	0	53	17GH005 27 - 27.8 2/12/04 H&A	0.01	17CY007 0 - 2 1/29/04 H&A	2.841121951	0.012	1.9
Dimethylphenol, 2,4	74	10	64	0	0	2.2	17GH004 27 - 27.8 2/12/04 H&A	0.0083	17GH005 9 - 11 2/12/04 H&A	0.56553	0.012	1.9
Di-n-butyl phthalate	74	2	72	0	0	0.36	17CY003 2 - 4 2/5/04 H&A	0.098	17CY007 2 - 4 1/30/04 H&A	0.229	0.01	1.9
Methylphenol, 4	74	22	52	5	0	8.4	17GH004 27 - 27.5 3/1/04 H&A	0.0079	17GH003 7 - 9 2/27/04 H&A	0.917677273	0.012	1.9
Methylphenol,2	74	7	67	5	0	3.8	17GH004 27 - 27.5 3/1/04 H&A	0.0092	17GH005 19 - 21 2/12/04 H&A	1.086971429	0.011	1.9
Nitroaniline,4	74	2	72	0	0	0.21	17CY007 2 - 4 1/30/04 H&A	0.012	17CY001 0 - 2 2/4/04 H&A	0.111	0.018	4.8
Phenol	74	5	69	5	0	9.1	17GH004 27 - 27.5 3/1/04 H&A	0.53	17SB04 27 - 29 3/21/06 GEI	4.042	0.011	1.9
Benzaldehyde	20	1	19	0	0	0.15	17SB01 23.5 - 25 3/22/06 GEI	0.15	17SB01 23.5 - 25 3/22/06 GEI	0.15	0.013	0.58
Biphenyl,1,1	35	4	31	0	0	4.7	17SB04 27 - 29 3/21/06 GEI	0.081	17WVSB02-20-23.5	1.24975	0.012	1.9
Acetophenone	35	1	34	0	0	0.26	17SB04 27 - 29 3/21/06 GEI	0.26	17SB04 27 - 29 3/21/06 GEI	0.26	0.012	1.9
Total SVOCs	74	59	15	2	0	2252.7	17GH005 27 - 27.8 2/12/04 H&A	0.05	ST17SB07-31-32	85.8651339	-	-
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	58	58	0	0	0	342	17GH005 27 - 27.8 2/12/04 H&A	0.15	17SB02 30 - 31 3/24/06 GEI	21.32122414	-	-
<b>Metals (mg/kg)</b>												
Arsenic	50	44	6	13	0	21.5	17CY008 2 - 4 1/29/04 H&A	0.153	ST17SB07-32-34	6.701272727	0.154	1.2
Barium	50	50	0	9	0	889	17SB05 2 - 4 4/4/06 GEI	10.7	17WVSB02-28-30	157.064	-	-
Cadmium	50	24	26	10	0	2.2	17WVSB02-20-23.5	0.05	17SB03 51 - 52 3/23/06 GEI	0.603166667	0.088	0.89
Chromium	50	49	1	35	0	31.4	17SB02 25 - 27 3/24/06 GEI	2	17SB04 49 - 51 3/21/06 GEI	15.33632653	1.2	1.2
Lead	50	50	0	18	0	1590	17CY008 9 - 11 2/9/04 H&A	1.87	17SB06 50 - 51 5/18/06 GEI	295.8882	-	-
Mercury	50	44	6	35	0	3.9	17CY008 0 - 2 1/29/04 H&A	0.01	17WVSB02-28-30	0.840159091	0.009	0.013
Selenium	50	5	45	2	0	5	17SB04 27 - 29 3/21/06 GEI	1.6	17SB03 2 - 4 3/15/06 GEI	2.7	0.655	4.6
Silver	43	18	25	11	0	4.5	17SB04 27 - 29 3/21/06 GEI	0.11	17SB02 2 - 4 3/13/06 GEI	1.198888889	0.15	1.8
Aluminum	50	50	0	10	0	16400	17SB02 25 - 27 3/24/06 GEI	613	DUP 17SB04 49 - 51 3/21/06 GEI	6048.34	-	-
Antimony	50	11	39	0	0	18.5	17SB04 27 - 29 3/21/06 GEI	0.9	17CY003 2 - 4 2/5/04 H&A	8.697272727	0.463	10.6
Beryllium	50	30	20	26	0	1.04	17SB02 25 - 27 3/24/06 GEI	0.032	ST17SB07-31-32	0.3378	0.024	0.9
Calcium	50	50	0	16	0	38500	17SB06 27 - 29 5/17/06 GEI	450	ST17SB07-32-34	9733.04	-	-
Cobalt	50	49	1	4	0	14.7	17SB04 27 - 29 3/21/06 GEI	1.5	17SB04 49 - 51 3/21/06 GEI	6.122857143	6	6
Copper	50	50	0	35	0	305	17WVSB02-10-13	4.6	17SB06 27 - 29 5/17/06 GEI	43.447	-	-
Iron	50	50	0	43	0	95400	17SB04 27 - 29 3/21/06 GEI	1660	DUP 17SB04 49 - 51 3/21/06 GEI	15487.4	-	-
Magnesium	5											

**Table 5-6  
East 19th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	19GH001 5-7 3/3/2004 H&A	19GH001 13-15 3/3/2004 H&A	19GH001 13-15 3/4/2004 H&A	19GH001 29-31 3/4/2004 H&A	19GH001 29-31 2/24/2004 H&A	19GH002 0-2 2/24/2004 H&A	19GH002 2-4 2/24/2004 H&A	19GH002 5-7 3/2/2004 H&A	19GH002 12-13 3/2/2004 H&A	19GH002 28-30 3/2/2004 H&A
<b>BTEX (mg/kg)</b>												
Benzene	0.00223	0.06	0.0004J	0.00028U	NA	0.00025U	0.001J	0.0008J	0.00025U	0.0008J	0.001J	0.00025U
Toluene	0.0028	1.5	0.00023 U	0.00023 U	NA	0.00023 U	0.0034 J	0.00023 U	0.00022 U	0.00022 U	0.0016 J	0.00022 U
Total BTEX	NE	NE	0.0004	ND	NA	ND	0.0044	0.0008	ND	0.0008	0.0026	ND
<b>Other VOCs (mg/kg)</b>												
Acetone	0.141	0.2	0.0027UJ	0.0028UJ	NA	0.0028UJ	0.0027UJ	0.072J	0.065J	0.029J	0.028J	0.0026UJ
Carbon disulfide	0.00156	2.7	0.00033 U	0.00035 U	NA	0.00034 U	0.0012 J	0.0007 J	0.0006 J	0.0005 J	0.0022 J	0.001 J
Total VOCs	NE	10	0.0004	ND	NA	ND	0.0056	0.0735	0.0656	0.0303	0.0328	0.001
<b>VOC TICs (mg/kg)</b>												
Total VOC TICs	NE	NE	NA	0.006	NA	0.2	0.073	NA	NA	0.0056	0.0086	0.0055
<b>Noncarcinogenic PAHs (mg/kg)</b>												
Methylnaphthalene,2-	0.106	36.4	0.22J	0.71	0.081J	0.018U	NA	0.13J	0.5J	0.028J	0.018U	0.017U
Acenaphthene	0.117	50	0.36 J	0.42	0.041 J	0.0033 U	NA	0.14 J	0.64 J	0.013 J	0.0033 U	0.0031 U
Acenaphthylene	0.259	41	0.33 J	0.0034 U	0.0034 U	0.0033 U	NA	0.29 J	0.21 J	0.0089 J	0.017 J	0.0031 U
Anthracene	0.488	50	1.2 J	0.45	0.033 J	0.003 U	NA	0.42	0.88	0.014 J	0.017 J	0.0028 U
Benzo[a,h,i]perylene	0.565	50	0.62 J	0.064 J	0.0013 J	0.0042 U	NA	0.74	0.82	0.0041 U	0.029 J	0.004 U
Fluoranthene	3.416	50	6.1	0.42	0.064 J	0.0013 U	NA	1.8	4.6	0.028 J	0.073 J	0.0012 U
Fluorene	0.267	50	0.4 J	0.22 J	0.023 J	0.0027 U	NA	0.14 J	0.43 J	0.012 J	0.0027 U	0.0025 U
Naphthalene	0.476	13	0.32 J	0.4 J	0.081 J	0.0034 U	NA	0.3 J	0.78	0.066 J	0.015 J	0.0033 U
Phenanthrene	3.949	50	5.1	4.3	0.25 J	0.0036 U	NA	2	7.9	0.08 J	0.061 J	0.0034 U
Pyrene	4.525	50	6.1	0.76	0.094 J	0.0028 U	NA	2.3	4.5	0.048 J	0.098 J	0.0026 U
Total Noncarcinogenic PAHs	NE	NE	20.75	7.744	0.6683	ND	NA	8.26	21.26	0.2979	0.31	ND
<b>Carcinogenic PAHs (mg/kg)</b>												
Benz[a]anthracene	2.599	0.224	4.4	0.34	0.04J	0.011U	NA	1.1	1.5	0.025J	0.049	0.01U
Benzo[a]pyrene	1.046	0.061	0.027 UJ	0.18	0.021 J	0.0029 U	NA	1.2	1.5	0.02 J	0.044	0.0027 U
Benzo[b]fluoranthene	0.728	1.1	0.028 UJ	0.11	0.0031 U	0.003 U	NA	0.89	1.2	0.012 J	0.03 J	0.0028 U
Benzo[k]fluoranthene	0.996	1.1	0.038 UJ	0.16	0.0042 U	0.0041 U	NA	1.2	1.6	0.02 J	0.062	0.0038 U
Chrysene	1.267	0.4	5.8	0.48	0.062 J	0.0048 U	NA	1.3	1.7	0.032 J	0.056 J	0.0046 U
Dibenz[a,h]anthracene	0.162	0.014	0.34 J	0.041	0.0026 U	0.0026 U	NA	0.21	0.21	0.0025 U	0.0026 U	0.0024 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.69 J	0.067	0.016 J	0.0025 U	NA	0.64	0.79	0.011 J	0.026 J	0.0024 U
Total Carcinogenic PAHs	NE	NE	11.23	1.378	0.139	ND	NA	6.54	8.5	0.12	0.267	ND
<b>Total PAHs (mg/kg)</b>												
Total PAHs	NE	NE	31.98	9.122	0.8073	ND	NA	14.8	29.76	0.4179	0.577	ND
<b>Other SVOCs (mg/kg)</b>												
Bis(2-ethylhexyl)phthalate	0.823	50	0.22U	0.024U	0.024U	0.024U	NA	0.023U	0.045U	0.023U	0.024U	0.47
Carbazole	0.131	NE	0.35 J	0.0029 U	0.0029 U	0.0029 U	NA	0.14 J	0.67 J	0.0028 U	0.0029 U	0.0027 U
Dibenzofuran	0.197	6.2	0.24 J	0.029 J	0.017 J	0.02 U	NA	0.076 J	0.82	0.01 J	0.02 U	0.019 U
Dimethylphenol, 2,4-	0.021	NE	0.09 J	0.037 U	0.037 U	0.036 U	NA	0.035 U	0.027 J	0.035 U	0.036 U	0.034 U
Di-n-butyl phthalate	0.064	8.1	0.11 U	0.012 U	0.09 J	0.011 U	NA	0.011 U	0.022 U	0.011 U	0.011 U	0.011 U
Methylphenol, 4-	0.08	0.9	0.19 J	0.61	0.81	0.039 U	NA	0.0081 J	0.055 J	0.17 J	0.022 J	0.037 U
Methylphenol,2-	0.021	0.1	0.34 U	0.036 U	0.0082 J	0.035 U	NA	0.034 U	0.017 J	0.034 U	0.035 U	0.034 U
Phenol	0.042	0.03	0.5 U	0.067 J	0.054 U	0.052 U	NA	0.051 U	0.1 U	0.051 U	0.052 U	0.05 U
Total SVOCs	NE	500	32.85	9.828	1.7325	ND	NA	15.0241	31.349	0.5979	0.599	0.47
<b>SVOC TICs (mg/kg)</b>												
Total SVOC TICs	NE	NE	658	233.07	154.33	3.48	NA	3.25	5.12	3.84	NA	NA
<b>Metals (mg/kg)</b>												
Barium	124.7	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	36.69	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	237.7	237.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.305	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	7960	7960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	SB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.463	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	11563	11563	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	5.698	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	35.84	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	14369	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	3129	3129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	358.5	358.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	15.3	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	1193	1193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	214.8	214.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	30.25	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	81.77	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13.63	13.63 (sb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.2	1 (d)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	2.0 (d)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.229	0.229 (sb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>												
Cyanide, Total	0.705	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-6  
East 19th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	19GH003 5-7 3/9/2004 H&A	19GH003 14-16 3/9/2004 H&A	19GH003 28-30 3/9/2004 H&A	ST19SB01 2-4 3/14/2004 GEI	ST19SB01 14-16 3/17/2004 GEI	ST19SB01 38-40 3/17/2006 GEI	19WVSB01 4-8 5/13/2008 AECOM	19WVSB01 12-16 5/13/2008 AECOM	19WVSB01 20-26 5/13/2008 AECOM
<b>BTEX (mg/kg)</b>											
Benzene	0.00223	0.06	0.00025U	0.00025U	0.00028U	0.028U	0.028U	0.025U	0.0043 U	0.0048 U	0.0061 U
Toluene	0.0028	1.5	0.00022 U	0.00022 U	0.00023 U	0.028 U	0.028 U	0.028 U	0.0053 U	0.0059 U	0.0075 U
Total BTEX	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Other VOCs (mg/kg)</b>											
Acetone	0.141	0.2	0.0027UJ	0.0026UJ	0.0028UJ	0.14U	0.14U	ND	0.100 U	0.110 U	0.150 U
Carbon disulfide	0.00156	2.7	0.00034 U	0.00032 U	0.0037 J	0.028 U	0.028 U	0.028 U	0.0065 U	0.0072 U	0.046
Total VOCs	NE	10	ND	ND	0.0037	ND	ND	ND	ND	ND	0.046
<b>VOC TICs (mg/kg)</b>											
Total VOC TICs	NE	NE	0.0092	0.0163	0.02	NA	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>											
Methylnaphthalene,2-	0.106	36.4	0.018U	0.018U	0.018U	0.37U	0.38U	0.37U	0.011 U	0.012 U	0.015 U
Acenaphthene	0.117	50	0.0033 U	0.0032 U	0.0032 U	0.37 U	0.38 U	0.37 U	0.0087 U	0.061 J	0.012 U
Acenaphthylene	0.259	41	0.0033 U	0.0032 U	0.0032 U	0.37 U	0.38 U	0.37 U	0.0059 U	0.0064 U	0.0079 U
Anthracene	0.488	50	0.012 J	0.026 J	0.0029 U	0.37 U	0.38 U	0.059 J	0.045 J	0.015 U	0.018 U
Benzo[g,h,i]perylene	0.565	50	0.0042 U	0.0099 J	0.0041 U	0.37 UJ	0.38 U	0.37 U	0.060 J	0.032 U	0.039 U
Fluoranthene	3.416	50	0.058 J	0.14 J	0.019 J	0.17 J	0.38 U	0.078 J	0.300 J	0.011 U	0.013 U
Fluorene	0.267	50	0.0027 U	0.0026 U	0.0026 U	0.37 U	0.38 U	0.37 U	0.011 U	0.012 U	0.015 U
Naphthalene	0.476	13	0.0034 U	0.01 J	0.0034 U	0.37 U	0.16 J	0.1 J	0.0097 U	0.011 U	0.013 U
Phenanthrene	3.949	50	0.023 J	0.08 J	0.017 J	0.12 J	0.38 U	0.15 J	0.310 J	0.170 J	0.017 U
Pyrene	4.525	50	0.046 J	0.13 J	0.025 J	0.15 J	0.38 U	0.074 J	0.230 J	0.059 J	0.012 U
Total Noncarcinogenic PAHs	NE	NE	0.139	0.485	0.061	0.44	0.16	0.461	0.945	0.29	ND
<b>Carcinogenic PAHs (mg/kg)</b>											
Benz[a]anthracene	2.599	0.224	0.015J	0.22	0.01U	0.078J	0.38U	0.37U	0.110 J	0.011 U	0.013 U
Benzo[a]pyrene	1.046	0.061	0.013 J	0.15	0.016 J	0.074 J	0.38 U	0.37 U	0.100 J	0.013 U	0.016 U
Benzo[b]fluoranthene	0.728	1.1	0.011 J	0.26	0.0029 U	0.088 J	0.38 U	0.37 U	0.130 J	0.032 U	0.039 U
Benzo[k]fluoranthene	0.996	1.1	0.015 J	0.2 J	0.004 UJ	0.37 UJ	0.38 U	0.37 U	0.051 J	0.020 U	0.025 U
Chrysene	1.267	0.4	0.022 J	1.1	0.0047 U	0.091 J	0.38 U	0.37 U	0.100 J	0.0082 U	0.010 U
Dibenzo[a,h]anthracene	0.162	0.014	0.0026 U	0.032 J	0.0025 U	0.37 U	0.38 U	0.37 U	0.030 U	0.032 U	0.040 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.0025 U	0.074	0.0025 U	0.049 J	0.38 U	0.37 U	0.048 J	0.011 U	0.014 U
Total Carcinogenic PAHs	NE	NE	0.076	2.036	0.016	0.38	ND	ND	0.539	ND	ND
<b>Total PAHs (mg/kg)</b>											
Total PAHs	NE	NE	0.215	2.521	0.077	0.82	0.16	0.461	1.484	0.29	ND
<b>Other SVOCs (mg/kg)</b>											
Bis(2-ethylhexyl)phthalate	0.823	50	0.024U	0.023U	0.023U	0.1J	0.38U	0.37U	0.015 U	0.017 U	0.021 U
Carbazole	0.131	NE	0.0029 U	0.0028 U	0.0028 U	0.37 U	0.38 U	0.37 U	0.031 U	0.034 U	0.041 U
Dibenzofuran	0.197	6.2	0.015 J	0.02 U	0.02 U	0.37 U	0.38 U	0.37 U	0.012 U	0.014 U	0.017 U
Dimethylphenol, 2,4-	0.021	NE	0.036 U	0.035 U	0.035 U	0.37 U	0.38 U	0.37 U	0.012 U	0.013 U	0.016 U
Di-n-butyl phthalate	0.064	8.1	0.011 U	0.011 U	0.011 U	0.37 U	0.38 U	0.37 U	0.019 U	0.021 U	0.025 U
Methylphenol, 4-	0.08	0.9	0.039 U	0.038 U	0.038 U	0.37 U	0.38 U	0.37 U	0.012 U	0.083 J	0.016 U
Methylphenol,2-	0.021	0.1	0.035 U	0.034 U	0.034 U	0.37 U	0.38 U	0.37 U	0.011 U	0.012 U	0.014 U
Phenol	0.042	0.03	0.052 U	0.051 U	0.051 U	0.37 U	0.38 U	0.37 U	0.011 U	0.012 U	0.015 U
Total SVOCs	NE	500	0.23	2.521	0.077	0.92	0.16	0.461	1.484	0.373	ND
<b>SVOC TICs (mg/kg)</b>											
Total SVOC TICs	NE	NE	NA	NA	NA	0.884	3.34	4.373	NA	NA	NA
<b>Metals (mg/kg)</b>											
Barium	124.7	300	NA	NA	NA	41.1 J	42.8 J	14.3 J	144 J	131 J	36.5 J
Chromium	36.69	10	NA	NA	NA	13.9 J	16.1 J	9.2 J	7.31	8.45	27.5
Lead	237.7	237.7	NA	NA	NA	54.1 J	29.2 J	6.6 J	230	237	17
Mercury	1.305	0.1	NA	NA	NA	0.551	0.047 J	0.018 J	0.693 J-	0.255 J-	0.028 J-
Aluminum	7960	7960	NA	NA	NA	9500 J	7820 J	2040 J	4790	4090	11700
Antimony	NE	SB	NA	NA	NA	12.5 J	13.6 J	6.9 J	0.869	0.750 J	1.14
Beryllium	0.463	0.16	NA	NA	NA	0.45 J	0.42 J	0.2 J	0.243 J	0.259 J	0.611
Calcium	11563	11563	NA	NA	NA	776 J	2170 J	1030 J	53600	14900	2830
Cobalt	5.698	30	NA	NA	NA	5 J	7.4 J	3.1 J	2.47	3.99	10.6
Copper	35.84	25	NA	NA	NA	30.9 J	30.4 J	6.7 J	19.3 J	75.3 J	17.4 J
Iron	14369	2000	NA	NA	NA	14100 J	13800 J	4310 J	7030	9840	35300
Magnesium	3129	3129	NA	NA	NA	1880 J	2130 J	1400 J	3150	1730	6280
Manganese	358.5	358.5	NA	NA	NA	240 J	239 J	44.6 J	170	243	460
Nickel	15.3	13	NA	NA	NA	10.5 J	13.2	10.5 J	5.49	8.5	24.1
Potassium	1193	1193	NA	NA	NA	707 J	911 J	694 J	594	1020	2990
Sodium	214.8	214.8	NA	NA	NA	568 UJ	591 J	372 J	230	798	1640
Vanadium	30.25	150	NA	NA	NA	29 J	23.1 J	6.7 J	9.25	15	34.8
Zinc	81.77	20	NA	NA	NA	21.4 J	36.5 J	14.1 J	321	42.7	76.1
Arsenic	13.63	13.63 (sb)	NA	NA	NA	NA	NA	NA	2.85	5.94	13.8
Cadmium	0.2	1 (d)	NA	NA	NA	NA	NA	NA	0.664	0.088 U	0.148 J
Selenium	NA	2.0 (d)	NA	NA	NA	NA	NA	NA	0.669 U	0.961	0.893 U
Silver	0.229	0.229 (sb)	NA	NA	NA	NA	NA	NA	39.1	0.185 U	0.229 U
<b>Cyanide (mg/kg)</b>											
Cyanide, Total	0.705	NE	NA	NA	NA	0.568 U	0.572 U	0.569 U	0.612 U	0.667 U	0.817 U

**Notes:**

Blue indicates compound detected in sample;  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-6  
East 19th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Borehole Location: Depth Interval (ft): Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	19WVSB02 8-10 5/14/2008 AECOM	19WVSB02 10-12 5/14/2008 AECOM	19WVSB02 23-24 5/14/2008 AECOM
<b>BTEX (mg/kg)</b>					
Benzene	0.00223	0.06	0.0042 U	0.0044 U	0.0054 U
Toluene	0.0028	1.5	0.0052 U	0.0054 U	0.0066 U
Total BTEX	NE	NE	ND	ND	ND
<b>Other VOCs (mg/kg)</b>					
Acetone	0.141	0.2	0.100 U	0.100 U	0.130 U
Carbon disulfide	0.00156	2.7	0.0063 U	0.0066 U	0.0081 U
Total VOCs	NE	10	ND	ND	ND
<b>VOC TICs (mg/kg)</b>					
Total VOC TICs	NE	NE	NA	NA	NA
<b>Noncarcinogenic PAHs (mg/kg)</b>					
Methylnaphthalene,2-	0.106	36.4	0.011 U	0.011 U	0.014 U
Acenaphthene	0.117	50	0.063 J	0.180 J	0.011 U
Acenaphthylene	0.259	41	0.0059 U	0.0058 U	0.0074 U
Anthracene	0.488	50	0.210 J	0.41	0.017 U
Benzo[g,h,i]perylene	0.565	50	0.370 J	0.110 J	0.037 U
Fluoranthene	3.416	50	0.92	0.91	0.012 U
Fluorene	0.267	50	0.091 J	0.075 J	0.014 U
Naphthalene	0.476	13	0.0097 U	0.0096 U	0.012 U
Phenanthrene	3.949	50	0.62	0.100 J	0.016 U
Pyrene	4.525	50	1.1	1.6	0.011 U
Total Noncarcinogenic PAHs	NE	NE	3.374	3.385	ND
<b>Carcinogenic PAHs (mg/kg)</b>					
Benzo[a]anthracene	2.599	0.224	0.98	1.7	0.012 U
Benzo[a]pyrene	1.046	0.061	0.61	0.290 J	0.015 U
Benzo[b]fluoranthene	0.728	1.1	0.69	0.45	0.037 U
Benzo[k]fluoranthene	0.996	1.1	0.240 J	0.087 J	0.023 U
Chrysene	1.267	0.4	1.2	2.1	0.0094 U
Dibenzo[a,h]anthracene	0.162	0.014	0.140 J	0.120 J	0.037 U
Indeno[1,2,3-cd]pyrene	0.509	3.2	0.41	0.150 J	0.013 U
Total Carcinogenic PAHs	NE	NE	4.27	4.897	ND
<b>Total PAHs (mg/kg)</b>					
Total PAHs	NE	NE	7.644	8.282	ND
<b>Other SVOCs (mg/kg)</b>					
Bis(2-ethylhexyl)phthalate	0.823	50	0.015 U	0.015 U	0.019 U
Carbazole	0.131	NE	0.031 U	0.030 U	0.039 U
Dibenzofuran	0.197	6.2	0.042 J	0.110 J	0.016 U
Dimethylphenol, 2,4-	0.021	NE	0.012 U	0.012 U	0.015 U
Di-n-butyl phthalate	0.064	8.1	0.019 U	0.019 U	0.024 U
Methylphenol, 4-	0.08	0.9	0.012 U	0.012 U	0.015 U
Methylphenol,2-	0.021	0.1	0.011 U	0.011 U	0.014 U
Phenol	0.042	0.03	0.011 U	0.011 U	0.014 U
Total SVOCs	NE	500	7.686	8.392	ND
<b>SVOC TICs (mg/kg)</b>					
Total SVOC TICs	NE	NE	NA	NA	NA
<b>Metals (mg/kg)</b>					
Barium	124.7	300	54.3 J	39.4 J	31.6 J
Chromium	36.69	10	9.23	7.45	23.6
Lead	237.7	237.7	124	20.6	12.7
Mercury	1.305	0.1	0.527 J-	0.056 J-	0.024 J-
Aluminum	7960	7960	4010	5330	11000
Antimony	NE	SB	1.58	0.517 J	0.863 J
Beryllium	0.463	0.16	0.222 J	0.253	0.588
Calcium	11563	11563	120000	20200	2390
Cobalt	5.698	30	3.24	4.6	9.81
Copper	35.84	25	28.9 J	13.3 J	14.6 J
Iron	14369	2000	9710	10600	27600
Magnesium	3129	3129	37800	8530	6280
Manganese	358.5	358.5	199	127	492
Nickel	15.3	13	9.44	9.63	21.9
Potassium	1193	1193	581	471	2450
Sodium	214.8	214.8	246	176	1270
Vanadium	30.25	150	11.6	10.9	29.7
Zinc	81.77	20	56.6	24.1	67
Arsenic	13.63	13.63 (sb)	5.87	2.48	8.7
Cadmium	0.2	1 (d)	0.215 J	0.081 U	0.103 U
Selenium	NA	2.0 (d)	0.663 U	0.661 U	0.842 U
Silver	0.229	0.229 (sb)	0.170 U	0.169 U	0.216 U
<b>Cyanide (mg/kg)</b>					
Cyanide, Total	0.705	NE	0.607 U	0.805 U	0.77 U

**Notes:**

Blue indicates compound detected in sample;  
Red bolding indicates concentration is above the respective NYSDEC RSCO.  
Gray shading indicates concentration is above the respective NYSDEC RSCO and the Site-specific Background Value from the H&A Site Characterization Report (rev. April 2005).  
Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-6  
East 19th Street Station Subsurface Soil Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	Site-Specific Background Value (from H&A)	NYSDEC RSCOs	Summary Statistics											
			Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (mg/kg)</b>														
Benzene	0.0023	0.06	21	5	16	0	0	0.001	19GH002 12 - 13 3/2/2004 H&A	0.0004	19GH001 5 - 7 3/2/2004 H&A	0.0008	0.00025	0.028
Toluene	0.0028	1.5	21	2	19	0	0	0.0034	Duplicate 19GH001 29 - 31 3/4/2004 H&A	0.0016	19GH002 12 - 13 3/2/2004 H&A	0.0025	0.00022	0.028
Total BTEX	NE	NE	21	5	16	0	0	0.0044	Duplicate 19GH001 29 - 31 3/4/2004 H&A	0.0004	19GH001 5 - 7 3/2/2004 H&A	0.0018	-	-
<b>Other VOCs (mg/kg)</b>														
Acetone	0.141	0.2	20	4	16	0	0	0.072	19GH002 0 - 2 2/24/2004 H&A	0.028	19GH002 12 - 13 3/2/2004 H&A	0.0485	0.0026	0.15
Carbon disulfide	0.00156	2.7	21	8	13	1	0	0.046	19WVSB01 20-26	0.0005	19GH002 5 - 7 3/2/2004 H&A	0.0069875	0.00032	0.028
Total VOCs	NE	10	16	9	7	0	0	0.0735	19GH002 0 - 2 2/24/2004 H&A	0.0004	19GH001 5 - 7 3/2/2004 H&A	0.028766667	-	-
<b>VOC TICs (mg/kg)</b>														
Total VOC TICs	NE	NE	9	9	0	0	0	0.2	19GH001 29 - 31 3/4/2004 H&A	0.0055	19GH002 28 - 30 3/2/2004 H&A	0.038244444	-	-
<b>Noncarcinogenic PAHs (mg/kg)</b>														
Methylnaphthalene,2-	0.106	36.4	21	6	15	0	0	0.71	19GH001 13 - 15 3/3/2004 H&A	0.028	19GH002 5 - 7 3/2/2004 H&A	0.278166667	0.011	0.38
Acenaphthene	0.117	50	21	9	12	1	0	0.64	19GH002 2 - 4 2/24/2004 H&A	0.013	19GH002 5 - 7 3/2/2004 H&A	0.213111111	0.0031	0.38
Acenaphthylene	0.259	41	21	5	16	0	0	0.33	19GH001 5 - 7 3/3/2004 H&A	0.0089	19GH002 5 - 7 3/2/2004 H&A	0.17118	0.0031	0.38
Anthracene	0.488	50	21	13	8	0	0	1.2	19GH001 5 - 7 3/3/2004 H&A	0.012	19GH003 5 - 7 3/9/2004 H&A	0.290461538	0.0028	0.38
Benzo[a,h]perylene	0.565	50	21	10	11	0	0	0.82	19GH002 2 - 4 2/24/2004 H&A	0.0013	Duplicate 19GH001 13 - 15 3/3/2004 H&A	0.29133	0.004	0.38
Fluoranthene	3.416	50	21	15	6	0	0	6.1	19GH001 5 - 7 3/3/2004 H&A	0.019	19GH003 28 - 30 3/9/2004 H&A	1.045333333	0.0012	0.38
Fluorene	0.267	50	21	8	13	0	0	0.43	19GH002 2 - 4 2/24/2004 H&A	0.012	19GH002 5 - 7 3/2/2004 H&A	0.173875	0.0025	0.38
Naphthalene	0.476	13	21	10	11	0	0	0.78	19GH002 2 - 4 2/24/2004 H&A	0.01	19GH003 14 - 16 3/9/2004 H&A	0.2232	0.0033	0.37
Phenanthrene	3.949	50	21	16	5	0	0	7.9	19GH002 2 - 4 2/24/2004 H&A	0.017	19GH003 28 - 30 3/9/2004 H&A	1.3300625	0.0034	0.38
Pyrene	4.525	50	21	16	5	0	0	6.1	19GH001 5 - 7 3/3/2004 H&A	0.025	19GH003 28 - 30 3/9/2004 H&A	1.082125	0.0026	0.38
Total Noncarcinogenic PAHs	NE	NE	15	13	2	0	0	21.26	19GH002 2 - 4 2/24/2004 H&A	0.061	19GH003 28 - 30 3/9/2004 H&A	4.68502308	-	-
<b>Carcinogenic PAHs (mg/kg)</b>														
Benzo[a]anthracene	2.599	0.224	21	13	8	6	0	4.4	19GH001 5 - 7 3/3/2004 H&A	0.015	19GH003 5 - 7 3/9/2004 H&A	0.812076923	0.01	0.38
Benzo[a]pyrene	1.046	0.061	21	13	8	8	0	1.5	19GH002 2 - 4 2/24/2004 H&A	0.013	19GH003 5 - 7 3/9/2004 H&A	0.324461538	0.0027	0.38
Benzo[b]fluoranthene	0.728	1.1	21	11	10	1	0	1.2	19GH002 2 - 4 2/24/2004 H&A	0.011	19GH003 5 - 7 3/9/2004 H&A	0.351909091	0.0028	0.38
Benzo[k]fluoranthene	0.996	1.1	21	10	11	2	0	1.6	19GH002 2 - 4 2/24/2004 H&A	0.015	19GH003 5 - 7 3/9/2004 H&A	0.3635	0.0038	0.38
Chrysene	1.267	0.4	21	13	8	7	0	5.8	19GH001 5 - 7 3/3/2004 H&A	0.022	19GH003 5 - 7 3/9/2004 H&A	1.080230769	0.0046	0.38
Dibenz[a,h]anthracene	0.162	0.014	21	7	14	7	0	0.34	19GH001 5 - 7 3/3/2004 H&A	0.032	19GH003 14 - 16 3/9/2004 H&A	0.156142857	0.0024	0.38
Indeno[1,2,3-cd]pyrene	0.509	3.2	21	12	9	0	0	0.79	19GH002 2 - 4 2/24/2004 H&A	0.011	19GH002 5 - 7 3/2/2004 H&A	0.247583333	0.0024	0.38
Total Carcinogenic PAHs	NE	NE	21	14	7	0	0	11.23	19GH001 5 - 7 3/3/2004 H&A	0.016	19GH003 28 - 30 3/9/2004 H&A	2.315427143	-	-
<b>Total PAHs (mg/kg)</b>														
Total PAHs	NE	NE	21	17	4	0	0	31.98	19GH001 5 - 7 3/3/2004 H&A	0.077	19GH003 28 - 30 3/9/2004 H&A	6.436364706	-	-
<b>Other SVOCs (mg/kg)</b>														
Bis(2-ethylhexyl)phthalate	0.823	50	21	2	19	0	0	0.47	19GH002 28 - 30 3/2/2004 H&A	0.1	ST19SB01 2 - 4 3/14/2006 GEI	0.285	0.015	0.38
Carbazole	0.131	NE	21	3	18	0	0	0.67	19GH002 2 - 4 2/24/2004 H&A	0.14	19GH002 0 - 2 2/24/2004 H&A	0.386666667	0.0027	0.38
Dibenzofuran	0.197	6.2	21	9	12	0	0	0.82	19GH002 2 - 4 2/24/2004 H&A	0.01	19GH002 5 - 7 3/2/2004 H&A	0.151	0.012	0.38
Dimethylphenol, 2,4-	0.021	NE	21	2	19	0	0	0.09	19GH001 5 - 7 3/3/2004 H&A	0.027	19GH002 2 - 4 2/24/2004 H&A	0.0585	0.012	0.38
Di-n-butyl phthalate	0.064	8.1	21	1	20	0	0	0.09	Duplicate 19GH001 13 - 15 3/3/2004 H&A	0.09	Duplicate 19GH001 13 - 15 3/3/2004 H&A	0.09	0.011	0.38
Methylphenol, 4-	0.08	0.9	21	8	13	0	0	0.81	Duplicate 19GH001 13 - 15 3/3/2004 H&A	0.0081	19GH002 0 - 2 2/24/2004 H&A	0.2435125	0.012	0.38
Methylphenol,2-	0.021	0.1	21	2	19	0	0	0.017	19GH002 2 - 4 2/24/2004 H&A	0.0082	Duplicate 19GH001 13 - 15 3/3/2004 H&A	0.0126	0.011	0.38
Phenol	0.042	0.03	21	1	20	1	0	0.067	19GH001 13 - 15 3/3/2004 H&A	0.067	19GH001 13 - 15 3/3/2004 H&A	0.067	0.011	0.5
Total SVOCs	NE	500	21	18	3	0	0	32.85	19GH001 5 - 7 3/3/2004 H&A	0.077	19GH003 28 - 30 3/9/2004 H&A	6.37525	-	-
<b>SVOC TICs (mg/kg)</b>														
Total SVOC TICs	NE	NE	10	10	0	0	0	658	19GH001 5 - 7 3/3/2004 H&A	0.884	ST19SB01 2 - 4 3/14/2006 GEI	106.9687	-	-
<b>Metals (mg/kg)</b>														
Barium	124.7	300	9	9	0	2	0	144	19WVSB01 4-8	14.3	ST19SB01 38 - 40 3/17/2006 GEI	59.44444444	-	-
Chromium	36.69	10	9	9	0	2	0	27.5	19WVSB01 20-26	7.31	19WVSB01 4-8	13.63777778	-	-
Lead	237.7	237.7	9	9	0	0	0	237	19WVSB01 12-16	6.6	ST19SB01 38 - 40 3/17/2006 GEI	81.24444444	-	-
Mercury	1.305	0.1	9	9	0	4	0	0.693	19WVSB01 4-8	0.018	ST19SB01 38 - 40 3/17/2006 GEI	0.244333333	-	-
Aluminum	7960	7960	9	9	0	3	0	11700	19WVSB01 20-26	2040	ST19SB01 38 - 40 3/17/2006 GEI	6697.777778	-	-
Antimony	NE	SB	9	9	0	0	0	13.6	ST19SB01 14 - 16 3/17/2006 GEI	0.517	19WVSB02 10-12	4.302111111	-	-
Beryllium	0.463	0.16	9	9	0	5	0	0.611	19WVSB01 20-26	0.2	ST19SB01 38 - 40 3/17/2006 GEI	0.360666667	-	-
Calcium	11563	11563	9	9	0	4	0	120000	19WVSB02 8-10	776	ST19SB01 2 - 4 3/14/2006 GEI	24210.66667	-	-
Cobalt	5.698	30	9	9	0	2	0	10.6	19WVSB01 20-26	2.47	19WVSB01 4-8	5.578888889	-	-
Copper	35.84	25	9	9	0	3	0	75.3	19WVSB01 12-16	6.7	ST19SB01 38 - 40 3/17/2006 GEI	26.31111111	-	-
Iron	14369	2000	9	9	0	5	0	35300	19WVSB01 20-26	4310	ST19SB01 38 - 40 3/17/2006 GEI	14698.88889	-	-
Magnesium	3129	3129	9	9	0	5	0	37800	19WVSB02 8-10	1400	ST19SB01 38 - 40 3/17/2006 GEI	7686.666667	-	-
Manganese	358.5	358.5	9	9	0	2	0	492	19WVSB02 23-24	44.6	ST19SB01 38 - 40 3/17/2006 GEI	246.0666667	-	-
Nickel	15.3	13	9	9	0	3	0	24.1	19WVSB01 20-26	5.49	19WVSB01 4-8	12.58444444	-	-
Potassium	1193	1193	9	9	0	2	0	2990	19WVSB01 20-26	471	19WVSB02 10-12	1157.555556	-	-
Sodium	214.8	214.8	9	8	1	7	0	1640	19WVSB01 20-26	176	19WVSB02 10-12	665.375	568	568
Vanadium	30.25	150	9	9	0	1	0	34.8	19WVSB01 20-26	6.7	ST19SB01 38 - 40 3/17/2006 GEI	18.89444444	-	-
Zinc	81.77	20	9	9	0	3	0	321	19WVSB01 4-8	14.1	ST19SB01 38 - 40 3/17/2006 GEI	73.27777778	-	-
Arsenic	13.63	13.63 (sb)	6	6	0	1	0	13.8	19WVSB01 20-26	2.48	19WVSB02 10-12	6.606666667	-	-
Cadmium	0.2	1 (d)	6	3	3	2	0	0.664	19WVSB01 4-8	0.148	19WVSB01 20-26	0.342333333	0.081	0.103
Selenium	NA	2.0 (d)	6	1	5	0	0	0.961	19WVSB01 12-16	0.961	19WVSB01 12-16	0.961	0.861	0.893
Silver	0.229	0.229 (sb)	6	1	5	1	0	39.1	19WVSB01 4-8	39.1	19WVSB01 4-8	39.1	0.169	0.229
<b>Cyanide (mg/kg)</b>														
Cyanide, Total	0.705	NE	9	0	9	0	0	-	-	-	-	-	0.568	0.817

**Table 5-7**  
**First Avenue Loop Road Subsurface Soil Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Borehole Location: Depth Interval in feet: Date Collected: Investigation Conducted by:	Site-Specific Background Value (from H&A)	NYSDEC RSCO	A4WVSB01 8-12 5/14/2008 AECOM	A4WVSB01 16-20 5/14/2008 AECOM
<b>VOC (mg/kg)</b>				
Trichloroethene	0.00021	0.7	0.0041 U	0.055
Total VOC	NA	10	ND	0.055
<b>PAH (mg/kg)</b>				
Fluoranthene	3.416	50	0.043 J	0.0091 U
Fluorene	0.267	50	0.010 U	0.042 J
Naphthalene	0.476	13	0.0093 U	0.130 J
Phenanthrene	3.949	50	0.012 U	0.130 J
Pyrene	4.525	50	0.049 J	0.0082 U
Total PAH	NA	NA	0.092	0.302
<b>SVOC (mg/kg)</b>				
2-Methylnaphthalene	0.106	36.4	0.011 U	0.68
bis(2-Ethylhexyl)phthalate	0.823	50	0.063 J	0.014 U
Total SVOC	NA	500	0.155	0.982
<b>Metals (mg/kg)</b>				
Aluminum	7960	7960	5310	1840
Antimony	NA	NA	0.664 J	0.435 U
Arsenic	13.63	13.63	3.45	0.898
Barium	124.7	300	60.2 J	19.3 J
Beryllium	0.463	0.463	0.284	0.139 J
Calcium	11563	11563	14900	1180
Chromium	36.69	36.69	11	7.01
Cobalt	5.698	30	4.53	2.18
Copper	35.84	35.84	16.3 J	7.270 J
Iron	14369	14369	9860	5120
Lead	237.7	237.7	24.7	4.16
Magnesium	3129	3129	2550	993
Manganese	358.5	358.5	250	139
Mercury	1.305	0.1	0.074 J-	0.008 UJ
Nickel	15.3	15.3	9.44	8.34
Potassium	1193	1197	1190	433
Sodium	214.8	214.8	291	79
Vanadium	30.25	150	18.6	7.44
Zinc	81.77	81.77	31.6	10.4

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC RSCO.

gray shading indicates concentration is above the respective NYSDEC RSCO and the site-specific background value from the H&A Site Characterization Report (rev. April 2005).

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.



**Table 5-8**  
**Background Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location Screened Interval (ft bgs): Sample Date: Investigation Conducted by:	NYDEC AWQSGVs	00MWS06 7.2-17.2 4/19/2004 H&A	00MWS06 7.2-17.2 6/7/2006 GEI	00MWS06 7.2-17.2 8/19/2008 AECOM	00MWD06 22-32 4/19/2004 H&A	00MWD06 22-32 6/7/2008 GEI	00MWD06 22-32 8/19/2008 AECOM	00MWD06 DUP 22-32 8/19/2008 AECOM	00MWS07 15-25 4/16/2004 H&A	00MWS07 15-25 6/9/2006 GEI	00MWS07 15-25 9/29/2008 AECOM	00MWD07 30.6-40.6 4/16/2004 H&A	00MWD07 30.6-40.6 6/9/2006 GEI	00MWD07 30.6-40.6 9/29/2008 AECOM	00MWD07 DUP 30.6-40.6 9/29/2008 AECOM
<b>BTEX (ug/L)</b>															
Benzene	1	0.3 U	1 U	0.52 U	<b>2</b>	1 U	<b>1.5</b>	<b>1.4</b>	0.3 U	1 UJ	0.52 U	0.3 U	1 U	0.52 U	0.52 U
Toluene	5	0.2 U	1 U	0.51 U	0.2 U	1 U	0.51 U	0.51 U	0.2 U	1 UJ	0.51 U	0.2 U	1 U	0.51 U	0.51 U
Ethylbenzene	5	0.4 U	1 U	0.50 U	0.4 U	1 U	0.50 U	0.50 U	0.4 U	1 UJ	0.50 U	0.4 U	1 U	0.50 U	0.50 U
Xylene, total	NE	0.2 U	1 U	ND	0.2 U	1 U	ND	ND	0.2 U	1 UJ	ND	0.2 U	1 U	ND	ND
Total BTEX	NE	ND	ND	ND	<b>2</b>	ND	<b>1.5</b>	<b>1.4</b>	ND	ND	ND	ND	ND	ND	ND
<b>Other VOC (ug/L)</b>															
Acetone	50*	1.0 UJ	5 UJ	2.7 U	1.0 UJ	5 UJ	2.7 U	2.7 U	1.0 U	5 UJ	2.7 U	1.0 U	5 UJ	2.7 U	2.7 U
Bromodichloromethane	50*	0.4 U	1 U	0.59 U	0.4 U	1 U	0.59 U	0.59 U	0.4 U	1 UJ	0.59 U	0.4 U	1 U	0.59 U	0.59 U
Bromoform	NE	0.3 UJ	1 UJ	0.42 U	0.3 UJ	1 UJ	0.42 U	0.42 U	0.3 UJ	1 UJ	0.42 U	0.3 UJ	1 UJ	0.42 U	0.42 U
Bromomethane	5	0.4 U	1 U	0.63 U	0.4 U	1 U	0.63 U	0.63 U	0.4 U	1 UJ	0.63 U	0.4 U	1 U	0.63 U	0.63 U
Butanone,2-	50*	2.5 U	5 UJ	4.6 U	2.5 U	5 UJ	4.6 U	4.6 U	2.5 U	5 UJ	4.6 U	2.5 U	5 UJ	4.6 U	4.6 U
Carbon disulfide	NE	0.2 U	1 U	0.51 U	0.2 U	1 U	0.51 U	0.51 U	0.2 U	1 UJ	0.51 U	0.2 U	1 U	0.51 U	0.51 U
Carbon tetrachloride	5	0.2 U	1 UJ	0.49 U	0.2 U	1 UJ	0.49 U	0.49 U	0.2 U	1 UJ	0.49 U	0.2 U	1 UJ	0.49 U	0.49 U
Chlorobenzene	5	0.2 U	1 U	0.50 U	0.2 U	1 U	0.50 U	0.50 U	0.2 U	1 UJ	0.50 U	0.2 U	1 U	0.50 U	0.50 U
Chloroethane	5	0.5 U	1 UJ	0.49 U	0.5 U	1 UJ	0.49 U	0.49 U	0.5 U	1 UJ	0.49 U	0.5 U	1 UJ	0.49 U	0.49 U
Chloroform	7	0.2 U	1 U	<b>14</b>	0.2 U	1 U	0.46 U	0.46 U	0.2 U	1 UJ	0.46 U	0.2 U	1 U	0.46 U	0.46 U
Chloromethane	5	0.5 U	1 U	0.38 U	0.5 U	1 U	0.38 U	0.38 U	0.5 U	1 UJ	0.38 U	0.5 U	1 U	0.38 U	0.38 U
Cyclohexane	NE	NA	1 U	0.37 U	NA	1 U	0.37 U	0.37 U	NA	1 UJ	0.37 U	NA	1 U	0.37 U	0.37 U
Dibromo-3-chloropropane,1,2-	NE	NA	1 UJ	0.45 U	NA	1 UJ	0.45 U	0.45 U	NA	1 UJ	0.45 U	NA	1 UJ	0.45 U	0.45 U
Dibromochloromethane	50*	0.2 U	1 U	0.45 U	0.2 U	1 U	0.45 U	0.45 U	0.2 U	1 UJ	0.45 U	0.2 U	1 U	0.45 U	0.45 U
Dibromoethane,1,2-	NE	NA	1 UJ	0.56 U	NA	1 UJ	0.56 U	0.56 U	NA	1 UJ	0.56 U	NA	1 U	0.56 U	0.56 U
Dichlorodifluoromethane	NE	NA	1 U	0.43 UJ	NA	1 U	0.43 UJ	0.43 UJ	NA	1 UJ	0.43 UJ	NA	1 U	0.43 UJ	0.43 UJ
Dichloroethane,1,1-	5	0.2 U	1 U	0.55 U	0.2 U	1 U	0.55 U	0.55 U	0.2 U	1 UJ	0.55 U	0.2 U	1 U	0.55 U	0.55 U
Dichloroethane,1,2-	0.6	0.3 U	1 U	0.38 U	0.3 U	1 U	0.38 U	0.38 U	0.3 U	1 UJ	0.38 U	0.3 U	1 UJ	0.38 U	0.38 U
Dichloroethene, cis-1,2-	5	0.2 U	1 U	0.53 U	<b>5.4</b>	<b>13</b>	<b>18</b>	<b>16</b>	0.2 U	1 UJ	0.53 U	0.2 U	1 U	0.53 U	0.53 U
Dichloroethene,1,1-	5	0.4 U	1 U	0.55 U	0.4 U	1 U	0.55 U	0.55 U	0.4 U	1 U	0.55 U	0.4 U	1 U	0.55 U	0.55 U
Dichloropropane,1,2-	1	0.2 U	1 U	0.56 U	0.2 U	1 U	0.56 U	0.56 U	0.2 U	1 UJ	0.56 U	0.2 U	1 U	0.56 U	0.56 U
Dichloropropene, cis-1,3	NE	0.2 U	1 U	0.54 U	0.2 U	1 U	0.54 U	0.54 U	0.2 U	1 UJ	0.54 U	0.2 U	1 U	0.54 U	0.54 U
Dichloropropene, trans-1,3	NE	0.2 U	1 U	0.44 U	0.2 U	1 U	0.44 U	0.44 U	0.2 U	1 U	0.44 U	0.2 U	1 U	0.44 U	0.44 U
Hexanone,2-	NE	1.0 U	5 UJ	2.9 U	1.0 U	5 UJ	2.9 U	2.9 U	1.0 U	5 UJ	2.9 U	1.0 U	5 UJ	2.9 U	2.9 U
Isopropyl benzene	5	NA	1 U	0.44 U	NA	1 U	0.44 U	0.44 U	NA	1 UJ	0.44 U	NA	1 U	0.44 U	0.44 U
Methyl acetate	NE	NA	1 UJ	0.92 U	NA	1 UJ	0.92 U	0.92 U	NA	1 UJ	0.92 U	NA	1 UJ	0.92 U	0.92 U
Methyl tert-butyl ether	NE	NA	1 U	0.50 U	NA	1 U	0.50 U	0.50 U	NA	1 UJ	0.50 U	NA	1 U	0.50 U	0.50 U
Methyl-2-pentanone,4-	NE	0.6 U	5 UJ	2.7 U	0.6 U	5 UJ	2.7 U	2.7 U	0.6 U	5 UJ	2.7 U	0.6 U	5 UJ	2.7 U	2.7 U
Methylcyclohexane	NE	NA	1 U	0.43 U	NA	1 U	0.43 U	0.43 U	NA	1 UJ	0.43 U	NA	1 U	0.43 U	0.43 U
Methylene chloride	5	0.8 U	1 U	0.52 U	0.8 U	1 U	0.52 U	0.52 U	0.8 U	1 UJ	0.52 U	0.8 U	1 U	0.52 U	0.52 U
Styrene	5	0.3 U	1 U	0.48 U	0.3 U	1 U	0.48 U	0.48 U	0.3 U	1 UJ	0.48 UJ	0.3 U	1 U	0.48 U	0.48 U
Tetrachloroethane,1,1,2,2-	5	0.3 U	1 U	0.49 U	0.3 U	1 U	0.49 U	0.49 U	0.3 U	1 UJ	0.49 U	0.3 U	1 U	0.49 U	0.49 U
Tetrachloroethene	5	0.3 U	1 U	0.68 U	<b>3.3</b>	<b>1.3</b>	0.68 U	<b>2.7</b>	0.3 U	1 UJ	0.68 U	0.3 U	1 U	0.68 U	0.68 U
Trans-1,2-dichloroethene	5	0.2 U	1 U	0.57 U	0.2 U	1 U	<b>1.0 J</b>	0.57 U	0.2 U	1 UJ	0.57 U	0.2 U	1 U	0.57 U	0.57 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	NA	1 UJ	0.35 U	NA	1 UJ	0.35 U	0.35 U	NA	1 UJ	0.35 U	NA	1 UJ	0.35 U	0.35 U
Trichlorobenzene,1,2,4-	5	0.6 U	1 U	0.41 U	0.5 U	1 U	0.41 U	0.41 U	0.5 U	1 UJ	0.41 U	0.5 U	1 U	0.41 U	0.41 U
Trichloroethane,1,1,1-	5	0.2 U	1 U	0.46 U	0.2 U	1 U	0.46 U	0.46 U	0.2 U	1 UJ	0.46 U	0.2 U	1 U	0.46 U	0.46 U
Trichloroethene,1,1,2-	1	0.3 U	1 U	0.52 U	0.3 U	1 U	0.52 U	0.52 U	0.3 U	1 UJ	0.52 U	0.3 U	1 U	0.52 U	0.52 U
Trichloroethene	5	0.2 U	1 U	0.56 U	<b>2.6</b>	<b>3</b>	<b>3.9</b>	<b>4.1</b>	0.2 U	1 U	0.56 U	0.2 U	1 U	0.56 U	0.56 U
Trichlorofluoromethane	NE	NA	1 U	0.40 U	NA	1 U	0.40 U	0.40 U	NA	1 UJ	0.40 U	NA	1 U	0.40 U	0.40 U
Vinyl chloride	2	0.5 U	1 U	0.46 U	<b>0.5</b>	<b>1.1</b>	0.46 U	0.46 U	0.5 U	1 UJ	0.46 U	0.5 U	1 U	0.46 U	0.46 U
Total VOCs	NE	ND	ND	<b>14</b>	<b>13.8</b>	<b>18.4</b>	<b>24.4</b>	<b>24.2</b>	ND	ND	ND	ND	ND	ND	ND
<b>Noncarcinogenic PAHs (ug/L)</b>															
Methylnaphthalene,2-	NE	0.5 U	10 U	0.410 U	0.5 U	10 U	0.400 U	0.420 U	0.5 U	10 U	1.8 U	0.5 U	12 U	0.380 U	1.8 U
Acenaphthene	20*	0.1 U	10 U	0.014 U	0.1 U	10 U	0.013 U	0.014 U	0.1 U	10 U	0.013 U	0.1 U	12 U	0.013 U	0.013 U
Acenaphthylene	NE	0.074 U	10 U	0.014 UJ	0.070 U	10 U	0.013 UJ	0.014 UJ	0.070 U	10 U	0.013 U	0.070 U	12 U	<b>0.020 J</b>	0.013 U
Anthracene	50*	0.085 U	10 U	0.013 U	0.080 U	10 U	0.012 U	0.013 U	0.080 U	10 U	0.012 U	0.080 U	12 U	<b>0.020 J</b>	<b>0.020 J</b>
Benzo[g,h,i]perylene	NE	0.064 U	10 UJ	0.009 U	0.060 U	10 UJ	0.008 U	0.009 U	0.060 U	10 U	0.008 U	0.060 U	12 U	0.008 U	0.008 U
Fluoranthene	50*	0.053 U	10 U	<b>0.022 J</b>	0.050 U	10 U	<b>0.020 J</b>	0.009 UJ	0.050 U	10 U	<b>0.031 J</b>	0.050 U	12 U	0.008 U	<b>0.041 J</b>
Fluorene	50*	0.1 UJ	10 U	0.110 U	0.1 UJ	10 U	0.100 UJ	0.110 UJ	0.1 U	10 U	0.100 U	0.1 U	12 U	0.100 U	0.100 U
Naphthalene	10*	0.042 U	10 U	0.017 U	0.040 U	10 U	0.016 U	0.018 U	<b>0.3</b>	10 U	0.016 U	<b>0.2</b>	12 U	0.016 U	0.016 U
Phenanthrene	50*	0.1 U	10 U	<b>0.033 J</b>	0.1 U	10 U	<b>0.040 J</b>	0.014 UJ	<b>0.3</b>	10 U	0.013 U	0.1 U	12 U	0.013 U	0.013 U
Pyrene	50*	0.074 U	10 U	0.012 U	0.070 U	10 U	0.011 U	0.012 U	0.070 U	10 U	<b>0.031 J</b>	0.070 U	12 U	<b>0.020 J</b>	<b>0.031 J</b>
Total Noncarcinogenic PAHs	NE	ND	ND		ND	ND			<b>0.6</b>	ND		<b>0.2</b>	ND		
<b>Carcinogenic PAHs (ug/L)</b>															
Benz[a]anthracene	0.002*	0.2 U	10 U	0.013 U	0.2 U	10 U	<b>0.020 J</b>	0.013 UJ	0.2 U	10 U	0.012 U	0.2 U	12 U	0.012 U	0.012 U
Benzo[a]pyrene	NE	0.085 U	10 U	0.010 U	0.080 U	10 U	0.009 U	0.010 U	0.080 U	10 U	0.009 U	0.080 U	12 U	0.009 U	0.009 U
Benzo[b]fluoranthene	0.002*	0.2 U	10 U	0.010 U	0.2 U	10 U	0.009 U	0.010 U	0.2 U	10 U	0.009 U	0.2 U	12 U	0.009 U	0.009 U
Benzo[k]fluoranthene	0.002*	0.2 U	10 U	0.015 U	0.2 U	10 U	0.014 U	0.015 U	0.2 U	10 U	0.014 U	0.2 U	12 U	0.014 U	0.014 U
Chrysene	0.002*	0.074 U	10 U	0.020 U	0.070 U	10 U	0.018 U	0.020 U	0.070 U	10 U	0.019 U	0.070 U	12 U	0.018 U	0.018 U
Dibenz[a,h]anthracene	NE	0.042 U	10 U	0.010 U	0.040 U	10 U	0.009 U	0.010 U	0.040 U	10 U	0.009 U	0.040 U	12 U	0.009 U	0.009 U
Indeno[1,2,3-cd]pyrene	0.002*	0.085 U	10 U	0.013 U	0.080 U	10 U	0.012 U	0.013 U	0.080 U	10 UJ	0.012 U	0.080 U	12 UJ	0.012 U	0.012 U
Total Carcinogenic PAHs	NE	ND	ND	0	ND	ND	<b>0.002</b>	0	ND	ND	0	ND	ND	0	0
<b>Total PAHs (ug/L)</b>															
Total PAHs	NE	ND	ND	<b>0.055</b>	ND	ND	<b>0.08</b>	ND	<b>0.6</b>	ND	<b>0.062</b>	<b>0.2</b>	ND	<b>0.06</b>	<b>0.092</b>

**NOTES:**  
 Blue indicates a detected result value that does not exceed the AWQSGV for groundwater.  
 Red and bold indicates a detected groundwater result exceeding the AWQSGV.  
 Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-8  
Background Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location Screened Interval (ft bgs): Sample Date: Investigation Conducted by:	NYSDCE AWQSGVs	00MWS06 7.2-17.2 4/19/2004 H&A	00MWS06 7.2-17.2 6/7/2006 GEI	00MWS06 7.2-71.2 8/19/2008 AECOM	00MWD06 22-32 4/19/2004 H&A	00MWD06 22-32 6/7/2008 GEI	00MWD06 22-32 8/19/2008 AECOM	00MWD06 DUP 22-32 8/19/2008 AECOM	00MWS07 15-25 4/16/2004 H&A	00MWS07 15-25 6/9/2006 GEI	00MWS07 15-25 9/29/2008 AECOM	00MWD07 30.6-40.6 4/16/2004 H&A	00MWD07 30.6-40.6 6/9/2006 GEI	00MWD07 30.6-40.6 9/29/2008 AECOM	00MWD07 DUP 30.6-40.6 9/29/2008 AECOM
<b>Other SVOCs (ug/L)</b>															
Acetophenone	NE	NA	10 U	0.410 U	NA	10 U	0.400 U	0.420 U	NA	10 U	1.8 U	NA	12 U	0.380 U	1.8 U
Atrazine	NE	NA	10 U	0.410 U	NA	10 U	0.400 U	0.420 U	NA	10 U	1.8 U	NA	12 U	0.380 U	1.8 U
Benzaldehyde	NE	NA	10 UJ	0.300 R	NA	10 UJ	0.290 R	0.310 R	NA	10 UJ	1.4 U	NA	12 UJ	0.280 U	1.4 U
Biphenyl,1,1-	NE	NA	10 U	0.360 U	NA	10 U	0.350 U	0.380 U	NA	10 U	1.6 U	NA	12 U	0.330 U	1.6 U
Bis(2-chloroethoxy)methane	NE	0.3 U	10 U	0.370 U	0.3 U	10 U	0.360 U	0.380 U	0.3 U	10 U	1.6 U	0.3 U	12 U	0.340 U	1.6 U
Bis(2-chloroethyl)ether	1	0.8 U	10 U	0.310 U	0.8 U	10 U	0.300 U	0.320 U	0.8 U	10 U	1.4 U	0.8 U	12 U	0.290 U	1.4 U
Bis(2-ethylhexyl)phthalate	5	0.6 U	10 U	1.4 U	0.6 U	10 U	1.4 U	1.5 U	0.8	10 U	6.5 U	0.6 U	12 U	1.3 U	6.5 U
Bis(chloroisopropyl)ether	NE	0.5 UJ	10 U	0.300 U	0.5 UJ	10 U	0.290 U	0.310 U	0.5 U	10 U	1.4 U	0.5 U	12 U	0.280 U	1.4 U
Bromophenyl phenyl ether,4-	NE	0.2 U	10 U	1.6 U	0.2 U	10 U	1.5 U	1.6 U	0.2 U	10 U	7.0 U	0.2 U	12 U	1.4 U	7.0 U
Butyl benzyl phthalate	50*	0.4 U	10 U	0.470 U	0.4 U	10 U	0.460 U	0.480 U	0.4 U	10 U	2.1 U	0.4 U	12 U	0.430 U	2.1 U
Caprolactam	NE	NA	10 U	1.6 U	NA	10 U	1.6 U	1.7 U	NA	10 U	7.4 U	NA	12 U	1.5 U	7.4 U
Carbazole	NE	0.085 U	10 U	0.270 U	0.080 U	10 U	0.260 U	0.270 U	0.080 U	10 U	1.2 U	0.080 U	12 UJ	0.240 U	1.2 U
Chloro-3-methylphenol,4-	NE	0.7 U	10 U	0.240 U	0.7 U	10 U	0.240 U	0.250 U	0.7 U	10 U	1.1 U	0.7 U	12 U	0.220 U	1.1 U
Chloroaniline,4-	5	0.8 U	10 U	1.0 U	0.7 U	10 U	1.0 U	1.0 U	0.7 U	10 U	4.6 U	0.7 U	12 U	0.940 U	4.6 U
Chloronaphthalene,2-	NE	0.6 U	10 U	0.260 U	0.6 U	10 U	0.250 U	0.260 U	0.6 U	10 U	1.2 U	0.6 U	12 U	0.230 U	1.2 U
Chlorophenol,2-	NE	0.9 U	10 U	0.370 U	0.8 U	10 U	0.360 U	0.380 U	0.8 U	10 U	1.6 U	0.8 U	12 U	0.340 U	1.6 U
Chlorophenyl phenyl ether,4-	NE	0.4 U	10 U	0.320 U	0.4 U	10 U	0.320 U	0.330 U	0.4 U	10 U	1.4 U	0.4 U	12 U	0.300 U	1.4 U
Dibenzofuran	NE	0.4 U	10 U	0.340 U	0.3 U	10 U	0.340 U	0.350 U	0.3 U	10 U	1.6 U	0.3 U	12 U	0.320 U	1.6 U
Dichlorobenzene,1,2-	3	0.5 U	1 U	0.48 U	0.5 U	1 U	0.48 U	0.48 U	0.5 U	1 UJ	0.48 U	0.5 U	1 U	0.48 U	0.48 U
Dichlorobenzene,1,3-	3	0.7 U	1 U	0.45 U	0.7 U	1 U	0.45 U	0.45 U	0.7 U	1 UJ	0.45 U	0.7 U	1 U	0.45 U	0.45 U
Dichlorobenzene,1,4-	3	0.7 U	1 U	0.43 U	0.6 U	1 U	0.43 U	0.43 U	0.6 U	1 UJ	0.43 U	0.6 U	1 U	0.43 U	0.43 U
Dichlorobenzidine,3,3'-	NE	2.3 U	10 U	1.2 U	2.2 U	10 U	1.2 U	1.2 U	2.2 U	10 U	5.4 U	2.2 U	12 U	1.1 U	5.4 U
Dichlorophenol,2,4-	5	1.5 U	10 U	0.380 U	1.4 U	10 U	0.370 U	0.390 U	1.4 U	10 U	1.7 U	1.4 U	12 U	0.350 U	1.7 U
Diethyl phthalate	50*	0.3 U	10 U	0.360 U	0.2 U	10 U	0.350 U	0.360 U	0.2 U	10 U	1.6 U	0.2 U	12 U	0.330 U	1.6 U
Dimethyl phthalate	50*	0.4 U	10 UJ	0.300 U	0.4 U	10 UJ	0.290 U	0.310 U	0.4 U	10 UJ	1.4 U	0.4 U	12 UJ	0.280 U	1.4 U
Dimethylphenol, 2,4-	50*	0.9 U	10 U	0.840 U	0.8 U	10 U	0.830 U	0.860 U	0.8 U	10 U	3.8 UJ	0.8 U	12 U	0.780 U	3.8 U
Di-n-butyl phthalate	50	0.4 U	10 U	6.5 U	0.4 U	10 U	6.4 U	6.7 U	0.4 U	10 U	29 U	0.4 U	12 U	6.0 U	29 U
Dinitro-2-methylphenol,4,6-	NE	1.5 U	10 U	0.320 U	1.4 U	10 U	0.320 U	0.330 U	1.4 U	10 U	1.4 U	1.4 U	12 U	0.300 U	1.4 U
Dinitrophenol,2,4-	10*	1.0 U	10 U	0.710 U	0.9 U	10 U	0.700 U	0.730 U	0.9 U	10 U	3.2 U	0.9 U	12 U	0.650 U	3.2 U
Dinitrotoluene,2,4-	NE	0.4 U	10 U	0.380 U	0.4 U	10 U	0.370 U	0.390 U	0.4 U	10 U	1.7 U	0.4 U	12 U	0.350 U	1.7 U
Dinitrotoluene,2,6-	5	0.7 U	10 U	0.390 U	0.6 U	10 U	0.380 U	0.400 U	0.6 U	10 U	1.8 U	0.6 U	12 U	0.360 U	1.8 U
Di-n-octyl phthalate	50*	0.3 U	10 U	0.290 U	0.2 U	10 U	0.280 U	0.300 U	0.2 U	10 U	1.3 U	0.2 U	12 U	0.270 U	1.3 U
Hexachlorobenzene	0.04	0.9 U	10 U	0.300 U	0.8 U	10 U	0.290 U	0.310 U	0.8 U	10 U	1.4 U	0.8 U	12 U	0.280 U	1.4 U
Hexachlorobutadiene	0.5	0.5 U	10 U	0.430 U	0.4 U	10 U	0.420 U	0.440 U	0.4 U	10 U	2.0 U	0.4 U	12 U	0.400 U	2.0 U
Hexachlorocyclopentadiene	NE	1.0 U	10 U	0.620 U	0.9 U	10 U	0.610 U	0.640 U	0.9 U	10 U	2.8 U	0.9 U	12 U	0.570 U	2.8 U
Hexachloroethane	NE	0.6 U	10 U	0.260 U	0.6 U	10 U	0.250 U	0.260 U	0.6 U	10 U	1.2 U	0.6 U	12 U	0.230 U	1.2 U
Isophorone	50*	0.4 U	10 U	0.290 U	0.4 U	10 U	0.280 U	0.300 U	0.4 U	10 U	1.3 U	0.4 U	12 U	0.270 U	1.3 U
Methylphenol, 4-	NE	0.6 U	10 U	0.430 U	0.5 U	10 U	0.420 U	0.440 U	0.5 U	10 U	2.0 U	0.5 U	12 U	0.400 U	2.0 U
Methylphenol,2-	NE	0.9 U	10 U	0.400 U	0.8 U	10 U	0.390 U	0.410 U	0.8 U	10 U	1.8 U	0.8 U	12 U	0.370 U	1.8 U
Nitroaniline,2-	5	0.6 U	10 U	0.280 U	0.5 U	10 U	0.270 U	0.280 U	0.5 U	10 U	1.2 U	0.5 U	12 U	0.260 U	1.2 U
Nitroaniline,3-	5	0.6 U	10 U	0.390 U	0.6 U	10 U	0.380 U	0.400 U	0.6 U	10 U	1.8 U	0.6 U	12 U	0.360 U	1.8 U
Nitroaniline,4-	NE	0.4 U	10 U	0.400 U	0.4 U	10 U	0.390 U	0.410 U	0.4 U	10 U	1.8 U	0.4 U	12 U	0.370 U	1.8 U
Nitrobenzene	0.4	0.6 U	10 U	0.370 U	0.6 U	10 U	0.360 U	0.380 U	0.6 U	10 U	1.6 U	0.6 U	12 U	0.340 U	1.6 U
Nitrophenol,2-	NE	1.1 U	10 U	0.310 U	1.0 U	10 U	0.300 U	0.320 U	1.0 U	10 U	1.4 U	1.0 U	12 U	0.290 U	1.4 U
Nitrophenol,4-	NE	0.6 U	10 U	1.9 U	0.6 U	10 U	1.9 U	2.0 U	0.6 U	10 U	8.6 U	0.6 U	12 U	1.8 U	8.6 U
N-Nitrosodi-n-propylamine	NE	0.5 U	10 U	0.380 U	0.4 U	10 U	0.370 U	0.390 U	0.4 U	10 U	1.7 U	0.4 U	12 U	0.350 U	1.7 U
N-Nitrosodiphenylamine	NE	0.2 U	10 U	0.390 U	0.2 U	10 U	0.380 U	0.400 U	0.2 U	10 U	1.8 U	0.2 U	12 U	0.360 U	1.8 U
Pentachlorophenol	NE	3.3 U	10 U	0.580 U	3.1 U	10 U	0.570 U	0.590 U	3.1 U	10 U	2.6 U	3.1 U	12 U	0.530 U	2.6 U
Phenol	NE	0.6 U	10 U	0.610 U	0.5 U	10 U	0.600 U	0.620 U	0.5 U	10 U	2.8 U	0.5 U	12 U	0.560 U	2.8 U
Trichlorophenol,2,4,5-	NE	1.4 U	10 U	0.420 U	1.3 U	10 U	0.410 U	0.430 U	1.3 U	10 U	1.9 U	1.3 U	12 U	0.390 U	1.9 U
Trichlorophenol,2,4,6-	NE	1.0 U	10 U	0.390 U	0.9 U	10 U	0.380 U	0.400 U	0.9 U	10 U	1.8 U	0.9 U	12 U	0.360 U	1.8 U
Total SVOCs	NE	ND	ND	0.055	ND	ND	0.08	ND	1.4	ND	0.062	0.2	ND	0.06	0.092
<b>SVOC TICs (ug/L)</b>															
Total SVOC TICs	NE	NA	39	NA	NA	29	NA	NA	NA	53.3	NA	NA	54	NA	NA
<b>Dissolved Metals (ug/L)</b>															
Aluminum	NE	NA	200 U	NA	NA	200 U	NA	NA	NA	NA	NA	NA	200 U	NA	NA
Antimony	3	NA	60 UJ	NA	NA	60 UJ	NA	NA	NA	NA	NA	NA	60 U	NA	NA
Arsenic	25	NA	10 UJ	NA	NA	10 UJ	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Barium	1000	NA	139 J	NA	NA	103 J	NA	NA	NA	NA	NA	NA	200 UJ	NA	NA
Beryllium	3*	NA	5 U	NA	NA	5 U	NA	NA	NA	NA	NA	NA	5 U	NA	NA
Cadmium	5	NA	5 UJ	NA	NA	5 UJ	NA	NA	NA	NA	NA	NA	5 UJ	NA	NA
Calcium	NE	NA	272000 J	NA	NA	84500 J	NA	NA	NA	NA	NA	NA	67800 J	NA	NA
Chromium	50	NA	0.82 J	NA	NA	1.9 J	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Cobalt	NE	NA	50 UJ	NA	NA	50 UJ	NA	NA	NA	NA	NA	NA	50 UJ	NA	NA
Copper	200	NA	25 UJ	NA	NA	25 UJ	NA	NA	NA	NA	NA	NA	5.44 J	NA	NA
Iron	300	NA	187	NA	NA	305	NA	NA	NA	NA	NA	NA	100 U	NA	NA
Lead	25	NA	5 UJ	NA	NA	5 U	NA	NA	NA	NA	NA	NA	5 UJ	NA	NA
Magnesium	35000*	NA	48700 J	NA	NA	31400 J	NA	NA	NA	NA	NA	NA	27300 J	NA	NA
Manganese	300	NA	977 J	NA	NA	697 J	NA	NA	NA	NA	NA	NA	151	NA	NA
Mercury	0.7	NA	0.2 UJ	NA	NA	0.2 UJ	NA	NA	NA	NA	NA	NA	0.2 U	NA	NA
Nickel	100	NA	40 UJ	NA	NA	40 UJ	NA	NA	NA	NA	NA	NA	40 U	NA	NA
Potassium	NE	NA	87000	NA	NA	30700	NA	NA	NA	NA	NA	NA	8260 J	NA	NA
Selenium	10	NA	10 UJ	NA	NA	10 U	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Silver	50	NA	10 UJ	NA	NA	10 UJ	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Sodium	20000	NA	654000	NA	NA	115000	NA	NA	NA	NA	NA	NA	67300	NA	NA
Thallium	0.5*	NA	10 UJ	NA	NA	10 UJ	NA	NA	NA	NA	NA	NA	10 UJ	NA	NA
Vanadium	NE	NA	50 UJ	NA	NA	50 UJ	NA	NA	NA	NA	NA	NA	50 U	NA	NA
Zinc	2000*	NA	255 J	NA	NA	37.4 J	NA	NA	NA	NA	NA	NA	30.8 J	NA	NA
<b>Total Metals (ug/l)</b>															
Aluminum	NE	62.6 U	200 U	28.3 J	62.6 U	200 U	19.3 U	19.3 U	1050	200 U	19.3 UJ	1290	200 U	711 J-	19.3 UJ
Antimony	3	11.6 U	60 UJ	9.500 U	5.8 U	60 UJ	9.500 U	9.500 U	11.6 U	60 U	9.500 U	5.8 U	60 U	9.500 U	9.500 U
Arsenic	25	3.2 U	10 UJ	5.400 U	3.2 U	3.32 UJ	5.400 U	5.400 U	7.8	10 U	5.400 U	3.2 U	10 U	5.400 U	5.400 U
Barium	1000	137	158 J	35.3 J	96	111 J	125	33.8 J	107	200 U	52.2	60.7	200 U	58.9	49.4 J
Beryllium	3*	0.30 U	5 U	0.300 U	0.30 U	0.09 U	0.300 U	0.300 U	0.30 U	5 U	0.300 U	0.30 U	5 U	0.300 U	0.300 U
Cadmium	5	0.40 U	5 UJ	0.900 U	0.40 U	0.327 UJ	0.900 U	0.900 U	0.40 U	5 UJ	0.900 U	0.40 U	5 UJ	0.900 U	0.900 U
Calcium	NE	39800	281000 J	89700	73500	85700 J	74400	84700	172000	156000 J					

**Table 5-8  
Background Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Summary Statistics												
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (ug/L)</b>												
Benzene	14	3	11	3	0	2	00MWD06-22-32	1.4	00MWD06 DUP-22-32	1.63333333	0.3	1
Toluene	14	0	14	0	0	-	-	-	-	-	0.2	1
Ethylbenzene	14	0	14	0	0	-	-	-	-	-	0.4	1
Xylene, total	14	0	14	0	0	-	-	-	-	-	-	1
Total BTEX	14	3	11	0	0	2	00MWD06-22-32	1.4	00MWD06 DUP-22-32	1.63333333	-	-
<b>Other VOC (ug/L)</b>												
Acetone	14	0	14	0	0	-	-	-	-	-	1	5
Bromodichloromethane	14	0	14	0	0	-	-	-	-	-	0.4	1
Bromoform	14	0	14	0	0	-	-	-	-	-	0.3	1
Bromomethane	14	0	14	0	0	-	-	-	-	-	0.4	1
Butanone, 2-	14	0	14	0	0	-	-	-	-	-	2.5	5
Carbon disulfide	14	0	14	0	0	-	-	-	-	-	0.2	1
Carbon tetrachloride	14	0	14	0	0	-	-	-	-	-	0.2	1
Chlorobenzene	14	0	14	0	0	-	-	-	-	-	0.2	1
Chloroethane	14	0	14	0	0	-	-	-	-	-	0.49	1
Chloroform	14	1	13	1	0	14	00MWS06-7-2-71.2	14	00MWS06-7-2-71.2	14	0.2	1
Chloromethane	14	0	14	0	0	-	-	-	-	-	0.38	1
Cyclohexane	10	0	10	0	0	-	-	-	-	-	0.37	1
Dibromo-3-chloropropane, 1,2-	10	0	10	0	0	-	-	-	-	-	0.45	1
Dibromochloromethane	14	0	14	0	0	-	-	-	-	-	0.2	1
Dibromoethane, 1,2-	10	0	10	0	0	-	-	-	-	-	0.56	1
Dichlorodifluoromethane	10	0	10	0	0	-	-	-	-	-	0.43	1
Dichloroethane, 1,1-	14	0	14	0	0	-	-	-	-	-	0.2	1
Dichloroethane, 1,2-	14	0	14	0	0	-	-	-	-	-	0.3	1
Dichloroethene, cis-1,2-	14	4	10	4	0	18	00MWD06-22-32	5.4	00MWD06-22-32	13.1	0.2	1
Dichloroethene, 1,1-	14	0	14	0	0	-	-	-	-	-	0.4	1
Dichloropropane, 1,2-	14	0	14	0	0	-	-	-	-	-	0.2	1
Dichloropropene, cis-1,3	14	0	14	0	0	-	-	-	-	-	0.2	1
Dichloropropene, trans-1,3	14	0	14	0	0	-	-	-	-	-	0.2	1
Hexanone, 2-	14	0	14	0	0	-	-	-	-	-	1	5
Isopropyl benzene	10	0	10	0	0	-	-	-	-	-	0.44	1
Methyl acetate	10	0	10	0	0	-	-	-	-	-	0.92	1
Methyl tert-butyl ether	10	0	10	0	0	-	-	-	-	-	0.5	1
Methyl-2-pentanone, 4-	14	0	14	0	0	-	-	-	-	-	0.6	5
Methylcyclohexane	10	0	10	0	0	-	-	-	-	-	0.43	1
Methylene chloride	14	0	14	0	0	-	-	-	-	-	0.52	1
Styrene	14	0	14	0	0	-	-	-	-	-	0.3	1
Tetrachloroethane, 1,1,2,2-	14	0	14	0	0	-	-	-	-	-	0.3	1
Tetrachloroethene	14	3	11	0	0	3.3	00MWD06-22-32	1.3	00MWD06-22-32	2.43333333	0.3	1
Trans-1,2-dichloroethene	14	1	13	0	0	1	00MWD06-22-32	1	00MWD06-22-32	1	0.2	1
Trichloro-1,2,2-trifluoroethane, 1,1,2-	10	0	10	0	0	-	-	-	-	-	0.35	1
Trichlorobenzene, 1,2,4-	14	0	14	0	0	-	-	-	-	-	0.41	1
Trichloroethane, 1,1,1-	14	0	14	0	0	-	-	-	-	-	0.2	1
Trichloroethane, 1,1,2-	14	0	14	0	0	-	-	-	-	-	0.3	1
Trichloroethene	14	4	10	0	0	4.1	00MWD06 DUP-22-32	2.6	00MWD06-22-32	3.4	0.2	1
Trichlorofluoromethane	10	0	10	0	0	-	-	-	-	-	0.4	1
Vinyl chloride	14	2	12	0	0	1.1	00MWD06-22-32	0.5	00MWD06-22-32	0.8	0.46	1
Total VOCs	14	5	9	0	0	24.4	00MWD06-22-32	13.8	00MWD06-22-32	18.96	-	-
<b>Noncarcinogenic PAHs (ug/L)</b>												
Methylnaphthalene, 2-	14	0	14	0	0	-	-	-	-	-	0.38	12
Acenaphthene	14	0	14	0	0	-	-	-	-	-	0.013	12
Acenaphthylene	14	1	13	0	0	0.02	00MWD07-30.6-40.6	0.02	00MWD07-30.6-40.6	0.02	0.013	12
Anthracene	14	2	12	0	0	0.02	00MWD07 DUP-30.6-40.6	0.02	00MWD07 DUP-30.6-40.6	0.02	0.012	12
Benzo[g,h,i]perylene	14	0	14	0	0	-	-	-	-	-	0.008	12
Fluoranthene	14	4	10	0	0	0.041	00MWD07 DUP-30.6-40.6	0.02	00MWD06-22-32	0.0285	0.008	12
Fluorene	14	0	14	0	0	-	-	-	-	-	0.1	12
Naphthalene	14	2	12	0	0	0.3	00MWS07-15-25	0.2	00MWD07-30.6-40.6	0.25	0.016	12
Phenanthrene	14	3	11	0	0	0.3	00MWS07-15-25	0.033	00MWS06-7-2-71.2	0.12433333	0.013	12
Pyrene	14	3	11	0	0	0.031	00MWD07 DUP-30.6-40.6	0.02	00MWD07-30.6-40.6	0.02733333	0.011	12
Total Noncarcinogenic PAHs	8	2	6	0	0	0.6	00MWS07-15-25	0.2	00MWD07-30.6-40.6	0.4	-	-
<b>Carcinogenic PAHs (ug/L)</b>												
Benzo[a]anthracene	14	1	13	1	0	0.02	00MWD06-22-32	0.02	00MWD06-22-32	0.02	0.012	12
Benzo[a]pyrene	14	0	14	0	0	-	-	-	-	-	0.009	12
Benzo[b]fluoranthene	14	0	14	0	0	-	-	-	-	-	0.009	12
Benzo[k]fluoranthene	14	0	14	0	0	-	-	-	-	-	0.014	12
Chrysene	14	0	14	0	0	-	-	-	-	-	0.018	12
Dibenzo[a,h]anthracene	14	0	14	0	0	-	-	-	-	-	0.009	12
Indeno[1,2,3-cd]pyrene	14	0	14	0	0	-	-	-	-	-	0.012	12
Total Carcinogenic PAHs	14	6	8	0	0	0.002	00MWD06-22-32	-	00MWD07 DUP-30.6-40.6	0.00033333	-	-
<b>Total PAHs (ug/L)</b>												
Total PAHs	14	7	7	0	0	0.6	00MWS07-15-25	0.055	00MWS06-7-2-71.2	0.164142857	-	-

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Stuyvesant Town Remedial Investigation Report  
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Summary Statistics												
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected	Min DL for Non-Detects	Max DL for Non-Detects
<b>Other SVOCs (ug/L)</b>												
Acetophenone	10	0	10	0	0	-	-	-	-	-	0.38	12
Atrazine	10	0	10	0	0	-	-	-	-	-	0.38	12
Benzaldehyde	10	0	10	0	0	-	-	-	-	-	0.28	12
Biphenyl,1,1-	10	0	10	0	0	-	-	-	-	-	0.33	12
Bis(2-chloroethoxy)methane	14	0	14	0	0	-	-	-	-	-	0.3	12
Bis(2-chloroethyl)ether	14	0	14	0	0	-	-	-	-	-	0.29	12
Bis(2-ethylhexyl)phthalate	14	1	13	0	0	0.8	00MWS07-15-25	0.8	00MWS07-15-25	0.8	0.6	12
Bis(chloroisopropyl)ether	14	0	14	0	0	-	-	-	-	-	0.28	12
Bromophenyl phenyl ether,4-	14	0	14	0	0	-	-	-	-	-	0.2	12
Butyl benzyl phthalate	14	0	14	0	0	-	-	-	-	-	0.4	12
Caprolactam	10	0	10	0	0	-	-	-	-	-	1.5	12
Carbazole	14	0	14	0	0	-	-	-	-	-	0.08	12
Chloro-3-methylphenol,4-	14	0	14	0	0	-	-	-	-	-	0.22	12
Chloroaniline,4-	14	0	14	0	0	-	-	-	-	-	0.7	12
Chloronaphthalene,2-	14	0	14	0	0	-	-	-	-	-	0.23	12
Chlorophenol,2-	14	0	14	0	0	-	-	-	-	-	0.34	12
Chlorophenyl phenyl ether,4-	14	0	14	0	0	-	-	-	-	-	0.3	12
Dibenzofuran	14	0	14	0	0	-	-	-	-	-	0.3	12
Dichlorobenzene,1,2-	14	0	14	0	0	-	-	-	-	-	0.48	1
Dichlorobenzene,1,3-	14	0	14	0	0	-	-	-	-	-	0.45	1
Dichlorobenzene,1,4-	14	0	14	0	0	-	-	-	-	-	0.43	1
Dichlorobenzidine,3,3'-	14	0	14	0	0	-	-	-	-	-	1.1	12
Dichlorophenol,2,4-	14	0	14	0	0	-	-	-	-	-	0.35	12
Diethyl phthalate	14	0	14	0	0	-	-	-	-	-	0.2	12
Dimethyl phthalate	14	0	14	0	0	-	-	-	-	-	0.28	12
Dimethylphenol, 2,4-	14	0	14	0	0	-	-	-	-	-	0.78	12
Di-n-butyl phthalate	14	0	14	0	0	-	-	-	-	-	0.4	29
Dinitro-2-methylphenol,4,6-	14	0	14	0	0	-	-	-	-	-	0.3	12
Dinitrophenol,2,4-	14	0	14	0	0	-	-	-	-	-	0.65	12
Dinitrotoluene,2,4-	14	0	14	0	0	-	-	-	-	-	0.35	12
Dinitrotoluene,2,6-	14	0	14	0	0	-	-	-	-	-	0.36	12
Di-n-octyl phthalate	14	0	14	0	0	-	-	-	-	-	0.2	12
Hexachlorobenzene	14	0	14	0	0	-	-	-	-	-	0.28	12
Hexachlorobutadiene	14	0	14	0	0	-	-	-	-	-	0.4	12
Hexachlorocyclopentadiene	14	0	14	0	0	-	-	-	-	-	0.57	12
Hexachloroethane	14	0	14	0	0	-	-	-	-	-	0.23	12
Isophorone	14	0	14	0	0	-	-	-	-	-	0.27	12
Methylphenol, 4-	14	0	14	0	0	-	-	-	-	-	0.4	12
Methylphenol,2-	14	0	14	0	0	-	-	-	-	-	0.37	12
Nitroaniline,2-	14	0	14	0	0	-	-	-	-	-	0.26	12
Nitroaniline,3-	14	0	14	0	0	-	-	-	-	-	0.36	12
Nitroaniline,4-	14	0	14	0	0	-	-	-	-	-	0.37	12
Nitrobenzene	14	0	14	0	0	-	-	-	-	-	0.34	12
Nitrophenol,2-	14	0	14	0	0	-	-	-	-	-	0.29	12
Nitrophenol,4-	14	0	14	0	0	-	-	-	-	-	0.6	12
N-Nitrosodi-n-propylamine	14	0	14	0	0	-	-	-	-	-	0.35	12
N-Nitrosodiphenylamine	14	0	14	0	0	-	-	-	-	-	0.2	12
Pentachlorophenol	14	0	14	0	0	-	-	-	-	-	0.53	12
Phenol	14	0	14	0	0	-	-	-	-	-	0.5	12
Trichlorophenol,2,4,5-	14	0	14	0	0	-	-	-	-	-	0.39	12
Trichlorophenol,2,4,6-	14	0	14	0	0	-	-	-	-	-	0.36	12
Total SVOCs	14	7	7	0	0	1.4	00MWS07-15-25	0.055	00MWS06-7-2-71.2	0.278428571	-	-
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	4	4	0	0	0	54	00MWD07-30.6-40.6	29	00MWD06-22-32	43.825	-	-
<b>Dissolved Metals (ug/L)</b>												
Aluminum	3	0	3	0	0	-	-	-	-	-	200	200
Antimony	3	0	3	0	0	-	-	-	-	-	60	60
Arsenic	3	0	3	0	0	-	-	-	-	-	10	10
Barium	3	2	1	0	0	139	00MWS06-7-2-17.2	103	00MWD06-22-32	121	200	200
Beryllium	3	0	3	0	0	-	-	-	-	-	5	5
Cadmium	3	0	3	0	0	-	-	-	-	-	5	5
Calcium	3	3	0	0	0	272000	00MWS06-7-2-17.2	67800	00MWD07-30.6-40.6	141433.3333	-	-
Chromium	3	2	1	0	0	1.9	00MWD06-22-32	0.82	00MWS06-7-2-17.2	1.36	10	10
Cobalt	3	0	3	0	0	-	-	-	-	-	50	50
Copper	3	1	2	0	0	5.44	00MWD07-30.6-40.6	5.44	00MWD07-30.6-40.6	5.44	25	25
Iron	3	2	1	1	0	305	00MWD06-22-32	187	00MWS06-7-2-17.2	246	100	100
Lead	3	0	3	0	0	-	-	-	-	-	5	5
Magnesium	3	3	0	1	0	48700	00MWS06-7-2-17.2	27300	00MWD07-30.6-40.6	35800	-	-
Manganese	3	3	0	1	0	977	00MWS06-7-2-17.2	69.7	00MWD06-22-32	399.2333333	-	-
Mercury	3	0	3	0	0	-	-	-	-	-	0.2	0.2
Nickel	3	0	3	0	0	-	-	-	-	-	40	40
Potassium	3	3	0	0	0	87000	00MWS06-7-2-17.2	8260	00MWD07-30.6-40.6	41986.66667	-	-
Selenium	3	0	3	0	0	-	-	-	-	-	10	10
Silver	3	0	3	0	0	-	-	-	-	-	10	10
Sodium	3	3	0	3	0	664000	00MWS06-7-2-17.2	67300	00MWD07-30.6-40.6	278766.6667	-	-
Thallium	3	0	3	0	0	-	-	-	-	-	10	10
Vanadium	3	0	3	0	0	-	-	-	-	-	50	50
Zinc	3	3	0	0	0	255	00MWS06-7-2-17.2	30.8	00MWD07-30.6-40.6	107.7333333	-	-
<b>Total Metals (ug/L)</b>												
Aluminum	14	4	10	0	0	1290	00MWD07-30.6-40.6	28.3	00MWS06-7-2-71.2	769.825	19.3	200
Antimony	14	0	14	0	0	-	-	-	-	-	5.8	60
Arsenic	14	1	13	0	0	7.8	00MWS07-15-25	7.8	00MWS07-15-25	7.8	3.2	10
Barium	14	12	2	0	0	158	00MWS06-7-2-17.2	33.8	00MWD06 DUP-22-32	85.35833333	200	200
Beryllium	14	0	14	0	0	-	-	-	-	-	0.09	5
Cadmium	14	0	14	0	0	-	-	-	-	-	0.327	5
Calcium	14	14	0	0	0	281000	00MWS06-7-2-17.2	39800	00MWS06-7-2-17.2	110485.7143	-	-
Chromium	14	2	12	0	0	12.1	00MWS06-7-2-17.2	2.4	00MWS07-15-25	7.25	1.4	10
Cobalt	14	0	14	0	0	-	-	-	-	-	0.37	50
Copper	14	5	9	0	0	7.62	00MWD07-30.6-40.6	3.89	00MWD07-30.6-40.6	5.574	3.64	25
Iron	14	14	0	13	0	11700	00MWS07-15-25	137	00MWD07-30.6-40.6	1766.5	-	-
Lead	14	6	8	0	0	6.86	00MWD07-30.6-40.6	3.18	00MWD06 DUP-22-32	4.631666667	2.18	5
Magnesium	14	14	0	2	0	58300	00MWS06-7-2-17.2	3370	00MWS06-7-2-71.2	27780.71429	-	-
Manganese	14	14	0	8	0	1610	00MWS07-15-25	69.3	00MWD06-22-32	535.4214286	-	-
Mercury	14	1	13	0	0	0.08	00MWD06 DUP-22-32	0.08	00MWD06 DUP-22-32	0.08	0.06	0.2
Nickel	14	4	10	0	0	4.18	00MWS06-7-2-17.2	2.4	00MWD07-30.6-40.6	3.135	2.6	40
Potassium	14	13	1	0	0	89400	00MWS06-7-2-17.2	4680	00MWD06 DUP-22-32	25467.69231	4270	4270
Selenium	14	3	11	0	0	5.89	00MWD07 DUP-30.6-40.6	4.5	00MWD07-30.6-40.6	5.013333333	3.04	10
Silver	14	0	14	0	0	-	-	-	-	-	1.4	10
Sodium	14	14	0	12	0	678000	00MWS06-7-2-17.2	16400	00MWD06 DUP-22-32	102814.2857	-	-
Thallium	14	0	14	0	0	-	-	-	-	-	3.05	10
Vanadium	14	1	13	0	0	10	00MWD07-30.6-40.6	10	00MWD07-30.6-40.6	10	0.701	50
Zinc	14	11	3	0	0	364	00MWS06-7-2-17.2	5.43	00MWS07-15-25	79.50272727	5.8	20
<b>Other (mg/L)</b>												
Cyanide, Amenable	10	0	10	0	0	-	-	-	-	-	0.01	10
Cyanide, Total	14	4	10	0	0	19	00MWS07-15-25	0.013	00MWS07-15-25	7.2575	0.01	10
Fluoride	4	2	2	0	0	0.31	00MWS06-7-2-17.2	0.2	00MWD06-22-32	0.255	0.1	0.1
Chloride	4	4	0	0	0	862	00MWS06-7-2-17.2	67.5	00MWS07-15-25	292.6	-	-
Sulfate	4	4	0	0	0	211	00MWS06-7-2-17.2	68.7	00MWD06-22-32	127.925	-	-
Sulfide	4	0	4	0	0	-	-	-	-	-	1	1
Nitrogen, Ammonia	4	3	1	0	0	4.4	00MWS06-7-2-17.2	1.7	00MWD06-22-32	2.766666667	0.1	0.1
Nitrogen, Nitrate	4	2	2	0	0	2.7	00MWS06-7-2-17.2	0.7	00MWD06-22-32	1.7	0.1	0.1

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		MW-10	MW-10	MW-36	MW-36	14MWS01	14MWS01	14MWS01	14MWD01	14MWD01	14MWD01
Screened Interval (ft bgs):	NYSDEC AWQSGVs	5-15	5-15	5-15	5-15	7-17	7-17	7-17	22-32	22-32	22-32
Date Collected:		6/8/2006	8/21/2008	6/8/2006	9/26/2008	4/16/2004	6/6/2006	8/21/2008	4/16/2004	6/6/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM	GEI	AECOM	H&A	GEI	AECOM	H&A	GEI	AECOM
<b>BTEX (ug/L)</b>											
Benzene	1	1 UJ	0.52 U	1 U	0.52 U	3.7	5.7	10	320	3800	13000
Toluene	5	1 UJ	0.51 U	1 U	0.51 U	0.2 U	1 U	0.51 U	0.3 U	1.7 J	6
Ethylbenzene	5	1 UJ	0.50 U	1 U	0.50 U	0.4 U	1 J	0.50 U	3	39	220
m/p-Xylenes	NE	NR	0.97 U	NR	0.97 U	NR	NR	0.97 U	NR	NR	150
o-Xylenes	NE	NR	0.51 U	NR	0.51 U	NR	NR	0.51 U	NR	NR	22
Xylene, total	5	0.4 J	ND	1 U	ND	0.2 U	1.26 J	ND	16	45.1 J	172
Total BTEX	NE	0.4	ND	ND	ND	3.7	7.96	10	339	3885.8	13398
<b>Other VOCs (ug/L)</b>											
Acetone	50	NR	2.7 U	NR	2.7 U	NR	NR	2.7 U	NR	NR	2.7 U
Carbon disulfide	NE	1 UJ	0.51 U	1 U	0.51 U	0.2 U	1 U	0.51 U	0.5 U	1 UJ	0.51 U
Chloroform	7	1 UJ	0.46 U	1 U	0.46 U	0.2 U	1 U	0.46 U	0.4 U	1 UJ	0.46 U
Cyclohexane	NE	1 UJ	0.37 U	1 U	0.37 U	NA	1 U	0.37 U	NA	2.8 J	0.37 U
Isopropyl benzene	5	1 UJ	0.44 U	1 U	0.44 U	NA	1 U	0.44 U	NA	6.3 J	17
Methyl tert-butyl ether	NE	1 UJ	0.50 U	0.45 J	0.59 J	NA	1 U	0.50 U	NA	2.7 J	13
Methylcyclohexane	NE	1 UJ	0.43 U	1 U	0.43 U	NA	1 U	0.43 U	NA	1 UJ	0.43 U
Styrene	5	1 UJ	0.48 U	1 U	0.48 U	0.3 U	1 U	0.48 U	0.6 U	1 UJ	0.48 U
Total VOCs	NE	0.4	ND	0.45	0.59	3.7	7.96	10	339	3897.6	13428
<b>VOC TICs (ug/L)</b>											
Total VOC TICs	NE	NA	NA	2.8	NA	NA	9.8	NA	288.6	37.4	NA
<b>Noncarcinogenic PAHs (ug/L)</b>											
Acenaphthene	20*	10 U	1.6 J	15	17	0.1 U	10 U	0.120 J	45	81	120
Acenaphthylene	NE	10 U	0.014 UJ	10 U	0.86	0.070 U	10 U	0.014 UJ	0.070 U	10 U	3.0 J
Anthracene	50*	10 U	0.013 U	10 U	2.1	0.080 U	10 U	0.042 J	7.9	12	18
Benzo[g,h,i]perylene	NE	NR	0.009 U	NR	0.300 J	NR	NR	0.008 U	NR	NR	0.021 J
Fluoranthene	50*	10 U	0.15	5.6 J	6.2	0.050 U	10 U	0.021 J	3.5	7.9 J	12
Fluorene	50*	10 U	0.110 UJ	3.1 J	5.9	0.1 U	10 U	0.110 UJ	50	70	120
Methylnaphthalene,2-	NE	10 U	0.390 U	10 U	1.9 U	0.5 U	10 U	0.400 U	0.5 U	10 U	2.0 U
Naphthalene	10*	10 U	0.017 UJ	1.6 J	0.56	0.040 U	4.2 J	0.017 UJ	67	830	0.016 UJ
Phenanthrene	50*	10 U	0.014 UJ	10 U	0.350 J	0.4	10 U	0.032 J	51	56	110
Pyrene	50*	10 UJ	0.14	4.8 J	4.3	0.070 U	10 U	0.042 J	1.7	4.1 J	9
Total Noncarcinogenic PAHs	NE	ND	1.89	30.1	37.57	0.4	4.2	0.257	226.1	1061	392.021
<b>Carcinogenic PAHs (ug/L)</b>											
Benz[a]anthracene	0.002*	10 UJ	0.013 UJ	1.5 J	0.86	0.2 U	10 U	0.013 UJ	0.2 U	10 U	0.012 UJ
Benzo[a]pyrene	NE	NR	0.010 U	NR	0.71	NR	NR	0.010 U	NR	NR	0.021 J
Benzo[b]fluoranthene	0.002	NR	0.010 U	NR	0.91	NR	NR	0.010 U	NR	NR	0.031 J
Benzo[k]fluoranthene	0.002	NR	0.015 U	NR	0.300 J	NR	NR	0.015 U	NR	NR	0.021 J
Chrysene	0.002	NR	0.020 U	NR	0.66	NR	NR	0.019 U	NR	NR	0.019 U
Indeno[1,2,3-cd]pyrene	0.002	NR	0.013 U	NR	0.250 J	NR	NR	0.013 U	NR	NR	0.031 J
Total Carcinogenic PAHs	NE	ND	0	1.5	0.91566	ND	ND	0	ND	ND	0.02741
<b>Total PAHs (ug/L)</b>											
Total PAHs	NE	ND	1.89	31.6	41.26	0.4	4.2	0.257	226.1	1061	392.125
<b>Other SVOCs (ug/L)</b>											
Biphenyl,1,1-	NE	10 U	0.340 U	10 U	1.6 U	NA	10 U	0.340 U	NA	10 U	1.8 U
Bis(2-ethylhexyl)phthalate	5	2.1 J	1.4 U	10 U	6.6 U	0.6 U	10 U	1.4 U	0.6 U	10 U	7.1 U
Carbazole	NE	10 UJ	0.250 U	10 UJ	1.2 U	0.080 U	10 U	0.260 U	0.080 U	32	65
Dibenzofuran	NE	10 U	0.330 U	10 U	1.6 U	0.3 U	10 U	0.330 U	17	51	46 J
Dimethylphenol, 2,4-	50*	10 U	0.800 U	10 U	3.9 U	0.8 U	10 U	0.820 U	0.8 U	38	73
Methylphenol, 4-	NE	10 U	0.410 U	10 U	2.0 U	0.5 U	10 U	0.420 U	0.5 U	10 U	2.1 U
Methylphenol,2-	NE	10 U	0.380 U	10 U	1.8 U	0.8 U	10 U	0.390 U	0.8 U	10 U	2.0 U
Phenol	NE	10 U	0.580 U	10 U	2.8 U	0.5 U	10 U	0.590 UJ	2.4	7.6 J	79
Total SVOCs	NE	2.1	1.89	31.6	41.26	0.4	4.2	0.257	245.5	1189.6	655.125
<b>SVOC TICs (ug/L)</b>											
Total SVOC TICs	NE	68.1	NA	57.5	NA	NA	28.8	NA	348.1	249.8	NA

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		MW-10	MW-10	MW-36	MW-36	14MWS01	14MWS01	14MWS01	14MWD01	14MWD01	14MWD01
Screened Interval (ft bgs):	NYSDEC AWQSGVs	5-15	5-15	5-15	5-15	7-17	7-17	7-17	22-32	22-32	22-32
Date Collected:		6/8/2006	8/21/2008	6/8/2006	9/26/2008	4/16/2004	6/6/2006	8/21/2008	4/16/2004	6/6/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM	GEI	AECOM	H&A	GEI	AECOM	H&A	GEI	AECOM
<b>Disolved Metals (ug/L)</b>											
Arsenic	25	NA	NA	10 U	NA	NA	NA	NA	NA	10 UJ	NA
Barium	1000	NA	NA	269 J	NA	NA	NA	NA	NA	111 J	NA
Beryllium	3*	NA	NA	5 U	NA	NA	NA	NA	NA	5 U	NA
Cadmium	5	NA	NA	5 UJ	NA	NA	NA	NA	NA	5 UJ	NA
Calcium	NE	NA	NA	282000 J	NA	NA	NA	NA	NA	89300 J	NA
Chromium	50	NA	NA	20.6 J	NA	NA	NA	NA	NA	11.2 J	NA
Cobalt	NE	NA	NA	50 UJ	NA	NA	NA	NA	NA	50 UJ	NA
Copper	200	NA	NA	4.66 J	NA	NA	NA	NA	NA	25 U	NA
Iron	300	NA	NA	361	NA	NA	NA	NA	NA	334	NA
Magnesium	35000*	NA	NA	27200 J	NA	NA	NA	NA	NA	27700 J	NA
Manganese	300	NA	NA	1630	NA	NA	NA	NA	NA	358 J	NA
Nickel	100	NA	NA	40 U	NA	NA	NA	NA	NA	40 UJ	NA
Potassium	NE	NA	NA	20100	NA	NA	NA	NA	NA	29300	NA
Selenium	10	NA	NA	10 U	NA	NA	NA	NA	NA	10 U	NA
Silver	50	NA	NA	10 U	NA	NA	NA	NA	NA	10 UJ	NA
Sodium	20000	NA	NA	65400 J	NA	NA	NA	NA	NA	181000	NA
Thallium	0.5*	NA	NA	10 UJ	NA	NA	NA	NA	NA	10 U	NA
Vanadium	NE	NA	NA	50 U	NA	NA	NA	NA	NA	50 UJ	NA
Zinc	2000*	NA	NA	32.2 J	NA	NA	NA	NA	NA	20 UJ	NA
<b>Total Metals (ug/L)</b>											
Aluminum	NE	200 UJ	53.3 J	459	332 J+	385	200 U	60.2 J	3360	331 J	82.5 J
Arsenic	25	10 U	5.400 U	10 U	5.400 U	3.2 U	10 UJ	5.400 U	3.2 U	10 UJ	5.400 U
Barium	1000	298	259	302	349	179	220 J	245	80.6	120 J	92.5
Calcium	NE	189000 J	149000	264000 J	278000	126000	127000 J	104000	84100	85000 J	74500
Chromium	50	10 U	1.400 U	10 UJ	1.960 J	1.6 U	10 UJ	1.400 U	8.4	16.4 J	1.400 U
Cobalt	NE	50 UJ	2.500 U	50 UJ	2.500 U	1.7 U	50 UJ	2.500 U	1.7 U	50 UJ	2.500 U
Copper	200	25 U	3.700 U	8.36 J	4.870 J	3.7 U	6.82 J	3.700 U	10.5	16.2 J	6.440 J
Iron	300	4530	1160	7280	12000 J	1460	574	907	8850	2370	2920
Lead	25	5 UJ	7.050 J	68.2	46.4	4.2	5 U	3.760 J	18.1	5 U	3.340 J
Magnesium	35000*	10600 J	48400	25500 J	31100	25100	25900	26900	30200	26100	17800
Manganese	300	1400	648 J	1570	1440 J	580	798 J	720 J	455	360 J	358 J
Mercury	0.7	0.2 U	0.06 U	0.24	0.06 UJ	0.10 U	0.2 UJ	0.06 U	0.10 U	0.2 UJ	0.06 U
Nickel	100	40 U	4.900 U	40 U	4.900 U	1.6 U	40 UJ	4.900 U	8.3	4.88 J	4.900 U
Potassium	NE	22600	33500 J	18400	20100	12100	25800 J	26200 J	15900	28000 J	27100 J
Selenium	10	10 U	4.500 U	10 U	4.500 U	4.2 U	10 U	4.500 U	4.2 U	10 U	4.940 J
Sodium	20000	108000	423000 J	58100 J	53800	87100	138000 J	88700 J	81400	170000 J	178000 J
Vanadium	NE	50 U	4.100 U	50 U	4.100 U	1.8 U	50 UJ	4.100 U	5.1	50 UJ	4.100 U
Zinc	2000*	504	128 J+	38.6 J	25.4	6.7	62.8 J	4.200 U	23.2	31.7 J	39.8 J+
<b>Inorganics (mg/L)</b>											
Cyanide, Amenable	NE	0.01 U	10 U	0.02	10 U	NA	0.28	30	NA	0.19	10 U
Cyanide, Total	200	0.01 U	41	0.025	10 U	0.22	0.405	91	0.089	0.191	290
Chloride	250000	NA	NA	NA	NA	109	NA	NA	148	NA	NA
Fluoride	NE	NA	NA	NA	NA	0.22	NA	NA	0.49	NA	NA
Sulfate	NE	NA	NA	NA	NA	62.3	NA	NA	30.4	NA	NA
Nitrogen, Ammonia	NE	NA	NA	NA	NA	4.8	NA	NA	5.2	NA	NA

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

Table Abbreviations, References and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		14MWDD01	14MWDD01	14MWS02	14MWS02	14MWS02	14MWS02 DUP	14MWD02	14MWDD02
Screened Interval (ft bgs):	NYSDEC AWQSGVs	44-54	44-54	7-17	7-17	7-17	7-17	22-32	40-50
Date Collected:		6/6/2006	9/29/2008	4/16/2004	6/6/2006	8/22/2008	8/22/2008	4/16/2004	6/6/2006
Investigation Conducted By:		GEI	AECOM	H&A	GEI	AECOM	AECOM	H&A	GEI
<b>BTEX (ug/L)</b>									
Benzene	1	1400	870	18000	140	52	55	2800	6800
Toluene	5	150	35	8000	260	55	63	4000	140
Ethylbenzene	5	540	570	730	66	79	84	1200	1200
m/p-Xylenes	NE	NR	490	NR	NR	40	46	NR	NR
o-Xylenes	NE	NR	260	NR	NR	40	43	NR	NR
Xylene, total	5	680	750	2800	180	80	89	2700	760
Total BTEX	NE	2770	2225	29530	646	266	291	10700	8900
<b>Other VOCs (ug/L)</b>									
Acetone	50	NR	2.7 U	NR	NR	2.7 U	2.7 U	NR	NR
Carbon disulfide	NE	0.71 J	0.51 U	48 U	1 U	0.51 U	0.51 U	12 U	1 UJ
Chloroform	7	1 U	0.46 U	38 U	1 U	0.46 U	0.46 U	9.5 U	1 UJ
Cyclohexane	NE	7.2	3.5	NA	0.76 J	0.37 U	0.37 U	NA	8.3 J
Isopropyl benzene	5	29	19	NA	2.3	4.8 J	5.5	NA	22 J
Methyl tert-butyl ether	NE	1 U	0.50 U	NA	1 U	0.50 U	0.50 U	NA	1 UJ
Methylcyclohexane	NE	1 U	0.43 U	NA	1	0.43 U	0.43 U	NA	1 UJ
Styrene	5	1 U	0.75 J	410	33	6.8	8.3	150	40 J
Total VOCs	NE	2806.91	2248.25	29940	683.06	277.6	304.8	10850	8970.3
<b>VOC TICs (ug/L)</b>									
Total VOC TICs	NE	312.7	NA	4600	846	NA	NA	9180	116.8
<b>Noncarcinogenic PAHs (ug/L)</b>									
Acenaphthene	20*	180	230	52	15	38 J	37 J	93	14
Acenaphthylene	NE	110 U	16	180	23	37 J	34 J	190	41
Anthracene	50*	110 U	14	27	7.3 J	12	12	23	2.2 J
Benzo[g,h,i]perylene	NE	NR	0.042 U	NR	NR	0.022 J	0.021 J	NR	NR
Fluoranthene	50*	110 U	12	12	4.9 J	8.1	8.3	9.7	11 U
Fluorene	50*	110	150	94	24	42 J	40 J	110	8 J
Methylnaphthalene,2-	NE	27 J	22 J	480	10 U	8.4 J	8.5 J	560	33
Naphthalene	10*	5500	9200	5400	10 U	30 J	11 J	6900	2600 J
Phenanthrene	50*	92 J	130	93	7.4 J	45 J	45 J	100	7.5 J
Pyrene	50*	110 U	6.5	13	3.7 J	6.7	7	7.3	11 U
Total Noncarcinogenic PAHs	NE	5909	9780.5	6351	85.3	151.222	202.821	7993	2705.7
<b>Carcinogenic PAHs (ug/L)</b>									
Benzo[a]anthracene	0.002*	110 U	0.063 U	7.5 U	10 U	0.470 J	0.490 J	7.5 U	11 U
Benzo[a]pyrene	NE	NR	0.047 U	NR	NR	0.089 J	0.072 J	NR	NR
Benzo[b]fluoranthene	0.002	NR	0.047 U	NR	NR	0.11	0.100 J	NR	NR
Benzo[k]fluoranthene	0.002	NR	0.074 U	NR	NR	0.044 J	0.041 J	NR	NR
Chrysene	0.002	NR	0.095 U	NR	NR	0.4	0.41	NR	NR
Indeno[1,2,3-cd]pyrene	0.002	NR	0.063 U	NR	NR	0.033 J	0.021 J	NR	NR
Total Carcinogenic PAHs	NE	ND	0	ND	ND	0.15114	0.13392	ND	ND
<b>Total PAHs (ug/L)</b>									
Total PAHs	NE	5909	9758.5	6351	85.3	219.968	195.455	7993	2705.7
<b>Other SVOCs (ug/L)</b>									
Biphenyl,1,1'-	NE	61 J	53	NA	5.9 J	13	13	NA	7.6 J
Bis(2-ethylhexyl)phthalate	5	110 U	6.5 U	28 U	10 U	1.4 U	1.4 U	28 U	11 U
Carbazole	NE	420	240	280	82	64	71	370	49
Dibenzofuran	NE	120	96	98	19	31	31	140	8.7 J
Dimethylphenol, 2,4-	50*	110 U	3.8 U	1700	10 U	0.800 U	0.840 U	530	11 U
Methylphenol, 4-	NE	110 U	2.0 U	1700	10 U	0.410 U	0.430 U	1400	11 U
Methylphenol,2-	NE	110 U	1.8 U	810	10 U	0.380 U	0.400 U	690	11 U
Phenol	NE	110 U	2.8 U	590	10 U	0.580 U	0.610 UJ	590	31
Total SVOCs	NE	6510	10169.5	11529	192.2	336.368	318.955	11713	2802
<b>SVOC TICs (ug/L)</b>									
Total SVOC TICs	NE	2270	NA	6410	894	NA	NA	3710	727

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		14MWDD01	14MWDD01	14MWS02	14MWS02	14MWS02	14MWS02 DUP	14MWD02	14MWDD02
Screened Interval (ft bgs):	NYSDEC AWQSGVs	44-54	44-54	7-17	7-17	7-17	7-17	22-32	40-50
Date Collected:		6/6/2006	9/29/2008	4/16/2004	6/6/2006	8/22/2008	8/22/2008	4/16/2004	6/6/2006
Investigation Conducted By:		GEI	AECOM	H&A	GEI	AECOM	AECOM	H&A	GEI
<b>Dissolved Metals (ug/L)</b>									
Arsenic	25	NA	NA	NA	27 J	NA	NA	NA	10 UJ
Barium	1000	NA	NA	NA	115 J	NA	NA	NA	608
Beryllium	3*	NA	NA	NA	0.36 J	NA	NA	NA	5 U
Cadmium	5	NA	NA	NA	0.49 J	NA	NA	NA	5 UJ
Calcium	NE	NA	NA	NA	98500 J	NA	NA	NA	79300 J
Chromium	50	NA	NA	NA	13.6 J	NA	NA	NA	0.74 J
Cobalt	NE	NA	NA	NA	14 J	NA	NA	NA	0.79 J
Copper	200	NA	NA	NA	19.4 J	NA	NA	NA	25 U
Iron	300	NA	NA	NA	444 J	NA	NA	NA	417 J
Magnesium	35000*	NA	NA	NA	18300 J	NA	NA	NA	24500 J
Manganese	300	NA	NA	NA	131 J	NA	NA	NA	316 J
Nickel	100	NA	NA	NA	12.3 J	NA	NA	NA	40 UJ
Potassium	NE	NA	NA	NA	29600 J	NA	NA	NA	48200
Selenium	10	NA	NA	NA	10 U	NA	NA	NA	10 U
Silver	50	NA	NA	NA	23.5 J	NA	NA	NA	10 UJ
Sodium	20000	NA	NA	NA	90400 J	NA	NA	NA	296000
Thallium	0.5*	NA	NA	NA	53.9 J	NA	NA	NA	10 U
Vanadium	NE	NA	NA	NA	13.8 J	NA	NA	NA	50 UJ
Zinc	2000*	NA	NA	NA	28.7 UJ	NA	NA	NA	20 UJ
<b>Total Metals (ug/L)</b>									
Aluminum	NE	200 U	153 J-	404	200 U	19.3 U	19.3 U	1170	849 J
Arsenic	25	10 UJ	5.400 U	6.2	10 UJ	5.400 U	5.400 U	4.9	10 UJ
Barium	1000	265 J	195	78.7	104 J	153	158	342	641 J
Calcium	NE	97100 J	77400	74800	88700 J	83100	87300	107000	79900 J
Chromium	50	10 UJ	1.400 U	1.6 U	10 UJ	1.400 U	1.400 U	2.8	10 UJ
Cobalt	NE	50 UJ	2.500 U	1.7 U	50 UJ	2.500 U	2.500 U	1.7 U	1.65 J
Copper	200	5.01 J	3.700 U	3.7 U	8 J	3.700 U	3.700 U	3.7 U	14.5 J
Iron	300	382	634 J	1320	236 J	512	488	2440	4040
Lead	25	5 U	4.310 J	23.4	2.89 J	4.990 J	6.190 J	2.3 U	5 U
Magnesium	35000*	56100	50600	12900	15700 J	16000	16700	31900	25000
Manganese	300	142 J	154	106	110 J	251 J	248 J	329	345 J
Mercury	0.7	0.2 UJ	0.06 U	0.10 U	0.2 UJ	0.06 U	0.06 U	0.10 U	0.2 UJ
Nickel	100	40 UJ	4.900 U	4.3	40 UJ	4.900 U	4.900 U	6.1	40 UJ
Potassium	NE	47300 J	27300	18200	25900 J	20600 J	21600 J	43300	47400 J
Selenium	10	10 U	4.500 U	4.4	10 U	4.700 J	4.500 U	4.2 U	10 U
Sodium	20000	1090000 J	644000 J	56200	73900 J	47100 J	49700 J	211000	284000 J
Vanadium	NE	50 UJ	4.100 U	2.3	50 UJ	4.100 U	4.100 U	2.4	50 UJ
Zinc	2000*	20 UJ	12.5 J	5.8 U	20.2 J	4.200 U	4.200 U	10.9	29.5 J
<b>Inorganics (mg/L)</b>									
Cyanide, Amenable	NE	0.03	20	NA	0.07	10 U	10 U	NA	0.45
Cyanide, Total	200	0.031	55	3.6	0.069	43	44	0.059	0.68 J
Chloride	250000	NA	NA	103	NA	NA	NA	328	NA
Fluoride	NE	NA	NA	0.6	NA	NA	NA	0.4	NA
Sulfate	NE	NA	NA	107	NA	NA	NA	5.0 U	NA
Nitrogen, Ammonia	NE	NA	NA	1.9	NA	NA	NA	4.1	NA

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

Table Abbreviations, References and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.



**Table 5-9**  
**East 14th Street Station Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location:		14MWDD02 DUP	14MWDD02	14MWDD02 DUP	14MWDD03	14MWDD03	14MWD05	14MWD05
Screened Interval (ft bgs):	NYSDEC AWQSGVs	40-50	40-50	40-50	48-58	48-58	22-32	14MWD05-082108
Date Collected:		6/6/2006	9/29/2008	9/29/2008	6/8/2006	8/20/2008	6/8/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM	AECOM	GEI	AECOM	GEI	AECOM
<b>BTEX (ug/L)</b>								
Benzene	1	7700	4800	4800	5 J	1.5	1	0.52 U
Toluene	5	140	33	38	80	0.51 U	1 U	0.51 U
Ethylbenzene	5	1000	1700	1500	230	39	1 U	0.50 U
m/p-Xylenes	NE	NR	510	420	NR	0.97 U	NR	0.97 U
o-Xylenes	NE	NR	560	550	NR	2.4	NR	0.51 U
Xylene, total	5	840	1070	970	730	2.4	1 U	ND
Total BTEX	NE	9680	7603	7308	1045	42.9	1	ND
<b>Other VOCs (ug/L)</b>								
Acetone	50	NR	4.9 J	2.7 U	NR	2.7 U	NR	2.7 U
Carbon disulfide	NE	1 U	0.51 U	0.51 U	1 U	0.51 U	0.75 J	0.51 U
Chloroform	7	1 U	0.46 U	0.46 U	2.6 J	0.46 U	1 U	0.46 U
Cyclohexane	NE	11	9.7	9.9	1 U	0.37 U	1 U	0.37 U
Isopropyl benzene	5	25	38	39	8.8 J	4.2	1 U	0.44 U
Methyl tert-butyl ether	NE	1 U	1.4	1.4	1 U	0.50 U	1 U	0.50 U
Methylcyclohexane	NE	1 U	6.3	6.6	0.63 J	0.43 U	1 U	0.43 U
Styrene	5	45	4.2	5.2	1 U	0.48 U	1 U	0.48 U
Total VOCs	NE	9761	7667.5	7370.1	1057.03	47.1	1.75	ND
<b>VOC TICs (ug/L)</b>								
Total VOC TICs	NE	299.8	NA	NA	228	NA	NA	NA
<b>Noncarcinogenic PAHs (ug/L)</b>								
Acenaphthene	20*	16	60	79	21	18 J	10 U	0.043 J
Acenaphthylene	NE	45	88	90	20	6.8 J	10 U	0.350 J
Anthracene	50*	12 U	1.2	1.4	4.6 J	4.7	10 U	0.110 J
Benzo[g,h,i]perylene	NE	NR	0.041 U	0.041 U	NR	0.009 U	NR	0.009 U
Fluoranthene	50*	12 U	1.2	1.5	4.1 J	4.9	10 U	0.032 J
Fluorene	50*	8.3 J	17	18	18	6.7 J	10 U	0.110 UJ
Methylnaphthalene,2-	NE	35	63	60	74	0.410 U	10 U	0.390 U
Naphthalene	10*	4000 J	5400 J	7400 J	610	3.6 J	10 U	0.074 J
Phenanthrene	50*	7.9 J	5.8	6.2	22	7.8	10 U	0.043 J
Pyrene	50*	12 U	0.92	1.1	3.1 J	3	10 U	0.021 J
Total Noncarcinogenic PAHs	NE	4112.2	5637.12	7657.2	776.8	55.5	ND	0.673
<b>Carcinogenic PAHs (ug/L)</b>								
Benz[a]anthracene	0.002*	12 U	0.061 U	0.062 U	10 U	0.16	10 U	0.013 UJ
Benzo[a]pyrene	NE	NR	0.046 U	0.046 U	NR	0.010 U	NR	0.010 U
Benzo[b]fluoranthene	0.002	NR	0.046 U	0.046 U	NR	0.032 J	NR	0.010 U
Benzo[k]fluoranthene	0.002	NR	0.071 U	0.072 U	NR	0.015 U	NR	0.015 U
Chrysene	0.002	NR	0.100 J	0.100 J	NR	0.15	NR	0.019 U
Indeno[1,2,3-cd]pyrene	0.002	NR	0.061 U	0.062 U	NR	0.013 U	NR	0.013 U
Total Carcinogenic PAHs	NE	ND	0.0001	0.0001	ND	0.01935	ND	0
<b>Total PAHs (ug/L)</b>								
Total PAHs	NE	4112.2	5574.22	7597.3	776.8	55.842	ND	0.673
<b>Other SVOCs (ug/L)</b>								
Biphenyl,1,1-	NE	8.3 J	14 J	13 J	6.3 J	2.0 J	10 U	0.330 U
Bis(2-ethylhexyl)phthalate	5	12 U	6.6 U	6.6 U	10 U	1.4 U	10 U	1.4 U
Carbazole	NE	46	44 J	45 J	49 J	8.9 J	10 UJ	0.250 U
Dibenzofuran	NE	8.9 J	9.8 J	9.8 J	14	7.4 J	10 U	0.320 U
Dimethylphenol, 2,4-	50*	12 U	3.9 U	3.9 U	2.3 J	0.840 U	10 U	0.790 U
Methylphenol, 4-	NE	12 U	2.0 U	2.0 U	10 U	0.430 U	10 U	0.410 U
Methylphenol,2-	NE	12 U	1.8 U	1.8 U	10 U	0.400 U	10 U	0.380 U
Phenol	NE	30	2.8 U	2.8 U	10 U	0.610 UJ	10 U	0.570 U
Total SVOCs	NE	4205.4	5710.92	7725.1	848.4	74.142	ND	0.673
<b>SVOC TICs (ug/L)</b>								
Total SVOC TICs	NE	758	NA	NA	915.2	NA	51.6	NA

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		14MWDD02 DUP	14MWDD02	14MWDD02 DUP	14MWDD03	14MWDD03	14MWD05	14MWD05
Screened Interval (ft bgs):	NYSDEC AWQSGVs	40-50	40-50	40-50	48-58	48-58	22-32	14MWD05-082108
Date Collected:		6/6/2006	9/29/2008	9/29/2008	6/8/2006	8/20/2008	6/8/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM	AECOM	GEI	AECOM	GEI	AECOM
<b>Dissolved Metals (ug/L)</b>								
Arsenic	25	10 UJ	NA	NA	10 U	NA	10 U	NA
Barium	1000	630	NA	NA	295 J	NA	1010 J	NA
Beryllium	3*	5 U	NA	NA	5 U	NA	0.31 U	NA
Cadmium	5	5 UJ	NA	NA	5 UJ	NA	1.21 UJ	NA
Calcium	NE	81600 J	NA	NA	143000 J	NA	117000 J	NA
Chromium	50	19.1 J	NA	NA	10 U	NA	10 U	NA
Cobalt	NE	0.92 J	NA	NA	50 UJ	NA	50 UJ	NA
Copper	200	25 U	NA	NA	25 U	NA	4.44 J	NA
Iron	300	685 J	NA	NA	100 U	NA	218	NA
Magnesium	35000*	25500 J	NA	NA	287000 J	NA	81100 J	NA
Manganese	300	325 J	NA	NA	370	NA	164	NA
Nickel	100	6.47 J	NA	NA	40 U	NA	40 U	NA
Potassium	NE	49800 J	NA	NA	193000	NA	45700	NA
Selenium	10	10 U	NA	NA	10 U	NA	10 U	NA
Silver	50	10 UJ	NA	NA	10 U	NA	10 U	NA
Sodium	20000	308000 J	NA	NA	3070000	NA	533000	NA
Thallium	0.5*	10 U	NA	NA	10 UJ	NA	10 UJ	NA
Vanadium	NE	50 UJ	NA	NA	50 U	NA	50 U	NA
Zinc	2000*	20 UJ	NA	NA	20 UJ	NA	26.7 UJ	NA
<b>Total Metals (ug/L)</b>								
Aluminum	NE	810 J	215 J-	77.0 J-	5380	1890	2690	4540
Arsenic	25	10 UJ	5.400 U	5.400 U	11.8 J	5.400 U	10 U	5.400 U
Barium	1000	604 J	661	700	364	305	946	749
Calcium	NE	73600 J	58000	60500	178000 J	172000	118000 J	98600
Chromium	50	14.1 J	1.400 U	1.400 U	11.8 J	2.180 J	10 U	7.61
Cobalt	NE	1.49 J	2.500 U	2.500 U	50 UJ	2.500 U	50 UJ	4.200 J
Copper	200	8.7 J	3.700 U	3.700 U	15.3 J	3.700 U	8.58 J	9.490 J
Iron	300	3700	2520 J	2390 J	12200	5960	9560	11300
Lead	25	5 U	3.660 J	3.510 J	3.27 J	3.100 U	5 UJ	8.810 J
Magnesium	35000*	22900 J	15600	16200	327000 J	380000	73600 J	51800
Manganese	300	316 J	371	384	789	462	413	339 J
Mercury	0.7	0.2 UJ	0.06 U	0.06 U	0.2 U	0.06 U	0.2 U	0.06 U
Nickel	100	2.98 J	4.900 U	4.900 U	40 U	4.900 U	40 U	10.3 J
Potassium	NE	44500 J	31000	32700	197000	186000	44300	37200 J
Selenium	10	10 U	5.820 J	4.500 U	10 U	4.500 U	10 U	4.500 U
Sodium	20000	269000 J	163000	175000	3520000	2570000	503000	460000 J
Vanadium	NE	0.75 J	4.100 U	4.100 U	50 U	4.100 U	50 U	10.8 J
Zinc	2000*	27.9 J	25.8	21.4	52.8 J	28.2	40.6 J	31.9 J+
<b>Inorganics (mg/L)</b>								
Cyanide, Amenable	NE	0.39	150	200	0.01 UJ	10 U	0.17	10 U
Cyanide, Total	200	0.393 J	315	338	0.01	10 U	0.371	297
Chloride	250000	NA	NA	NA	NA	NA	NA	NA
Fluoride	NE	NA	NA	NA	NA	NA	NA	NA
Sulfate	NE	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Ammonia	NE	NA	NA	NA	NA	NA	NA	NA

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

Table Abbreviations, References and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-9**  
**East 14th Street Station Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location:		14MWDD05	14MWDD05
Screened Interval (ft bgs):	NYSDEC AWQSGVs	41-51	41-51
Date Collected:		6/8/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM
<b>BTEX (ug/L)</b>			
Benzene	1	1 U	0.52 U
Toluene	5	1 U	0.51 U
Ethylbenzene	5	1 U	0.50 U
m/p-Xylenes	NE	NR	0.97 U
o-Xylenes	NE	NR	0.51 U
Xylene, total	5	1 U	ND
Total BTEX	NE	ND	ND
<b>Other VOCs (ug/L)</b>			
Acetone	50	NR	2.7 U
Carbon disulfide	NE	1 U	0.51 U
Chloroform	7	1 U	0.46 U
Cyclohexane	NE	1 U	0.37 U
Isopropyl benzene	5	0.48 J	0.44 UJ
Methyl tert-butyl ether	NE	1 U	0.50 U
Methylcyclohexane	NE	1 U	0.43 U
Styrene	5	1 U	0.48 UJ
Total VOCs	NE	0.48	ND
<b>VOC TICs (ug/L)</b>			
Total VOC TICs	NE	NA	NA
<b>Noncarcinogenic PAHs (ug/L)</b>			
Acenaphthene	20*	10 U	0.270 J
Acenaphthylene	NE	10 U	0.120 J
Anthracene	50*	10 U	0.082 J
Benzo[g,h,i]perylene	NE	NR	0.008 U
Fluoranthene	50*	1.4 J	0.31
Fluorene	50*	10 U	0.100 UJ
Methylnaphthalene,2-	NE	10 U	0.390 U
Naphthalene	10*	10 U	0.062 J
Phenanthrene	50*	5.4 J	0.041 J
Pyrene	50*	2 J	0.45
Total Noncarcinogenic PAHs	NE	8.8	1.056
<b>Carcinogenic PAHs (ug/L)</b>			
Benz[a]anthracene	0.002*	10 U	0.120 J
Benzo[a]pyrene	NE	NR	0.009 U
Benzo[b]fluoranthene	0.002	NR	0.009 U
Benzo[k]fluoranthene	0.002	NR	0.014 U
Chrysene	0.002	NR	0.100 J
Indeno[1,2,3-cd]pyrene	0.002	NR	0.012 U
Total Carcinogenic PAHs	NE	ND	0.0121
<b>Total PAHs (ug/L)</b>			
Total PAHs	NE	8.8	1.555
<b>Other SVOCs (ug/L)</b>			
Biphenyl, 1,1-	NE	10 U	0.330 U
Bis(2-ethylhexyl)phthalate	5	10 U	1.4 U
Carbazole	NE	10 UJ	0.250 U
Dibenzofuran	NE	10 U	0.320 U
Dimethylphenol, 2,4-	50*	10 U	0.790 UJ
Methylphenol, 4-	NE	10 U	0.410 U
Methylphenol,2-	NE	10 U	0.380 U
Phenol	NE	10 U	0.570 U
Total SVOCs	NE	8.8	1.555
<b>SVOC TICs (ug/L)</b>			
Total SVOC TICs	NE	49.7	NA

**Table 5-9**  
**East 14th Street Station Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location:		14MWDD05	14MWDD05
Screened Interval (ft bgs):	NYSDEC AWQSGVs	41-51	41-51
Date Collected:		6/8/2006	8/21/2008
Investigation Conducted By:		GEI	AECOM
<b>Dissolved Metals (ug/L)</b>			
Arsenic	25	7.61 J	NA
Barium	1000	616 J	NA
Beryllium	3*	5 U	NA
Cadmium	5	5 UJ	NA
Calcium	NE	91700 J	NA
Chromium	50	8.42 J	NA
Cobalt	NE	1.26 J	NA
Copper	200	3.82 J	NA
Iron	300	369	NA
Magnesium	35000*	88500 J	NA
Manganese	300	243	NA
Nickel	100	40 U	NA
Potassium	NE	78100 J	NA
Selenium	10	10 U	NA
Silver	50	10 U	NA
Sodium	20000	1430000 J	NA
Thallium	0.5*	10 UJ	NA
Vanadium	NE	50 U	NA
Zinc	2000*	25.2 UJ	NA
<b>Total Metals (ug/L)</b>			
Aluminum	NE	200 U	92.1 J
Arsenic	25	10.1	8.620 J
Barium	1000	530 J	416
Calcium	NE	77700 J	81200
Chromium	50	15 J	1.400 U
Cobalt	NE	0.63 J	2.500 U
Copper	200	25 U	3.700 U
Iron	300	1840	1420
Lead	25	5 U	3.100 U
Magnesium	35000*	74300 J	81300
Manganese	300	221	143 J
Mercury	0.7	0.2 UJ	0.06 U
Nickel	100	5.9 J	4.900 U
Potassium	NE	65800 J	54100 J
Selenium	10	10 U	4.500 U
Sodium	20000	1200000 J	1040000 J
Vanadium	NE	50 U	4.100 U
Zinc	2000*	20 UJ	4.200 U
<b>Inorganics (mg/L)</b>			
Cyanide, Amenable	NE	0.13	30
Cyanide, Total	200	0.13	98
Chloride	250000	NA	NA
Fluoride	NE	NA	NA
Sulfate	NE	NA	NA
Nitrogen, Ammonia	NE	NA	NA

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

Table Abbreviations, References and additional Notes are listed at the front of the Chemical Data Summary Tables group of the RI Report.

**Table 5-9  
East 14th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	Summary Statistics											
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (ug/L)</b>												
Benzene	28	20	8	19	0	18000	14MWS02 7 - 17 4/16/2004 H&A	1	14MWD05 22 - 32 6/8/2006 GEI	3228.195	0.35	1
Toluene	28	14	14	13	0	8000	14MWS02 7 - 17 4/16/2004 H&A	1.7	14MWD01 22 - 32 6/8/2006 GEI	928.6928571	0.16	1
Ethylbenzene	28	17	11	15	0	1700	14MWD02-092908	1	14MWS01 7 - 17 6/6/2006 GEI	541.2352941	0.05	1
m/p-Xylenes	13	6	7	0	0	510	14MWD02-092908	40	14MWS02-082208	276	0.47	0.97
o-Xylenes	13	7	6	0	0	560	14MWD02-092908	2.4	14MWD03-082008	211.0571429	0.16	0.51
Xylene, total	28	18	10	15	0	2800	14MWS02 7 - 17 4/16/2004 H&A	0.4	MW10 5 - 15 6/8/2006 GEI	660.3422222	-	1
Total BTEX	28	21	7	0	0	29530	14MWS02 7 - 17 4/16/2004 H&A	0.4	MW10 5 - 15 6/8/2006 GEI	4697.750476	-	-
<b>Other VOCs (ug/L)</b>												
Acetone	13	1	12	0	0	4.9	14MWD02-092908	4.9	14MWD02-092908	4.9	2.2	2.7
Carbon disulfide	28	2	26	0	0	0.75	14MWD05 22 - 32 6/8/2006 GEI	0.71	14MWD01 44 - 54 6/6/2006 GEI	0.73	0.2	48
Chloroform	28	1	27	0	0	2.6	14MWD03 48 - 58 6/8/2006 GEI	2.6	14MWD03 48 - 58 6/8/2006 GEI	2.6	0.2	38
Cyclohexane	24	8	16	0	0	11	DUP 14MWD02 40 - 50 6/6/2006 GEI	0.76	14MWS02 7 - 17 6/6/2006 GEI	6.645	0.37	1
Isopropyl benzene	24	14	10	0	10	39	DUP-1-092908	0.48	14MWD05 41 - 51 6/8/2006 GEI	15.81285714	0.37	1
Methyl tert-butyl ether	24	6	18	0	1	13	14MWD01-082108	0.45	MW36 5 - 15 6/8/2006 GEI	3.256666667	0.23	1
Methylcyclohexane	24	4	20	0	0	6.6	DUP-1-092908	0.63	14MWD03 48 - 58 6/8/2006 GEI	3.6325	0.43	1
Styrene	28	10	18	0	8	410	14MWS02 7 - 17 4/16/2004 H&A	0.75	14MWD01-092908	70.325	0.19	1
Total VOCs	28	24	4	0	0	29940	14MWS02 7 - 17 4/16/2004 H&A	0.4	MW10 5 - 15 6/8/2006 GEI	4153.068833	-	-
<b>VOC TICs (ug/L)</b>												
Total VOC TICs	11	11	0	0	0	9180	14MWD02 22 - 32 4/16/2004 H&A	2.8	MW36 5 - 15 6/8/2006 GEI	1447.445455	-	-
<b>Noncarcinogenic PAHs (ug/L)</b>												
Acenaphthene	28	23	5	13	0	230	14MWD01-092908	0.043	14MWD05-082108	50.56665217	0.1	10
Acenaphthylene	28	17	11	0	0	190	14MWD02 22 - 32 4/16/2004 H&A	0.12	14MWD05-082108	47.47823529	0.014	110
Anthracene	28	18	10	0	0	27	14MWS02 7 - 17 4/16/2004 H&A	0.042	14MWS01-082108	8.313	0.013	110
Benzo[a,h,i]perylene	13	4	9	0	0	0.3	MW-36-092608	0.021	14MWS02-082208(DUP)	0.091	0.008	2.4
Fluoranthene	28	20	8	0	0	12	14MWD01-092908	0.021	14MWS01-082108	5.19065	0.05	110
Fluorene	28	18	10	6	0	150	14MWD01-092908	3.1	MW36 5 - 15 6/8/2006 GEI	49.72222222	0.1	10
Methylnaphthalene,2-	28	12	16	0	0	560	14MWD02 22 - 32 4/16/2004 H&A	8.4	14MWS02-082208	118.325	0.39	10
Naphthalene	28	20	8	14	0	9200	14MWD01-092908	0.062	14MWD05-082108	2532.9048	0.016	10
Phenanthrene	28	22	6	7	0	130	14MWD01-092908	0.032	14MWS01-082108	36.03936364	0.014	10
Pyrene	28	20	8	0	0	13	14MWS02 7 - 17 4/16/2004 H&A	0.021	14MWD05-082108	3.94365	0.07	110
Total Noncarcinogenic PAHs	15	13	2	0	0	7993	14MWD02 22 - 32 4/16/2004 H&A	0.4	14MWS01 7 - 17 4/16/2004 H&A	2251.046154	-	-
<b>Carcinogenic PAHs (ug/L)</b>												
Benzo[a]anthracene	28	6	22	6	0	1.5	MW36 5 - 15 6/8/2006 GEI	0.12	14MWD05-082108	0.6	0.012	110
Benzo[a]pyrene	13	4	9	0	0	0.71	MW-36-092608	0.021	14MWD01-082108	0.223	0.009	1.4
Benzo[b]fluoranthene	13	5	8	5	0	0.91	MW-36-092608	0.031	14MWD01-082108	0.2366	0.009	2.7
Benzo[k]fluoranthene	13	4	9	4	0	0.3	MW-36-092608	0.021	14MWD01-082108	0.1015	0.014	1.9
Chrysene	13	7	6	7	0	0.66	MW-36-092608	0.1	14MWD05-082108	0.274285714	0.019	1.6
Indeno[1,2,3-cd]pyrene	13	4	9	4	0	0.25	MW-36-092608	0.021	14MWS02-082208(DUP)	0.08375	0.012	4.1
Total Carcinogenic PAHs	28	14	14	0	0	1.5	MW36 5 - 15 6/8/2006 GEI	-	MW-10-082108	0.197127143	-	-
<b>Total PAHs (ug/L)</b>												
Total PAHs	28	26	2	0	0	9758.5	14MWD01-092908	0.257	14MWS01-082108	2148.697885	-	-
<b>Other SVOCs (ug/L)</b>												
Biphenyl,1,1-	24	12	12	6	0	61	14MWD01 44 - 54 6/6/2006 GEI	2	14MWD03-082008	17.24166667	0.33	10
Bis[2-ethylhexyl]phthalate	28	1	27	0	0	2.1	MW10 5 - 15 6/8/2006 GEI	2.1	MW10 5 - 15 6/8/2006 GEI	2.1	0.6	110
Carbazole	28	16	12	0	0	420	14MWD01 44 - 54 6/6/2006 GEI	8.9	14MWD03-082008	119.05625	0.08	10
Dibenzofuran	28	17	11	0	0	140	14MWD02 22 - 32 4/16/2004 H&A	7.4	14MWD03-082008	42.12941176	0.3	10
Dimethylphenol, 2,4-	28	5	23	3	0	1700	14MWS02 7 - 17 4/16/2004 H&A	2.3	14MWD03 48 - 58 6/8/2006 GEI	468.66	0.79	110
Methylphenol, 4-	28	2	26	0	0	1700	14MWS02 7 - 17 4/16/2004 H&A	1400	14MWD02 22 - 32 4/16/2004 H&A	1550	0.41	110
Methylphenol,2-	28	2	26	0	0	810	14MWS02 7 - 17 4/16/2004 H&A	690	14MWD02 22 - 32 4/16/2004 H&A	750	0.38	110
Phenol	28	7	21	0	0	590	14MWD02 22 - 32 4/16/2004 H&A	2.4	14MWD01 22 - 32 4/16/2004 H&A	190	0.5	110
Total SVOCs	28	27	1	0	0	11713	14MWD02 22 - 32 4/16/2004 H&A	0.257	14MWS01-082108	2488.383148	-	-
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	14	14	0	0	0	6410	14MWS02 7 - 17 4/16/2004 H&A	28.8	14MWS01 7 - 17 6/6/2006 GEI	1181.271429	-	-
<b>Dissolved Metals (ug/L)</b>												
Arsenic	8	2	6	1	0	27	14MWS02 7 - 17 6/6/2006 GEI	7.61	14MWD05 41 - 51 6/8/2006 GEI	17.305	10	10
Barium	8	8	0	1	0	1010	14MWD05 22 - 32 6/8/2006 GEI	111	14MWD01 22 - 32 6/8/2006 GEI	456.75	-	-
Beryllium	8	1	7	0	0	0.36	14MWS02 7 - 17 6/6/2006 GEI	0.36	14MWS02 7 - 17 6/6/2006 GEI	0.36	0.31	5
Cadmium	8	1	7	0	0	0.49	14MWS02 7 - 17 6/6/2006 GEI	0.49	14MWS02 7 - 17 6/6/2006 GEI	0.49	1.21	5
Calcium	8	8	0	0	0	282000	MW36 5 - 15 6/8/2006 GEI	79300	14MWD02 40 - 50 6/6/2006 GEI	122800	-	-
Chromium	8	6	2	0	0	20.6	MW36 5 - 15 6/8/2006 GEI	0.74	14MWD02 40 - 50 6/6/2006 GEI	12.27666667	10	10
Cobalt	8	4	4	0	0	14	14MWD02 40 - 50 6/6/2006 GEI	0.79	14MWD02 40 - 50 6/6/2006 GEI	4.2425	50	50
Copper	8	4	4	0	0	19.4	14MWS02 7 - 17 6/6/2006 GEI	3.82	14MWD05 41 - 51 6/8/2006 GEI	8.08	25	25
Iron	8	7	1	6	0	685	DUP 14MWD02 40 - 50 6/6/2006 GEI	218	14MWD05 22 - 32 6/8/2006 GEI	404	100	100
Magnesium	8	8	0	3	0	287000	14MWD03 48 - 58 6/8/2006 GEI	18300	14MWS02 7 - 17 6/6/2006 GEI	72475	-	-
Manganese	8	8	0	5	0	1630	MW36 5 - 15 6/8/2006 GEI	131	14MWS02 7 - 17 6/6/2006 GEI	442.125	-	-
Nickel	8	2	6	0	0	12.3	14MWS02 7 - 17 6/6/2006 GEI	6.47	DUP 14MWD02 40 - 50 6/6/2006 GEI	9.385	40	40
Potassium	8	8	0	0	0	193000	14MWD03 48 - 58 6/8/2006 GEI	20100	MW36 5 - 15 6/8/2006 GEI	61725	-	-
Selenium	8	0	8	0	0	-	-	-	-	-	10	10
Silver	8	1	7	0	0	23.5	14MWS02 7 - 17 6/6/2006 GEI	23.5	14MWS02 7 - 17 6/6/2006 GEI	23.5	10	10
Sodium	8	8	0	8	0	3070000	14MWD03 48 - 58 6/8/2006 GEI	65400	MW36 5 - 15 6/8/2006 GEI	746725	-	-
Thallium	8	1	7	1	0	53.9	14MWS02 7 - 17 6/6/2006 GEI	53.9	14MWS02 7 - 17 6/6/2006 GEI	53.9	10	10
Vanadium	8	1	7	0	0	13.8	14MWS02 7 - 17 6/6/2006 GEI	13.8	14MWS02 7 - 17 6/6/2006 GEI	13.8	50	50
Zinc	8	1	7	0	0	32.2	MW36 5 - 15 6/8/2006 GEI	32.2	MW36 5 - 15 6/8/2006 GEI	32.2	20	28.7
<b>Total Metals (ug/L)</b>												
Aluminum	28	21	7	0	0	5380	14MWD03 48 - 58 6/8/2006 GEI	53.3	MW-10-082108	1121.052381	19.3	200
Arsenic	28	5	23	0	0	11.8	14MWD03 48 - 58 6/8/2006 GEI	4.9	14MWD02 22 - 32 4/16/2004 H&A	8.324	3.2	10
Barium	28	28	0	1	0	1280	14MWD02-091008	78.7	14MWS02 7 - 17 4/16/2004 H&A	379.8857143	-	-
Calcium	28	28	0	0	0	278000	MW-36-092608	58000	14MWD02-092908	112728.5714	-	-
Chromium	28	9	19	0	0	16.4	14MWD01 22 - 32 6/8/2006 GEI	1.96	MW-36-092608	8.916666667	1.4	10
Cobalt	28	5	23	0	0	4.2	14MWD05-082108	0.63	14MWD05 41 - 51 6/8/2006 GEI	2.14	1.7	50
Copper	28	13	15	0	0	16.2	14MWD01 22 - 32 6/8/2006 GEI	4.87	MW-36-092608	9.443846154	3.7	25
Iron	28	28	0	26	0	12200	14MWD03 48 - 58 6/8/2006 GEI	236	14MWS02 7 - 17 6/6/2006 GEI	3816.178571	-	-
Lead	28	16	12	1	0	68.2	MW36 5 - 15 6/8/2006 GEI	2.89	14MWS02 7 - 17 6/6/2006 GEI	13.255	2.3	5
Magnesium	28	28	0	9	0	380000	14MWD03-082008	10600	MW10 5 - 15 6/8/2006 GEI	55910.71429	-	-
Manganese	28	28	0	19	0	1570	MW36 5 - 15 6/8/2006 GEI	106	14MWS02 7 - 17 4/16/2004 H&A	510.75	-	-
Mercury	28	1	27	0	0	0.24	MW36 5 - 15 6/8/2006 GEI	0.24	MW36 5 - 15 6/8/2006 GEI	0.24	0.06	0.2
Nickel												

**Table 5-10**  
**East 17th Street Station Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWS03 7.1-17.1 4/15/2004 H&A	17MWS03 7.1-17.1 6/7/2006 GEI	17MWS03 7.1-17.1 8/20/2008 AECOM	17MWD03 21.6-31.6 4/15/2004 H&A	17MWD03 21.6-31.6 6/7/2006 GEI	17MWD03 21.6-31.6 8/20/2008 AECOM	17MWDD03 43-53 6/7/2006 GEI	17MWDD03 43-53 8/20/2008 AECOM	17MWS04 7-17 4/15/2004 H&A	17MWS04 7-17 6/7/2006 GEI	17MWS04 7-17 8/20/2008 AECOM
<b>BTEX (ug/L)</b>												
Benzene	1	53	79	14	46	1.2	1.6	3	0.52 U	0.3	1 U	0.52 U
Toluene	5	0.3 U	0.83 J	1.3 J	0.2 U	1 U	0.51 U	1 U	0.51 U	0.2 U	1 U	0.51 U
Ethylbenzene	5	5	2.2	49	16	1 U	0.50 U	1 U	0.50 U	0.4 U	1 U	0.50 U
m/p-Xylenes	NE	ND	ND	24	ND	ND	0.97 U	ND	0.97 U	ND	ND	0.97 U
o-Xylene	NE	ND	ND	11	ND	ND	0.71 J	ND	0.51 U	ND	ND	0.51 U
Xylene, Total	5	1.8	5.9	35	31	1.97 J	0.71	1 U	ND	0.2 U	1 U	ND
Total BTEX	NE	59.8	87.93	99.3	93	3.17	2.31	3	ND	0.3	ND	ND
<b>Other VOCs (ug/L)</b>												
Chloroform	7	0.4 U	1 U	0.46 U	0.8	1 U	0.46 U	1 U	0.46 U	3.4	1 U	0.46 U
Cyclohexane	NE	NA	8.3	7.3	NA	1.7	0.37 U	1 U	0.37 U	NA	1 U	0.37 U
Dichloroethene, cis-1,2-	5	0.5 U	1 U	0.53 U	0.2 U	1 U	0.53 U	6.9	17	0.2 U	1 U	0.53 U
Dichloroethene, 1,1-	5	0.9 U	1 U	0.55 U	0.4 U	1 U	0.55 U	1 U	0.55 U	0.4 U	1 U	0.55 U
Isopropyl benzene	5	NA	60	56	NA	4.9	5.4	1 U	0.44 U	NA	1 U	0.44 U
Methylcyclohexane	NE	NA	3.9	2.7	NA	1 U	0.43 U	1 U	0.43 U	NA	1 U	0.43 U
Methylene chloride	5	1.6 U	1 U	0.52 U	0.8 U	1 U	0.52 U	1 U	0.52 U	0.8 U	1 U	0.52 U
Styrene	5	0.6 U	1 U	0.48 U	0.3 U	1 U	0.48 U	1 U	0.48 U	0.3 U	1 U	0.48 U
Tetrachloroethene	5	0.6 U	1 U	0.68 U	0.3 U	1 U	0.68 U	4.5	0.68 U	0.3 U	1 U	0.68 U
Trans-1,2-dichloroethene	5	0.5 U	1 U	0.57 U	0.2 U	1 U	0.57 U	0.63 J	1.1	0.2 U	1 U	0.57 U
Trichloroethene	5	0.4 U	1 U	0.56 U	0.2 U	1 U	0.56 U	6.9	2.4	0.2 U	1 U	0.56 U
Vinyl chloride	2	1.1 U	1 U	0.46 U	0.5 U	1 U	0.46 U	1 U	1.5	0.5 U	1 U	0.46 U
Total VOCs	NE	59.8	160.13	165.3	93.8	9.77	7.71	21.93	22	3.7	ND	ND
<b>VOC TICs (ug/L)</b>												
Total VOC TICs	NE	1079.6	432	NA	548	186.2	NA	7.3	NA	4	1.4	NA
<b>Noncarcinogenic PAHs (ug/L)</b>												
Acenaphthene	20*	0.2	10 U	0.120 J	20	10 U	2.5 J	10 U	0.014 UJ	5.9	10 U	0.014 UJ
Acenaphthylene	NE	0.071 U	10 U	0.014 UJ	6.5	10 U	0.095 J	10 U	0.014 UJ	0.072 U	10 U	0.014 UJ
Anthracene	50*	0.088	10 U	0.032 J	3.2	10 U	0.72	10 U	0.013 U	1.5	10 U	0.044 J
Benzo[g,h,i]perylene	NE	ND	ND	0.009 U	ND	ND	0.008 U	ND	0.009 U	ND	ND	0.009 U
Fluoranthene	50*	0.2	10 U	0.032 J	2.3	10 U	0.48	10 U	0.032 J	1.6	10 U	0.066 J
Fluorene	50*	0.1 U	10 U	0.110 UJ	14	10 U	2.1 J	10 U	0.110 UJ	4.9	10 U	0.110 U
Methylnaphthalene,2-	NE	0.5 U	10 U	0.390 U	42	1.4 J	1.8 J	10 U	0.400 U	2.5	10 U	0.420 U
Naphthalene	10*	9.6 J	8.1 J	17 J	130 J	11 J	6.5 J	10 U	0.017 UJ	6.4 J	10 U	0.018 UJ
Phenanthrene	50*	0.6	10 U	0.064 J	16	10 U	3.4	10 U	0.014 U	6.5	10 U	0.014 UJ
Pyrene	50*	0.2	10 U	0.032 J	2.5	10 U	0.4	10 U	0.032 J	1.2	10 U	0.066 J
Total Noncarcinogenic PAHs	NE	10.888	8.1	17.28	236.5	12.4	17.995	ND	0.064	30.5	ND	0.176
<b>Carcinogenic PAHs (ug/L)</b>												
Benz[a]anthracene	0.002*	0.2 U	10 U	0.013 U	0.3	10 U	0.013 U	10 U	0.013 U	0.2	10 U	0.013 U
Benzo[a]pyrene	NE	ND	ND	0.010 U	ND	ND	0.010 U	ND	0.010 U	ND	ND	0.010 U
Benzo[b]fluoranthene	0.002*	0.2 U	10 U	0.010 U	0.2 U	10 U	0.010 U	10 U	0.010 U	0.1 J	10 U	0.022 J
Benzo[k]fluoranthene	0.002	NR	NR	0.015 U	NR	NR	0.015 U	NR	0.015 U	NR	NR	0.015 U
Chrysene	0.002*	0.071 U	10 U	0.019 U	0.3	10 U	0.019 U	10 U	0.019 U	0.2	10 U	0.020 U
Total Carcinogenic PAHs	NE	ND	ND	ND	0.6	ND	ND	ND	ND	0.5	ND	0.022
<b>Total PAHs (ug/L)</b>												
Total PAHs	NE	10.888	8.1	17.28	237.1	12.4	17.995	ND	0.064	31	ND	0.198
<b>Other SVOCs (ug/L)</b>												
Biphenyl,1,1-	NE	NA	10 U	0.340 U	NA	10 U	0.340 U	10 U	0.350 U	NA	10 U	0.360 U
Butyl benzyl phthalate	50*	0.6	10 U	0.440 U	0.4 U	10 U	0.450 U	10 U	0.460 U	0.4 U	10 U	0.470 U
Carbazole	NE	0.081 UJ	10 U	0.250 U	6.7 J	10 U	0.260 U	10 U	0.260 U	8.3 J	10 U	0.270 U
Dibenzofuran	NE	0.3 U	10 U	0.330 U	6.4	10 U	0.330 U	10 U	0.340 U	3.4	10 U	0.350 U
Dimethylphenol, 2,4-	50*	0.8 U	10 U	0.800 U	0.8 U	10 U	0.810 U	10 U	0.830 U	7	10 U	0.850 U
Di-n-butyl phthalate	50	0.4 U	10 U	6.2 U	0.4 U	10 U	6.2 U	10 U	6.4 U	0.4 U	10 U	6.6 U
Methylphenol,2-	NE	0.8 U	10 U	0.380 U	0.8 U	10 U	0.380 U	10 U	0.390 U	7.6	10 U	0.400 U
Methylphenol, 4-	NE	0.5 U	10 U	0.410 U	0.5 U	10 U	0.410 U	10 U	0.420 U	17	10 U	0.440 U
Phenol	NE	0.9	10 U	0.580 UJ	0.6	10 U	0.590 UJ	10 U	0.600 UJ	7.6	10 U	0.620 UJ
Total SVOCs	NE	12.388	8.1	17.28	250.8	12.4	17.995	ND	0.064	81.9	ND	0.198
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	NE	1098	618.8	NA	606.8	183.9	NA	43.1	NA	32.2	22.1	NA

**Table 5-10  
East 17th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWS03 7.1-17.1 4/15/2004 H&A	17MWS03 7.1-17.1 6/7/2006 GEI	17MWS03 7.1-17.1 8/20/2008 AECOM	17MWD03 21.6-31.6 4/15/2004 H&A	17MWD03 21.6-31.6 6/7/2006 GEI	17MWD03 21.6-31.6 8/20/2008 AECOM	17MWDD03 43-53 6/7/2006 GEI	17MWDD03 43-53 8/20/2008 AECOM	17MWS04 7-17 4/15/2004 H&A	17MWS04 7-17 6/7/2006 GEI	17MWS04 7-17 8/20/2008 AECOM
<b>Dissolved Metals (ug/L)</b>												
Arsenic	25	NA	10 UJ	NA	NA	10 UJ	NA	10 UJ	NA	NA	NA	NA
Barium	1000	NA	47.3 J	NA	NA	99.1 J	NA	42.4 J	NA	NA	NA	NA
Calcium	NE	NA	177000 J	NA	NA	147000 J	NA	84900 J	NA	NA	NA	NA
Chromium	50	NA	0.65 J	NA	NA	3.89 J	NA	10 UJ	NA	NA	NA	NA
Cobalt	NE	NA	50 UJ	NA	NA	2.32 J	NA	50 UJ	NA	NA	NA	NA
Copper	200	NA	25 UJ	NA	NA	25 UJ	NA	7.49 J	NA	NA	NA	NA
Iron	300	NA	3000	NA	NA	236	NA	442	NA	NA	NA	NA
Magnesium	35000*	NA	47800 J	NA	NA	150000 J	NA	48800 J	NA	NA	NA	NA
Manganese	300	NA	597 J	NA	NA	424 J	NA	461 J	NA	NA	NA	NA
Nickel	100	NA	40 UJ	NA	NA	40 UJ	NA	5.54 J	NA	NA	NA	NA
Potassium	NE	NA	47900 J	NA	NA	122000	NA	37300	NA	NA	NA	NA
Sodium	20000	NA	232000 J	NA	NA	354000	NA	149000	NA	NA	NA	NA
Zinc	2000*	NA	39 J	NA	NA	36 J	NA	37.8 J	NA	NA	NA	NA
<b>Total Metals (ug/L)</b>												
Aluminum	NE	1010	285 J	78.8 J	237	200 U	209	521 J	1450	11300	277 J	654
Arsenic	25	3.2 U	10 UJ	5.400 U	15.8	16 J	8.390 J	10 UJ	5.400 U	9.2	10 UJ	5.400 U
Barium	1000	237	140 J	124	221	249 J	231	43.9 J	51.7	162	85.6 J	99.4
Calcium	NE	262000	163000 J	139000	128000	148000 J	147000	84000 J	96700	166000	304000 J	363000
Chromium	50	1.8 U	10 UJ	1.400 U	1.6 U	10 UJ	1.400 U	17.3 J	1.840 J	21.6 U	10 UJ	1.400 U
Cobalt	NE	1.7 U	50 UJ	2.500 U	2.8	3.23 J	4.410 J	50 UJ	2.500 U	5.3	50 UJ	2.500 U
Copper	200	3.7 U	3.93 J	3.700 U	3.7 U	5.9 J	3.700 U	25 UJ	3.700 U	26.9	25 UJ	3.900 J
Iron	300	36600	17900	18700	26000	14500	19500	878	3380	13100	337	1220
Lead	25	19.6	7.59	9.900 J	9.2	2.96 J	11.1	5 U	4.160 J	110	5 UJ	9.220 J
Magnesium	35000*	65500	42300 J	33300	117000	144000	122000	49000	49400	48300	101000	114000
Manganese	300	923	579 J	521	1400	456 J	512	486 J	580	540	318 J	610
Mercury	0.7	0.10 U	0.2 UJ	0.06 U	0.10 U	0.2 UJ	0.06 U	0.2 UJ	0.06 U	0.93	0.2 UJ	0.07 J
Nickel	100	2.5 U	40 UJ	4.900 U	1.6 U	40 UJ	4.900 U	9.46 J	5.380 J	28.5 U	40 UJ	4.900 U
Potassium	NE	32800	42700 J	31200	65100	116000 J	86500	37000 J	29100	43000	108000 J	99100
Selenium	10	4.4	10 U	4.500 U	5.7	10 U	4.500 U	10 U	4.500 U	4.2 U	10 UJ	4.500 U
Sodium	20000	278000	203000 J	105000	230000	332000 J	240000	148000 J	109000	208000	405000	381000
Vanadium	NE	1.8 U	50 UJ	4.100 U	2.7	1.62 J	4.100 U	50 UJ	4.100 U	24.1	50 UJ	4.100 U
Zinc	2000*	10.9	25.9 J	22.1	6.8	27.1 J	35.8	31.7 J	40.5	213	42.4 J	49.7
<b>Cyanide (mg/L)</b>												
Cyanide, Amenable	NE	NA	0.01	10 U	NA	0.024	24.6	0.01 U	10 U	NA	0.01	26
Cyanide, Total	200	0.039	0.02	13	0.16	0.025	28	0.01 U	10 U	0.085	0.078	36
Chloride	NE	530	NA	NA	281	NA	NA	NA	NA	334	NA	NA
Fluoride	NE	0.1 U	NA	NA	0.31	NA	NA	NA	NA	0.1 U	NA	NA
Sulfate	NE	5.0 U	NA	NA	62.1	NA	NA	NA	NA	490	NA	NA
Nitrogen, Ammonia	NE	18	NA	NA	195	NA	NA	NA	NA	1.8	NA	NA
Nitrogen, Nitrate	NE	0.1 U	NA	NA	0.1 U	NA	NA	NA	NA	0.14	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

Table Abbreviations, References and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-10**  
**East 17th Street Station Groundwater Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWD04 22-32 4/15/2004 H&A	17MWD04 22-32 6/7/2006 GEI	17MWD04 DUP 22-32 6/7/2006 GEI	17MWD04 22-32 8/20/2008 AECOM	17MWD04 DUP 22-32 8/20/2008 AECOM	17MWDD04 41-51 6/7/2006 GEI	17MWDD04 41-51 8/20/2008 AECOM	17MWS05 7-17 6/5/2006 GEI	17MWS05 7-17 9/10/2008 AECOM	17MWS05 7-17 9/29/2008 AECOM	17MWD05 22-32 6/5/2006 GEI
<b>BTEX (ug/L)</b>												
Benzene	1	2200	1 UJ	13 J	48	52	4.7	0.52 U	1 U	0.35 U	0.52 U	6
Toluene	5	810	1 U	0.7 J	0.51 U	0.51 U	2	0.51 U	1 U	0.16 U	0.51 U	0.47 J
Ethylbenzene	5	720	1 UJ	37 J	0.71 J	0.76 J	6.8	0.50 U	1 U	0.05 U	0.50 U	0.42 J
m/p-Xylenes	NE	ND	ND	ND	0.97 U	0.97 U	ND	0.97 U	ND	0.47 U	0.97 U	ND
o-Xylene	NE	ND	ND	ND	0.51 U	0.51 U	ND	0.51 U	ND	0.16 U	0.51 U	ND
Xylene, Total	5	1100	4.8	4.9	ND	ND	10.8	ND	1 U	ND	ND	2.21 J
Total BTEX	NE	4830	4.8	55.6	48.71	52.76	24.3	ND	ND	ND	ND	9.1
<b>Other VOCs (ug/L)</b>												
Chloroform	7	3.8 U	1 U	1 U	0.46 U	0.46 U	1 U	0.46 U	1 U	0.45 U	0.46 U	1 U
Cyclohexane	NE	NA	0.54 J	0.58 J	0.37 U	0.37 U	1 U	0.37 U	1 U	0.57 U	0.37 U	1 U
Dichloroethene, cis-1,2-	5	4.8 U	1 U	1 U	2.3	2.8	3.3	4	1 U	0.72 U	0.53 U	34
Dichloroethene, 1,1-	5	8.6 U	1 U	1 U	0.55 U	0.55 U	1 U	0.55 U	1 U	0.67 U	0.55 U	0.31 J
Isopropyl benzene	5	NA	0.74 J	3.4 J	0.70 J	0.77 J	1 U	0.44 U	1 U	0.37 U	0.44 U	0.51 J
Methylcyclohexane	NE	NA	0.89 J	0.81 J	0.43 U	0.43 U	1 U	0.43 U	1 U	0.47 U	0.43 U	1 U
Methylene chloride	5	16 U	1 U	1 U	0.52 U	0.52 U	1 U	0.52 U	1 U	0.38 U	0.52 U	1 U
Styrene	5	5.6 U	1 U	1	0.48 U	0.48 U	1 U	0.48 U	1 U	0.19 U	0.48 U	1 U
Tetrachloroethene	5	6.2 U	1 U	1 U	0.68 U	0.68 U	2.2	2.5	1 U	0.97 U	0.68 U	1.5
Trans-1,2-dichloroethene	5	5.0 U	1 U	1 U	0.88 J	0.69 J	1 U	0.62 J	1 U	0.44 U	0.57 U	5.6
Trichloroethene	5	3.6 U	1 U	1 U	0.56 U	0.56 U	3.8	2.9	1 U	0.34 U	0.56 U	9.5
Vinyl chloride	2	11 U	1 U	1 U	3.7	4	1 U	0.46 U	1 U	0.30 U	0.46 U	9.9
Total VOCs	NE	4830	6.97	61.39	56.29	61.02	33.6	10.02	ND	ND	ND	70.42
<b>VOC TICs (ug/L)</b>												
Total VOC TICs	NE	2245	140	132.7	NA	NA	32.6	NA	4.1	NA	NA	23.3
<b>Noncarcinogenic PAHs (ug/L)</b>												
Acenaphthene	20*	81	19	19	14 J	13 J	10 UJ	0.014 UJ	11 U	0.430 U	0.91	10 J
Acenaphthylene	NE	24 J	4.7 J	5 J	1.3 J	1.2 J	10 UJ	0.014 UJ	11 U	0.470 U	0.013 U	12 U
Anthracene	50*	22	10 U	4.3 J	3.5	3.7	10 UJ	0.062 J	11 U	1.9 U	0.041 J	2.6 J
Benzo[g,h,i]perylene	NE	ND	ND	ND	0.008 U	0.008 U	ND	0.008 U	ND	0.520 U	0.008 U	ND
Fluoranthene	50*	11	4.4 J	4.4 J	6.1	6.3	10 UJ	0.59	11 U	0.270 U	0.031 J	1.8 J
Fluorene	50*	66	14	16	8.9 J	8.8 J	10 UJ	0.100 UJ	11 U	0.370 U	0.32	8.8 J
Methylnaphthalene,2-	NE	220 J	10 U	10 U	0.390 U	0.380 U	10 UJ	0.390 U	11 U	0.490 U	0.380 U	6.4 J
Naphthalene	10*	1400	10 U	10 U	0.550 J	0.700 J	10 UJ	0.017 UJ	11 U	0.370 U	0.64	16
Phenanthrene	50*	100	4.1 J	6.9 J	5.7	6.9	10 UJ	0.042 J	11 U	1.8 U	0.013 U	8.9 J
Pyrene	50*	7.9	3.1 J	3.1 J	3.6	3.7	10 UJ	0.39	11 U	1.9 U	0.041 J	12 U
Total Noncarcinogenic PAHs	NE	1931.9	49.3	58.7	43.65	44.3	ND	1.084	ND	ND	1.983	54.5
<b>Carcinogenic PAHs (ug/L)</b>												
Benz[a]anthracene	0.002*	1.5 U	10 U	10 U	0.28	0.3	10 UJ	0.012 U	11 U	1.7 U	0.012 U	12 U
Benzo[a]pyrene	NE	ND	ND	ND	0.020 J	0.020 J	ND	0.009 U	ND	0.290 U	0.009 U	ND
Benzo[b]fluoranthene	0.002*	1.6 U	10 U	10 U	0.041 J	0.041 J	10 UJ	0.021 J	11 U	0.570 U	0.009 U	12 U
Benzo[k]fluoranthene	0.002	NR	NR	NR	0.014 U	0.014 U	NR	0.015 U	NR	0.400 U	0.014 U	NR
Chrysene	0.002*	0.7 U	10 U	10 U	0.23	0.23	10 UJ	0.019 U	11 U	0.350 U	0.018 U	12 U
Total Carcinogenic PAHs	NE	ND	ND	ND	0.571	0.591	ND	0.021	ND	ND	ND	ND
<b>Total PAHs (ug/L)</b>												
Total PAHs	NE	1931.9	49.3	58.7	44.221	44.891	ND	1.105	ND	ND	1.983	54.5
<b>Other SVOCs (ug/L)</b>												
Biphenyl,1,1-	NE	NA	4.1 J	5.4 J	0.330 U	0.330 U	10 UJ	0.330 U	11 U	0.430 U	0.330 U	12 U
Butyl benzyl phthalate	50*	4.1 U	10 U	10 U	0.440 U	0.430 U	10 UJ	0.440 U	11 U	0.560 U	0.430 U	12 U
Carbazole	NE	160 J	68 J	68 J	1.9 J	1.8 J	10 UJ	0.250 U	11 U	0.320 U	0.240 U	12 U
Dibenzofuran	NE	71	14	16	7.7 J	8.7 J	10 UJ	0.320 U	11 U	0.410 U	0.320 U	5 J
Dimethylphenol, 2,4-	50*	77	10 U	10 U	0.790 U	0.780 U	10 UJ	0.790 UJ	11 U	1.0 U	0.780 U	12 U
Di-n-butyl phthalate	50	4.2 U	10 U	10 U	6.1 U	6.0 U	10 UJ	6.1 U	11 U	7.8 U	6.0 U	12 U
Methylphenol,2-	NE	48	10 U	10 U	0.380 U	0.370 U	10 UJ	0.380 UJ	11 U	0.480 U	0.370 U	12 U
Methylphenol, 4-	NE	83	10 U	10 U	0.410 U	0.400 U	10 UJ	0.410 UJ	11 U	0.520 U	0.400 U	12 U
Phenol	NE	42	10 U	10 U	0.570 UJ	0.570 UJ	10 UJ	0.570 UJ	11 U	0.730 U	0.560 UJ	12 U
Total SVOCs	NE	2412.9	135.4	148.1	53.821	55.391	ND	1.105	ND	ND	1.983	59.5
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	NE	7718	117	143.5	NA	NA	132.9	NA	72.5	NA	NA	71.8



**Table 5-10  
East 17th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
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Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWD04 22-32 4/15/2004 H&A	17MWD04 22-32 6/7/2006 GEI	17MWD04 DUP 22-32 6/7/2006 GEI	17MWD04 22-32 8/20/2008 AECOM	17MWD04 DUP 22-32 8/20/2008 AECOM	17MWDD04 41-51 6/7/2006 GEI	17MWDD04 41-51 8/20/2008 AECOM	17MWS05 7-17 6/5/2006 GEI	17MWS05 7-17 9/10/2008 AECOM	17MWS05 7-17 9/29/2008 AECOM	17MWD05 22-32 6/5/2006 GEI
<b>Dissolved Metals (ug/L)</b>												
Arsenic	25	NA	NA	10 UJ	NA	NA	10 UJ	NA	10 U	NA	NA	10 U
Barium	1000	NA	NA	101 J	NA	NA	82.4 J	NA	200 U	NA	NA	200 U
Calcium	NE	NA	NA	134000 J	NA	NA	113000 J	NA	61900 J	NA	NA	68600 J
Chromium	50	NA	NA	1.14 J	NA	NA	0.91 J	NA	10 UJ	NA	NA	10 UJ
Cobalt	NE	NA	NA	50 UJ	NA	NA	50 UJ	NA	50 UJ	NA	NA	50 UJ
Copper	200	NA	NA	25 UJ	NA	NA	25 UJ	NA	25 U	NA	NA	25 U
Iron	300	NA	NA	218	NA	NA	206	NA	181	NA	NA	345
Magnesium	35000*	NA	NA	107000 J	NA	NA	42600 J	NA	11900 J	NA	NA	58800 J
Manganese	300	NA	NA	449 J	NA	NA	1710 J	NA	130 J	NA	NA	361 J
Nickel	100	NA	NA	40 UJ	NA	NA	40 UJ	NA	40 U	NA	NA	40 U
Potassium	NE	NA	NA	77000	NA	NA	27600	NA	10200	NA	NA	69000 J
Sodium	20000	NA	NA	282000	NA	NA	68800	NA	38700	NA	NA	493000 J
Zinc	2000*	NA	NA	34.1 J	NA	NA	42.3 J	NA	22 UJ	NA	NA	25.6 UJ
<b>Total Metals (ug/L)</b>												
Aluminum	NE	132	200 U	200 U	39.3 J	19.8 J	200 U	541	938 J	19.3 U	77.7 J-	4580 J
Arsenic	25	3.2 U	10 UJ	10 UJ	5.400 U	5.400 U	10 UJ	5.400 U	10 U	5.400 U	5.400 U	12.3 J
Barium	1000	70	105 J	103 J	58.2	53.5	87.3 J	67.3	200 UJ	255	162	200 UJ
Calcium	NE	98700	137000 J	135000 J	76800	71500	118000 J	118000	60900 J	84100	80900	62800 J
Chromium	50	1.6 U	22.5 J	12.1 J	1.520 J	1.460 J	10 UJ	1.400 U	10 UJ	1.400 U	1.400 U	13 J
Cobalt	NE	6.3	50 UJ	50 UJ	2.500 U	2.500 U	50 UJ	2.500 U	50 UJ	2.500 U	2.500 U	50 UJ
Copper	200	3.7 U	25 UJ	25 UJ	3.700 U	3.700 U	25 UJ	3.700 U	25 U	3.700 U	3.700 U	28.7 J
Iron	300	2110	344	445	417	328	506	1180	2610	2060	3810 J	12700
Lead	25	2.8	5 U	5 U	3.100 U	3.100 U	5 U	7.350 J	35.2	5.570 J	17.7	58.1
Magnesium	35000*	74100	110000	109000	53000	49300	44800	42700	11500	23300	12800	51900 J
Manganese	300	66.4	468 J	462 J	363	340	1830 J	1790	159 J	507	279	451 J
Mercury	0.7	0.10 U	0.2 UJ	0.2 UJ	0.06 U	0.06 U	0.2 UJ	0.06 U	0.2 UJ	0.06 U	0.12 J	0.2 UJ
Nickel	100	2.3 U	4.2 J	40 UJ	4.900 U	4.900 U	1.89 J	4.950 J	40 U	4.900 U	4.900 U	40 U
Potassium	NE	43100	78000 J	77400 J	37700	35200	29500 J	24600	9430 J	10100	12300	59000 J
Selenium	10	4.2 U	10 U	10 U	4.500 U	4.500 U	10 U	4.500 U	10 U	4.500 U	4.890 J	10 U
Sodium	20000	219000	292000 J	284000 J	102000	94100	72700 J	62600	35800 J	36900	47700	404000 J
Vanadium	NE	1.8 U	50 UJ	50 UJ	4.100 U	4.100 U	50 UJ	4.100 U	50 U	4.100 U	4.100 U	50 U
Zinc	2000*	5.8 U	29.9 J	24.9 J	18.5 J	30.7	29.9 J	58.5	76.6 J	20.9	21.8	75.7 J
<b>Cyanide (mg/L)</b>												
Cyanide, Amenable	NE	NA	0.42	0.22	170	10 U	0.01 UJ	10 U	0.01 UJ		10 U	0.01 UJ
Cyanide, Total	200	4.7	0.477	0.516	493	483	0.018	10 U	0.014	10 U	10 U	0.016
Chloride	NE	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NE	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NE	188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Ammonia	NE	10.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Nitrate	NE	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

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**Table 5-10  
East 17th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWD05 22-32 8/19/2008 AECOM	17MWDD05 43-51 6/5/2006 GEI	17MWDD05 43-51 8/19/2008 AECOM	17MWS06 5-15 6/5/2006 GEI	17MWS06 5-15 8/22/2008 AECOM	17MWD06 22-32 6/5/2006 GEI	17MWD06 22-32 8/21/2008 AECOM	17MWDD06 43-51 6/5/2006 GEI	17MWDD06 43-51 8/22/2008 AECOM
<b>BTEX (ug/L)</b>										
Benzene	1	9.5	1 U	0.52 U	1 U	0.52 U	1 U	0.52 U	1 U	0.52 U
Toluene	5	0.51 U	1 U	0.51 U	1 U	0.51 U	1 U	0.51 U	1 U	0.51 U
Ethylbenzene	5	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	0.50 U
m/p-Xylenes	NE	0.97 U	ND	0.97 U	ND	0.97 U	ND	0.97 U	ND	0.97 U
o-Xylene	NE	0.51 U	ND	0.51 U	ND	0.51 U	ND	0.51 U	ND	0.51 U
Xylene, Total	5	ND	1 U	ND	1 U	ND	1 U	ND	1 U	ND
Total BTEX	NE	9.5	ND	ND	ND	ND	ND	ND	ND	ND
<b>Other VOCs (ug/L)</b>										
Chloroform	7	0.46 U	0.37 J	0.46 U	0.33 J	0.46 U	1 U	0.46 U	2.4	0.46 U
Cyclohexane	NE	0.37 U	1 U	0.37 U	1 U	0.37 U	1 U	0.37 U	1 U	0.37 U
Dichloroethene, cis-1,2-	5	41	1 U	0.53 U	1 U	0.53 U	0.91 J	1.8	1 U	0.53 U
Dichloroethene, 1,1-	5	0.55 U	1 U	0.55 U	1 U	0.55 U	1 U	0.55 U	1 U	0.55 U
Isopropyl benzene	5	0.44 U	1 U	0.44 U	1 U	0.44 U	1 U	0.44 U	1 U	0.44 U
Methylcyclohexane	NE	0.43 U	1 U	0.43 U	1 U	0.43 U	1 U	0.43 U	1 U	0.43 U
Methylene chloride	5	0.52 U	1 U	0.52 U	1 U	0.52 U	1.1	0.52 U	1 U	0.52 U
Styrene	5	0.48 U	1 U	0.48 U	1 U	0.48 U	1 U	0.48 U	1 U	0.48 U
Tetrachloroethene	5	0.68 U	1 U	0.68 U	1 U	0.68 U	1 U	0.68 U	1 U	0.68 U
Trans-1,2-dichloroethene	5	9.4	1 U	0.57 U	1 U	0.57 U	1 U	0.57 U	1 U	0.57 U
Trichloroethene	5	1.8	1 U	0.56 U	1 U	0.56 U	1 U	0.56 U	1 U	0.56 U
Vinyl chloride	2	24	1 U	0.46 U	1 U	0.46 U	1 U	0.46 U	1 U	0.46 U
Total VOCs	NE	85.7	0.37	ND	0.33	ND	2.01	1.8	2.4	ND
<b>VOC TICs (ug/L)</b>										
Total VOC TICs	NE	NA	NA	NA	1	NA	NA	NA	7.8	NA
<b>Noncarcinogenic PAHs (ug/L)</b>										
Acenaphthene	20*	0.014 U	10 U	0.014 U	10 U	0.014 UJ	12 U	0.013 UJ	1.4 J	0.230 J
Acenaphthylene	NE	0.014 UJ	10 U	0.014 UJ	10 U	0.014 UJ	12 U	0.013 UJ	1.4 J	0.042 J
Anthracene	50*	0.013 U	10 U	0.013 U	10 U	0.042 J	12 U	0.031 J	10 U	0.56
Benzo[g,h,i]perylene	NE	0.009 U	ND	0.009 U	ND	0.032 J	ND	0.008 U	ND	0.008 U
Fluoranthene	50*	0.520 J	10 U	0.540 J	10 U	0.22	12 U	0.052 J	1.3 J	1.3
Fluorene	50*	0.110 UJ	10 U	0.110 UJ	10 U	0.110 UJ	12 U	0.100 UJ	2.7 J	0.100 UJ
Methylnaphthalene,2-	NE	0.410 U	10 U	0.410 U	10 U	0.390 U	12 U	0.370 U	1.8 J	0.380 U
Naphthalene	10*	0.017 U	10 U	0.018 U	10 U	0.017 UJ	12 U	0.016 UJ	7.9 J	0.017 UJ
Phenanthrene	50*	0.033 J	1.8 J	0.033 J	10 U	0.032 J	12 U	0.031 J	6 J	0.031 J
Pyrene	50*	0.37	10 U	0.37	10 U	0.15	12 U	0.041 J	10 U	0.78
Total Noncarcinogenic PAHs	NE	0.923	1.8	0.943	ND	0.476	ND	0.155	22.5	2.943
<b>Carcinogenic PAHs (ug/L)</b>										
Benz[a]anthracene	0.002*	0.087 J	10 U	0.077 J	10 U	0.013 UJ	12 U	0.012 UJ	10 U	0.012 UJ
Benzo[a]pyrene	NE	0.010 U	ND	0.022 J	ND	0.053 J	ND	0.009 U	ND	0.009 U
Benzo[b]fluoranthene	0.002*	0.033 J	10 U	0.033 J	10 U	0.063 J	12 U	0.031 J	10 U	0.009 U
Benzo[k]fluoranthene	0.002	0.015 U	NR	0.015 U	NR	0.021 J	NR	0.021 J	NR	0.015 U
Chrysene	0.002*	0.054 J	10 U	0.055 J	10 U	0.019 U	12 U	0.019 U	10 U	0.019 U
Total Carcinogenic PAHs	NE	0.174	ND	0.187	ND	0.137	ND	0.052	ND	ND
<b>Total PAHs (ug/L)</b>										
Total PAHs	NE	1.097	1.8	1.13	ND	0.613	ND	0.207	22.5	2.943
<b>Other SVOCs (ug/L)</b>										
Biphenyl, 1,1-	NE	0.360 U	10 U	0.350 U	10 U	0.340 U	12 U	0.320 U	10 U	0.330 U
Butyl benzyl phthalate	50*	0.470 U	10 U	0.460 U	10 U	0.450 U	12 U	0.420 U	3.7 J	0.430 U
Carbazole	NE	0.270 U	10 U	0.260 U	10 U	0.260 U	12 U	0.240 U	10 U	0.250 U
Dibenzofuran	NE	0.340 U	10 U	0.340 U	10 U	0.330 U	12 U	0.310 U	1.8 J	0.320 U
Dimethylphenol, 2,4-	50*	0.840 U	10 U	0.840 U	10 U	0.810 U	12 U	0.770 U	10 U	0.780 U
Di-n-butyl phthalate	50	6.5 U	10 U	6.4 U	10 U	6.2 U	12 U	5.9 U	4.1 J	6.0 U
Methylphenol,2-	NE	0.400 U	10 U	0.400 U	10 U	0.380 U	12 U	0.360 U	10 U	0.370 U
Methylphenol, 4-	NE	0.430 U	10 U	0.430 U	10 U	0.410 U	12 U	0.390 U	2.6 J	0.400 U
Phenol	NE	0.610 U	10 U	0.600 U	10 U	0.590 UJ	12 U	0.560 U	1.6 J	0.570 U
Total SVOCs	NE	1.097	1.8	1.13	ND	0.613	ND	0.207	36.3	2.943
<b>SVOC TICs (ug/L)</b>										
Total SVOC TICs	NE	NA	20.6	NA	19.8	NA	29.7	NA	21	NA

**Table 5-10  
East 17th Street Station Groundwater Analytical Results Summary  
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New York, NY**

Sample Location: Screened Interval (ft bgs): Date Collected: Investigation Conducted By:	NYSDEC AWQSGVs	17MWD05 22-32 8/19/2008 AECOM	17MWDD05 43-51 6/5/2006 GEI	17MWDD05 43-51 8/19/2008 AECOM	17MWS06 5-15 6/5/2006 GEI	17MWS06 5-15 8/22/2008 AECOM	17MWD06 22-32 6/5/2006 GEI	17MWD06 22-32 8/21/2008 AECOM	17MWDD06 43-51 6/5/2006 GEI	17MWDD06 43-51 8/22/2008 AECOM
<b>Dissolved Metals (ug/L)</b>										
Arsenic	25	NA	NA	NA	10 U	NA	NA	NA	10 U	NA
Barium	1000	NA	NA	NA	200 U	NA	NA	NA	200 U	NA
Calcium	NE	NA	NA	NA	111000 J	NA	NA	NA	286000 J	NA
Chromium	50	NA	NA	NA	10 UJ	NA	NA	NA	10 UJ	NA
Cobalt	NE	NA	NA	NA	50 UJ	NA	NA	NA	50 UJ	NA
Copper	200	NA	NA	NA	25 U	NA	NA	NA	25 U	NA
Iron	300	NA	NA	NA	315	NA	NA	NA	98.1 J	NA
Magnesium	35000*	NA	NA	NA	33300 J	NA	NA	NA	322000 J	NA
Manganese	300	NA	NA	NA	224 J	NA	NA	NA	460 J	NA
Nickel	100	NA	NA	NA	40 U	NA	NA	NA	40 U	NA
Potassium	NE	NA	NA	NA	36500	NA	NA	NA	142000 J	NA
Sodium	20000	NA	NA	NA	298000	NA	NA	NA	3750000	NA
Zinc	2000*	NA	NA	NA	37.7 J	NA	NA	NA	24.1 UJ	NA
<b>Total Metals (ug/L)</b>										
Aluminum	NE	1740	200 U	61.3 J	200 U	72.3 J	200 U	965	411 J	407
Arsenic	25	5.400 U	10 U	5.400 U	14.4 J	7.000 J	10 U	5.400 U	10 U	5.400 U
Barium	1000	80.1	200 UJ	61.9	200 UJ	121	200 UJ	45.0 J	200 UJ	93.3
Calcium	NE	63400	75200 J	76600	111000 J	73500	62000 J	49400	259000 J	353000
Chromium	50	12.8	10 UJ	1.400 U	10 UJ	1.400 U	10 U	5.37	10 UJ	1.400 U
Cobalt	NE	2.500 U	50 UJ	2.500 U	50 UJ	2.500 U	50 UJ	2.500 U	50 UJ	2.500 U
Copper	200	6.620 J	25 U	3.700 U	25 U	3.700 U	25 U	4.080 J	25 U	3.700 U
Iron	300	6910	958	1530	2590	1220	1380	3120	2070	5000
Lead	25	36.2	5 U	7.230 J	14.8	8.420 J	5 U	8.790 J	5 U	3.100 U
Magnesium	35000*	47900 J	69500	72600 J	32700	20000	44900	33500	288000 J	427000
Manganese	300	344	261 J	255	241 J	117 J	96.8 J	108 J	427 J	542 J
Mercury	0.7	0.11 J-	0.2 UJ	0.06 UJ	0.2 UJ	0.06 U	0.2 UJ	0.06 U	0.2 UJ	0.06 U
Nickel	100	11.0 J	40 U	4.900 U	40 U	4.900 U	40 U	4.900 U	40 U	4.900 U
Potassium	NE	43400 J	76400 J	61300 J	35900 J	23300 J	66500 J	53900 J	128000 J	119000 J
Selenium	10	4.500 U	10 U	4.500 U	10 U	4.500 U	10 U	4.500 U	10 U	4.500 U
Sodium	20000	286000	1970000 J	1550000 J	294000 J	194000 J	279000 J	227000 J	3590000 J	2690000
Vanadium	NE	5.930 J	50 U	4.100 U	50 U	4.100 U	50 U	8.220 J	50 U	4.100 U
Zinc	2000*	52.4	22.8 J	46.2	56.6 J	28.0 J+	26.3 J	28.1 J+	40.2 J	4.200 U
<b>Cyanide (mg/L)</b>										
Cyanide, Amenable	NE	10 U	0.01 U	10 U	0.01 U	10 U	0.01 U	10 U	0.01 U	10 U
Cyanide, Total	200	10 U	0.01 U	10 U	0.01 U	10 U	0.01 U	10 U	0.01 U	10 U
Chloride	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Ammonia	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Nitrate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

Blue indicates compound detected in sample;

Red bolding indicates concentration is above the respective NYSDEC AWQSGVs.

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**Table 5-10  
East 17th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	Summary Statistics											
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (ug/L)</b>												
Benzene	31	15	16	14	0	2200	17MWD04 22 - 32 4/15/2004 H&A	0.3	17MWS04 7 - 17 4/15/2004 H&A	168.7533333	0.35	1
Toluene	31	6	25	1	0	810	17MWD04 22 - 32 4/15/2004 H&A	0.47	17MWD05 22 - 32 6/5/2006 GEI	135.8833333	0.16	1
Ethylbenzene	31	10	21	5	0	720	17MWD04 22 - 32 4/15/2004 H&A	0.42	17MWD05 22 - 32 6/5/2006 GEI	83.789	0.05	1
m/p-Xylenes	14	1	13	0	0	24	17MWS03-082008	24	17MWS03-082008	24	0.47	0.97
o-Xylene	14	2	12	0	0	11	17MWS03-082008	0.71	17MWD03-082008	5.855	0.16	0.51
Xylene, Total	31	11	20	5	0	1100	17MWD04 22 - 32 4/15/2004 H&A	0.71	17MWD03-082008	109.0081818	-	1
Total BTEX	31	16	15	0	0	4830	17MWD04 22 - 32 4/15/2004 H&A	0.3	17MWS04 7 - 17 4/15/2004 H&A	336.47375	-	-
<b>Other VOCs (ug/L)</b>												
Chloroform	31	5	26	0	0	3.4	17MWS04 7 - 17 4/15/2004 H&A	0.33	17MWS06 5 - 17 6/5/2006 GEI	1.46	0.4	3.8
Cyclohexane	27	5	22	0	0	8.3	17MWS03 7.1 - 17.1 6/7/2006 GEI	0.54	17MWD04 22 - 32 6/7/2006 GEI	3.684	0.37	1
Dichloroethene, cis-1,2-	31	10	21	4	0	41	17MWD05-081908	0.91	17MWD06 22 - 32 6/5/2006 GEI	11.401	0.2	4.8
Dichloroethene, 1,1-	31	1	30	0	0	0.31	17MWD05 22 - 32 6/5/2006 GEI	0.31	17MWD05 22 - 32 6/5/2006 GEI	0.31	0.4	8.6
Isopropyl benzene	27	9	18	3	0	60	17MWS03 7.1 - 17.1 6/7/2006 GEI	0.51	17MWD05 22 - 32 6/5/2006 GEI	14.71333333	0.37	1
Methylcyclohexane	27	4	23	0	0	3.9	17MWS03 7.1 - 17.1 6/7/2006 GEI	0.81	Duplicate 17MWD04 22 - 32 6/7/2006 GEI	2.075	0.43	1
Methylene chloride	31	1	30	0	0	1.1	17MWD06 22 - 32 6/5/2006 GEI	1.1	17MWD06 22 - 32 6/5/2006 GEI	1.1	0.38	16
Styrene	31	1	30	0	0	1	Duplicate 17MWD04 22 - 32 6/7/2006 GEI	1	Duplicate 17MWD04 22 - 32 6/7/2006 GEI	1	0.19	5.6
Tetrachloroethene	31	4	27	0	0	4.5	17MWD03 43 - 53 6/7/2006 GEI	1.5	17MWD05 22 - 32 6/5/2006 GEI	2.675	0.3	6.2
Trans-1,2-dichloroethene	31	7	24	2	0	9.4	17MWD05-081908	0.62	17MWD04-082008	2.702857143	0.2	5
Trichloroethene	31	6	25	2	0	9.5	17MWD05 22 - 32 6/5/2006 GEI	1.8	17MWD05-081908	4.55	0.2	3.6
Vinyl chloride	31	5	26	4	0	24	17MWD05-081908	1.5	17MWD03-082008	8.62	0.3	11
Total VOCs	31	23	8	0	0	4830	17MWD04 22 - 32 4/15/2004 H&A	0.33	17MWS06 5 - 17 6/5/2006 GEI	250.7156522	-	-
<b>VOC TICs (ug/L)</b>												
Total VOC TICs	15	15	0	0	0	2245	17MWD04 22 - 32 4/15/2004 H&A	1	17MWS06 5 - 17 6/5/2006 GEI	323	-	-
<b>Noncarcinogenic PAHs (ug/L)</b>												
Acenaphthene	31	14	17	1	0	81	17MWD04 22 - 32 4/15/2004 H&A	0.12	17MWS03-082008	13.37571429	0.013	12
Acenaphthylene	31	9	22	0	0	24	17MWD04 22 - 32 4/15/2004 H&A	0.042	17MWD06-082208	4.915222222	0.013	12
Anthracene	31	16	15	0	0	22	17MWD04 22 - 32 4/15/2004 H&A	0.031	17MWD06-082108	2.65125	0.013	12
Benzo[a,h]perylene	14	1	13	0	0	0.032	17MWS06-082208	0.032	17MWS06-082208	0.032	0.008	0.52
Fluoranthene	31	21	10	0	0	11	17MWD04 22 - 32 4/15/2004 H&A	0.031	14MWS05-092908	2.060142857	0.27	12
Fluorene	31	11	20	1	0	66	17MWD04 22 - 32 4/15/2004 H&A	0.32	14MWS05-092908	13.32	0.1	12
Methylnaphthalene,2-	31	7	24	0	0	220	17MWD04 22 - 32 4/15/2004 H&A	1.4	17MWD03 21.6 - 31.6 4/15/2004 H&A	38.41428571	0.37	12
Naphthalene	31	13	18	5	0	1400	17MWD04 22 - 32 4/15/2004 H&A	0.55	17MWD04-082008	124.1838462	0.016	12
Phenanthrene	31	19	12	1	0	100	17MWD04 22 - 32 4/15/2004 H&A	0.031	17MWD06-082208	8.792947368	0.013	12
Pyrene	31	19	12	0	0	7.9	17MWD04 22 - 32 4/15/2004 H&A	0.032	17MWS03-082008	1.472210526	1.9	12
Total Noncarcinogenic PAHs	17	11	6	0	0	1931.9	17MWD04 22 - 32 4/15/2004 H&A	1.8	17MWD05 43 - 51 6/5/2006 GEI	219.7352727	-	-
<b>Carcinogenic PAHs (ug/L)</b>												
Benzo[a]anthracene	31	6	25	6	0	0.3	17MWD04-082008(DUP)	0.077	17MWD05-081908	0.207333333	0.012	12
Benzo[a]pyrene	14	4	10	0	0	0.053	17MWS06-082208	0.02	DUP 17MWD04-082008	0.02875	0.009	0.29
Benzo[b]fluoranthene	31	9	22	9	0	0.1	17MWS04 7 - 17 4/15/2004 H&A	0.021	17MWD04-082008	0.042777778	0.009	12
Benzo[k]fluoranthene	14	2	12	0	0	0.021	17MWS06-082208	0.021	17MWS06-082208	0.021	0.014	0.4
Chrysene	31	6	25	6	0	0.3	17MWD03 21.6 - 31.6 4/15/2004 H&A	0.054	17MWD05-081908	0.178166667	0.018	12
Total Carcinogenic PAHs	31	16	15	0	0	0.6	17MWD03 21.6 - 31.6 4/15/2004 H&A	-	14MWS05-092908	0.082561813	-	-
<b>Total PAHs (ug/L)</b>												
Total PAHs	31	24	7	0	0	1931.9	17MWD04 22 - 32 4/15/2004 H&A	0.064	17MWD03-082008	106.2556667	-	-
<b>Other SVOCs (ug/L)</b>												
Biphenyl,1,1-	27	2	25	0	0	5.4	DUP 17MWD04 22 - 32 6/7/2006 GEI	4.1	17MWD04 22 - 32 6/7/2006 GEI	4.75	0.32	12
Butyl benzyl phthalate	31	2	29	0	0	3.7	17MWD06 43 - 51 6/5/2006 GEI	0.6	17MWS03 7.1 - 17.1 4/15/2004 H&A	2.15	0.4	12
Carbazole	31	7	24	0	0	160	17MWD04 22 - 32 4/15/2004 H&A	1.8	DUP 17MWD04-082008	44.95714286	0.081	12
Dibenzofuran	31	9	22	0	0	71	17MWD04 22 - 32 4/15/2004 H&A	1.8	17MWD06 43 - 51 6/5/2006 GEI	14.88888889	0.3	12
Dimethylphenol, 2,4-	31	2	29	1	0	77	17MWD04 22 - 32 4/15/2004 H&A	7	17MWS04 7 - 17 4/15/2004 H&A	42	0.77	12
Di-n-butyl phthalate	31	1	30	0	0	4.1	17MWD06 43 - 51 6/5/2006 GEI	4.1	17MWD06 43 - 51 6/5/2006 GEI	4.1	0.4	12
Methylphenol,2-	31	2	29	0	0	48	17MWD04 22 - 32 4/15/2004 H&A	7.6	17MWS04 7 - 17 4/15/2004 H&A	27.8	0.36	12
Methylphenol, 4-	31	3	28	0	0	83	17MWD04 22 - 32 4/15/2004 H&A	2.6	17MWD06 43 - 51 6/5/2006 GEI	34.2	0.39	12
Phenol	31	5	26	0	0	42	17MWD04 22 - 32 4/15/2004 H&A	0.6	17MWD03 21.6 - 31.6 4/15/2004 H&A	10.54	0.56	12
Total SVOCs	31	24	7	0	0	2412.9	17MWD04 22 - 32 4/15/2004 H&A	0.064	17MWD03-082008	138.0598333	-	-
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	17	17	0	0	0	7718	17MWD04 22 - 32 4/15/2004 H&A	19.8	17MWS06 5 - 17 6/5/2006 GEI	644.2176471	-	-
<b>Dissolved Metals (ug/L)</b>												
Arsenic	9	0	9	0	0	-	-	-	-	-	10	10
Barium	9	5	4	0	0	101	DUP 17MWD04 22 - 32 6/7/2006 GEI	42.4	17MWD03 43 - 53 6/7/2006 GEI	74.44	200	200
Calcium	9	9	0	0	0	286000	17MWD06 43 - 51 6/5/2006 GEI	61900	17MWS05 7 - 17 6/5/2006 GEI	131488.8889	-	-
Chromium	9	4	5	0	0	3.89	17MWD03 21.6 - 31.6 6/7/2006 GEI	0.65	17MWS03 7.1 - 17.1 6/7/2006 GEI	1.6475	10	10
Cobalt	9	1	8	0	0	2.32	17MWD03 21.6 - 31.6 6/7/2006 GEI	2.32	17MWD03 21.6 - 31.6 6/7/2006 GEI	2.32	50	50
Copper	9	1	8	0	0	7.49	17MWD03 43 - 53 6/7/2006 GEI	7.49	17MWD03 43 - 53 6/7/2006 GEI	7.49	25	25
Iron	9	9	0	4	0	3000	17MWS03 7.1 - 17.1 6/7/2006 GEI	98.1	17MWD06 43 - 51 6/5/2006 GEI	560.1222222	-	-
Magnesium	9	9	0	7	0	322000	17MWD06 43 - 51 6/5/2006 GEI	11900	17MWS05 7 - 17 6/5/2006 GEI	91355.55556	-	-
Manganese	9	9	0	7	0	1710	17MWD04 41 - 51 6/7/2006 GEI	130	17MWS05 7 - 17 6/5/2006 GEI	535.1111111	-	-
Nickel	9	1	8	0	0	5.54	17MWD03 43 - 53 6/7/2006 GEI	5.54	17MWD03 43 - 53 6/7/2006 GEI	5.54	40	40
Potassium	9	9	0	0	0	142000	17MWD06 43 - 51 6/5/2006 GEI	10200	17MWS05 7 - 17 6/5/2006 GEI	63277.77778	-	-
Sodium	9	9	0	9	0	3750000	17MWD06 43 - 51 6/5/2006 GEI	38700	17MWS05 7 - 17 6/5/2006 GEI	629500	-	-
Zinc	9	6	3	0	0	42.3	17MWD04 41 - 51 6/7/2006 GEI	34.1	DUP 17MWD04 22 - 32 6/7/2006 GEI	37.8166667	22	25.6
<b>Total Metals (ug/L)</b>												
Aluminum	31	23	8	0	0	11300	17MWS04 7 - 17 4/15/2004 H&A	19.8	DUP 17MWD04-082008	1130.704348	19.3	200
Arsenic	31	7	24	0	0	16	17MWD03 21.6 - 31.6 6/7/2006 GEI	7	17MWS06-082208	11.87	3.2	10
Barium	31	25	6	0	0	255	17MWS05-091008	43.9	17MWD03 43 - 53 6/7/2006 GEI	120.288	200	200
Calcium	31	31	0	0	0	363000	17MWS04-082008	49400	17MWD06-082108	134435.4839	-	-
Chromium	31	9	22	0	0	22.5	17MWD04 22 - 32 6/7/2006 GEI	1.46	DUP 17MWD04-082008	9.765555556	1.4	21.6
Cobalt	31	5	26	0	0	6.3	17MWD04 22 - 32 4/15/2004 H&A	2.8	17MWD03 21.6 - 31.6 4/15/2004 H&A	4.408	1.7	50
Copper	31	7	24	0	0	28.7	17MWD05 22 - 32 6/5/2006 GEI	3.9	17MWS04-082008	11.43285714	3.7	25
Iron	31	31	0	31	0	36600	17MWS03 7.1 - 17.1 4/15/2004 H&A	328	DUP 17MWD04-082008	6561.387097	-	-
Lead	31	20	11	4	0	110	17MWS04 7 - 17 4/15/2004 H&A	2.8	17MWD04 22 - 32 4/15/2004 H&A	19.2945	3.1	5
Magnesium	31	31	0	24	0	427000	17MWD06-082208	11500	17MWS05 7 - 17 6/5/2006 GEI	80783.87097	-	-
Manganese	31	31	0	22	0	1830	17MWD04 41 - 51 6/7/2006 GEI	66.4	17MWD04 22 - 32 4/15/2004 H&A	517.1677419	-	-
Mercury	31	4	27	1	0	0.93	17MWS04 7 - 17 4/15/20					

**Table 5-11  
East 19th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample Location:		19MWS05	19MWS05 DUP	19MWS05	19MWS05	19MWD05	19MWD05	19MWD05
Screened Interval (ft bgs):	<b>NYSDEC AWQSGVs</b>	5.5-15.5	5.5-15.5	5.5-15.5	5.5-15.5	20.5-30.5	20.5-30.5	20.5-30.5
Date Collected:		4/19/2004	4/19/2004	6/7/2006	8/19/2008	4/19/2004	6/9/2006	8/19/2008
Investigation Conducted By:		H&A	H&A	GEI	AECOM	H&A	GEI	AECOM
<b>BTEX (ug/L)</b>								
Benzene	1	0.6	1.3U	1U	0.52 U	0.3U	1U	0.52 U
Toluene	5	4.6	4.4	1 U	0.51 U	0.2 U	1 U	0.51 U
Ethylbenzene	5	0.6	1.8 U	1 U	0.50 U	0.4 U	1 U	0.50 U
Total BTEX	NE	5.8	4.4	ND	ND	ND	ND	ND
<b>Other VOCs (ug/L)</b>								
Acetone	50*	34	38 J	5 UJ	2.7 U	1.0 UJ	5 UJ	2.7 U
Dichloroethene, cis-1,2-	5	0.2 U	1.2 U	1 U	0.53 U	2.2	7.1	10
Styrene	5	1.1	1.4 U	1 U	0.48 U	0.3 U	1 U	0.48 U
Tetrachloroethene	5	0.3 U	1.6 U	1 U	0.68 U	0.7	1 U	0.68 U
Trans-1,2-dichloroethene	5	0.2 U	1.2 U	1 U	0.57 U	0.2 U	0.52 J	0.57 UJ
Trichloroethene	5	0.2 U	0.9 U	1 U	0.56 U	1.2	1.3	0.56 U
Vinyl chloride	2	0.5 U	2.6 U	1 U	0.46 U	0.5 U	0.44 J	0.46 U
Total VOCs	NE	40.9	42.4	ND	ND	4.1	9.36	10
<b>VOC TICs (ug/L)</b>								
Total VOC TICs	NE	226	192	NA	NA	NA	NA	NA
<b>Noncarcinogenic PAHs (ug/L)</b>								
Acenaphthene	20*	0.1 U	0.1 U	10 U	0.015 U	0.4	10 U	0.014 U
Phenanthrene	50*	1.1	0.8	10 U	0.034 J	0.4	10 U	0.160 J
Total Noncarcinogenic PAHs	NE	1.1	0.8	ND	0.34	0.8	ND	0.16
<b>Total PAHs (ug/L)</b>								
Total PAHs	NE	1.1	0.8	ND	0.034	0.8	ND	0.16
<b>Other SVOCs (ug/L)</b>								
Diethyl phthalate	50*	0.3 U	0.3 U	10U	0.370 U	4.9	10U	0.360 U
Methylphenol, 4-	NE	12	0.5 U	10 U	0.450 U	0.5 U	10 U	0.430 U
Phenol	NE	0.5 U	0.5 U	10 U	0.630 U	1.3	10 U	0.610 U
Total SVOCs	NE	13.1	0.8	ND	0.034	7	ND	0.16
<b>SVOC TICs (ug/L)</b>								
Total SVOC TICs	NE	1952	2014.2	21.9	NA	NA	68.7	NA
<b>Total Metals (ug/L)</b>								
Aluminum	NE	1870	1940	200U	685	223	200U	358
Arsenic	25	7.4	7.3	10 UJ	5.400 U	3.2 U	10 U	5.400 U
Barium	1000	122	124	107 J	109	259	262	271
Calcium	NE	177000	176000	155000 J	124000	48700	43300 J	50700
Chromium	50	NA	NA	NA	1.400 U	NA	NA	1.560 J
Copper	200	6	7.5	25 UJ	3.700 U	3.7 U	25 U	3.700 U
Iron	300	14600	14700	472	1470	14500	14300	13800
Lead	25	50.1	55.2	5 U	15	2.9 U	5 UJ	7.760 J
Magnesium	35000*	40100	40200	39900	22700 J	58700	61100 J	69800 J
Manganese	300	542	542	202 J	112	723	286	334
Mercury	0.7	0.12	0.13	0.20 UJ	0.06 UJ	0.20 U	0.2 J	0.06 UJ
Nickel	100	NA	NA	NA	4.900 U	NA	NA	12.0 J
Potassium	NE	20600	20400	30400 J	22000 J	39800	83700	65800 J
Sodium	20000	69600	69000	115000 J	67900	47300	758000	496000
Vanadium	NE	7.4	5.4	50 UJ	4.100 U	1.8 U	50 U	4.100 U
Zinc	2000*	20.4 U	23.0 U	26.3 J	41.4	6.0 U	20 UJ	34.2
<b>Inorganics (mg/L)</b>								
Chloride	250000	146	148	NA	NA	629	NA	NA
Fluoride	NE	0.11	0.12	NA	NA	0.37	NA	NA
Sulfate	NE	49.8	52.2	NA	NA	46	NA	NA
Nitrogen, Ammonia	NE	5.6	5.5	NA	NA	31.6	NA	NA

**NOTES:**

Blue indicates a detected result value that does not exceed the AWQSGV for groundwater.

Red and bold indicates a detected groundwater result exceeding the AWQSGV

Table Abbreviations, References, and additional Notes are listed at the front of the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-11  
East 19th Street Station Groundwater Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

	Summary Statistics											
	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for Non-Detects	Max DL for Non-Detects
<b>BTEX (ug/L)</b>												
Benzene	7	1	6	0	0	0.6	19MWS05_5.5-15.5	0.6	19MWS05_5.5-15.5	0.6	0.3	1.3
Toluene	7	2	5	0	0	4.6	19MWS05_5.5-15.5	4.4	19MWS05 DUP_5.5-15.5	4.5	0.2	1
Ethylbenzene	7	1	6	0	0	0.6	19MWS05_5.5-15.5	0.6	19MWS05_5.5-15.5	0.6	0.4	1.8
Total BTEX	7	2	5	0	0	5.8	19MWS05_5.5-15.5	4.4	19MWS05 DUP_5.5-15.5	5.1	-	-
<b>Other VOCs (ug/L)</b>												
Acetone	7	2	5	0	0	38	19MWS05 DUP_5.5-15.5	34	19MWS05_5.5-15.5	36	1	5
Dichloroethene, cis-1,2-	7	3	4	2	0	10	19MWD05_20.5-30.5	2.2	19MWD05_20.5-30.5	6.433333333	0.2	1.2
Styrene	7	1	6	0	0	1.1	19MWS05_5.5-15.5	1.1	19MWS05_5.5-15.5	1.1	0.3	1.4
Tetrachloroethene	7	1	6	0	0	0.7	19MWD05_20.5-30.5	0.7	19MWD05_20.5-30.5	0.7	0.3	1.6
Trans-1,2-dichloroethene	7	1	6	0	0	0.52	19MWD05_20.5-30.5	0.52	19MWD05_20.5-30.5	0.52	0.2	1.2
Trichloroethene	7	2	5	0	0	1.3	19MWD05_20.5-30.5	1.2	19MWD05_20.5-30.5	1.25	0.2	1
Vinyl chloride	7	1	6	0	0	0.44	19MWD05_20.5-30.5	0.44	19MWD05_20.5-30.5	0.44	0.46	2.6
Total VOCs	7	5	2	0	0	42.4	19MWS05 DUP_5.5-15.5	4.1	19MWD05_20.5-30.5	21.352	-	-
<b>VOC TICs (ug/L)</b>												
Total VOC TICs	2	2	0	0	0	226	19MWS05_5.5-15.5	192	19MWS05 DUP_5.5-15.5	209	-	-
<b>Noncarcinogenic PAHs (ug/L)</b>												
Acenaphthene	7	1	6	0	0	0.4	19MWD05_20.5-30.5	0.4	19MWD05_20.5-30.5	0.4	0.014	10
Phenanthrene	7	5	2	0	0	1.1	19MWS05_5.5-15.5	0.034	19MWS05_5.5-15.5	0.4988	10	10
Total Noncarcinogenic PAHs	5	3	2	0	0	1.1	19MWS05_5.5-15.5	0.8	19MWD05_20.5-30.5	0.9	-	-
<b>Total PAHs (ug/L)</b>												
Total PAHs	7	5	2	0	0	1.1	19MWS05_5.5-15.5	0.034	19MWS05_5.5-15.5	0.5788	-	-
<b>Other SVOCs (ug/L)</b>												
Diethyl phthalate	7	1	6	0	0	4.9	19MWD05_20.5-30.5	4.9	19MWD05_20.5-30.5	4.9	0.3	10
Methylphenol, 4-	7	1	6	0	0	12	19MWS05_5.5-15.5	12	19MWS05_5.5-15.5	12	0.43	10
Phenol	7	1	6	0	0	1.3	19MWD05_20.5-30.5	1.3	19MWD05_20.5-30.5	1.3	0.5	10
Total SVOCs	7	5	2	0	0	13.1	19MWS05_5.5-15.5	0.034	19MWS05_5.5-15.5	4.2188	-	-
<b>SVOC TICs (ug/L)</b>												
Total SVOC TICs	4	4	0	0	0	2014.2	19MWS05 DUP_5.5-15.5	21.9	19MWS05_5.5-15.5	1014.2	-	-
<b>Total Metals (ug/L)</b>												
Aluminum	7	5	2	0	0	1940	19MWS05 DUP_5.5-15.5	223	19MWD05_20.5-30.5	1015.2	200	200
Arsenic	7	2	5	0	0	7.4	19MWS05_5.5-15.5	7.3	19MWS05 DUP_5.5-15.5	7.35	3.2	10
Barium	7	7	0	0	0	271	19MWD05_20.5-30.5	107	19MWS05_5.5-15.5	179.1428571	-	-
Calcium	7	7	0	0	0	177000	19MWS05_5.5-15.5	43300	19MWD05_20.5-30.5	110671.4286	-	-
Chromium	2	1	1	0	0	1.56	19MWD05_20.5-30.5	1.56	19MWD05_20.5-30.5	1.56	1.4	1.4
Copper	7	2	5	0	0	7.5	19MWS05 DUP_5.5-15.5	6	19MWS05_5.5-15.5	6.75	3.7	25
Iron	7	7	0	7	0	14700	19MWS05 DUP_5.5-15.5	472	19MWS05_5.5-15.5	10548.85714	-	-
Lead	7	4	3	2	0	55.2	19MWS05 DUP_5.5-15.5	7.76	19MWD05_20.5-30.5	32.015	2.9	5
Magnesium	7	7	0	6	0	69800	19MWD05_20.5-30.5	22700	19MWS05_5.5-15.5	47500	-	-
Manganese	7	7	0	4	0	723	19MWD05_20.5-30.5	112	19MWS05_5.5-15.5	391.5714286	-	-
Mercury	7	3	4	0	0	0.2	19MWD05_20.5-30.5	0.12	19MWS05_5.5-15.5	0.15	0.06	0.2
Nickel	2	1	1	0	0	12	19MWD05_20.5-30.5	12	19MWD05_20.5-30.5	12	4.9	4.9
Potassium	7	7	0	0	0	83700	19MWD05_20.5-30.5	20400	19MWS05 DUP_5.5-15.5	40385.71429	-	-
Sodium	7	7	0	7	0	758000	19MWD05_20.5-30.5	47300	19MWD05_20.5-30.5	231828.5714	-	-
Vanadium	7	2	5	0	0	7.4	19MWS05_5.5-15.5	5.4	19MWS05 DUP_5.5-15.5	6.4	1.8	50
Zinc	7	3	4	0	0	41.4	19MWS05_5.5-15.5	26.3	19MWS05_5.5-15.5	33.96666667	6	23
<b>Inorganics (mg/L)</b>												
Chloride	3	3	0	0	0	629	19MWD05_20.5-30.5	146	19MWS05_5.5-15.5	307.6666667	-	-
Fluoride	3	3	0	0	0	0.37	19MWD05_20.5-30.5	0.11	19MWS05_5.5-15.5	0.2	-	-
Sulfate	3	3	0	0	0	52.2	19MWS05 DUP_5.5-15.5	46	19MWD05_20.5-30.5	49.33333333	-	-
Nitrogen, Ammonia	3	3	0	0	0	31.6	19MWD05_20.5-30.5	5.5	19MWS05 DUP_5.5-15.5	14.23333333	-	-

**Table 5-12  
Ambient Air Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	STY-AMB-3 Outdoor Air 1/29/2003 RETEC	STY-AMB-4 Outdoor Air 1/29/2003 RETEC	AMB-2 Outdoor Air 3/16/2006 GEI	AMB-4 Outdoor Air 3/16/2006 GEI
<b>BTEX (ug/m<sup>3</sup>)</b>						
Benzene	4.8	2.3	<b>3</b>	<b>3.3</b>	2.6 U	2.4 U
Ethylbenzene	1	0.48	<b>1.2</b>	<b>1.3</b>	3.5 U	3.2 U
Toluene	5.1	2.4	<b>7.7</b>	<b>8.2</b>	<b>3.5</b>	2.8 U
Xylene, o-	1.2	0.56	<b>1.3</b>	<b>1.2</b>	3.5 U	3.2 U
Xylenes, m,p	1	0.48	<b>4</b>	<b>4</b>	3.5 U	3.2 U
<b>Other VOCs (ug/m<sup>3</sup>)</b>						
2,2,4-Trimethylpentane (Isooctane)	0.67	0.33	ND	ND	3.7 U	3.5 U
Acetone	30	14	<b>24</b>	<b>9.8</b>	7.6 U	7.1 U
Allyl chloride	NE	NE	NA	NA	10 U	9.4 U
Benzyl chloride	NE	NE	ND	ND	4.1 U	3.8 U
Bromodichloromethane	NE	NE	ND	ND	5.4 U	5 U
Bromoform	NE	NE	ND	ND	8.3 U	7.7 U
Bromomethane	0.45	<0.25	ND	ND	3.1 U	2.9 U
Butadiene, 1,3-	NE	NE	ND	ND	1.8 U	1.6 U
Butanone,2-	5.3	2.6	<b>4.7</b>	ND	2.4 U	2.2 U
Carbon disulfide	NE	NE	ND	ND	2.5 U	2.3 U
Carbon tetrachloride	1.2	0.6	ND	ND	5 U	4.7 U
Chlorobenzene	0.38	<0.25	ND	ND	3.7 U	3.4 U
Chloroethane	0.4	<0.25	ND	ND	2.1 U	2 U
Chloroform	0.48	<0.25	ND	ND	3.9 U	3.6 U
Chloromethane	4.3	1.8	<b>1.3</b>	<b>1.5</b>	6.6 U	6.2 U
Cryofluorane	0.48	<0.25	ND	ND	5.6 U	5.2 U
Cyclohexane	0.94	0.43	ND	ND	2.8 U	2.5 U
Dibromochloromethane	NE	NE	ND	ND	6.8 U	6.3 U
Dibromoethane,1,2-	0.37	<0.25	ND	ND	6.2 U	5.7 U
Dichlorobenzene,1,2-	0.42	<0.25	ND	ND	4.8 U	4.4 U
Dichlorobenzene,1,3-	0.42	<0.25	ND	ND	4.8 U	4.4 U
Dichlorobenzene,1,4-	0.46	<0.25	ND	ND	4.8 U	4.4 U
Dichlorodifluoromethane	10	4.2	<b>4.6</b>	<b>4.4</b>	4 U	3.7 U
Dichloroethane,1,1-	0.36	<0.25	ND	ND	3.2 U	3 U
Dichloroethane,1,2-	0.42	<0.25	ND	ND	3.2 U	3 U
Dichloroethene, cis-1,2-	0.38	<0.25	ND	ND	3.2 U	2.9 U
Dichloroethene,1,1-	0.4	<0.25	ND	ND	3.2 U	2.9 U
Dichloropropane,1,2-	0.4	<0.25	ND	ND	3.7 U	3.4 U
Dichloropropene, cis-1,3	0.4	<0.25	ND	ND	3.6 U	3.4 U
Dichloropropene, trans-1,3	0.41	<0.25	ND	ND	3.6 UJ	3.4 UJ
Dioxane,1,4-	NE	NE	ND	ND	11.5 U	10.8 U
Ethanol	34	16	<b>25</b>	<b>28</b>	<b>6.6</b>	<b>6</b>
Ethyltoluene, p-	NE	NE	ND	ND	3.9 U	3.6 U
Heptane, n-	2.2	1	ND	ND	3.3 U	3 U
Hexachlorobutadiene	0.46	<0.25	ND	ND	34.1 U	32 U
Hexane, n-	2	0.88	ND	ND	2.8 U	2.6 U
Hexanone,2-	NE	NE	ND	ND	13.1 U	12.3 U
Isopropyl benzene	0.38	<0.25	NA	NA	3.9 U	3.6 U
<b>BTEX (ug/m<sup>3</sup>)</b>						
Benzene	4.8	2.3	<b>3</b>	<b>3.3</b>	2.6 U	2.4 U
Ethylbenzene	1	0.48	<b>1.2</b>	<b>1.3</b>	3.5 U	3.2 U
Toluene	5.1	2.4	<b>7.7</b>	<b>8.2</b>	<b>3.5</b>	2.8 U
Xylene, o-	1.2	0.56	<b>1.3</b>	<b>1.2</b>	3.5 U	3.2 U
Xylenes, m,p	1	0.48	<b>4</b>	<b>4</b>	3.5 U	3.2 U
<b>Other VOCs (ug/m<sup>3</sup>)</b>						
2,2,4-Trimethylpentane (Isooctane)	0.67	0.33	ND	ND	3.7 U	3.5 U
Acetone	30	14	<b>24</b>	<b>9.8</b>	7.6 U	7.1 U
Allyl chloride	NE	NE	NA	NA	10 U	9.4 U
Benzyl chloride	NE	NE	ND	ND	4.1 U	3.8 U
Bromodichloromethane	NE	NE	ND	ND	5.4 U	5 U
Bromoform	NE	NE	ND	ND	8.3 U	7.7 U
Bromomethane	0.45	<0.25	ND	ND	3.1 U	2.9 U
Butadiene, 1,3-	NE	NE	ND	ND	1.8 U	1.6 U
Butanone,2-	5.3	2.6	<b>4.7</b>	ND	2.4 U	2.2 U
Carbon disulfide	NE	NE	ND	ND	2.5 U	2.3 U
Carbon tetrachloride	1.2	0.6	ND	ND	5 U	4.7 U
Chlorobenzene	0.38	<0.25	ND	ND	3.7 U	3.4 U
Chloroethane	0.4	<0.25	ND	ND	2.1 U	2 U
Chloroform	0.48	<0.25	ND	ND	3.9 U	3.6 U
Chloromethane	4.3	1.8	<b>1.3</b>	<b>1.5</b>	6.6 U	6.2 U
Cryofluorane	0.48	<0.25	ND	ND	5.6 U	5.2 U
Cyclohexane	0.94	0.43	ND	ND	2.8 U	2.5 U
Dibromochloromethane	NE	NE	ND	ND	6.8 U	6.3 U
Dibromoethane,1,2-	0.37	<0.25	ND	ND	6.2 U	5.7 U
Dichlorobenzene,1,2-	0.42	<0.25	ND	ND	4.8 U	4.4 U
Dichlorobenzene,1,3-	0.42	<0.25	ND	ND	4.8 U	4.4 U
Dichlorobenzene,1,4-	0.46	<0.25	ND	ND	4.8 U	4.4 U
Dichlorodifluoromethane	10	4.2	<b>4.6</b>	<b>4.4</b>	4 U	3.7 U
Dichloroethane,1,1-	0.36	<0.25	ND	ND	3.2 U	3 U
Dichloroethane,1,2-	0.42	<0.25	ND	ND	3.2 U	3 U
Dichloroethene, cis-1,2-	0.38	<0.25	ND	ND	3.2 U	2.9 U
Dichloroethene,1,1-	0.4	<0.25	ND	ND	3.2 U	2.9 U
Dichloropropane,1,2-	0.4	<0.25	ND	ND	3.7 U	3.4 U
Dichloropropene, cis-1,3	0.4	<0.25	ND	ND	3.6 U	3.4 U
Dichloropropene, trans-1,3	0.41	<0.25	ND	ND	3.6 UJ	3.4 UJ
Dioxane,1,4-	NE	NE	ND	ND	11.5 U	10.8 U
Ethanol	34	16	<b>25</b>	<b>28</b>	<b>6.6</b>	<b>6</b>
Ethyltoluene, p-	NE	NE	ND	ND	3.9 U	3.6 U
Heptane, n-	2.2	1	ND	ND	3.3 U	3 U
Hexachlorobutadiene	0.46	<0.25	ND	ND	34.1 U	32 U
Hexane, n-	2	0.88	ND	ND	2.8 U	2.6 U
Hexanone,2-	NE	NE	ND	ND	13.1 U	12.3 U
Isopropyl benzene	0.38	<0.25	NA	NA	3.9 U	3.6 U

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-13  
Air and Soil Gas Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	STY-IA-1E14 CRAWL Indoor Air 01/29/2003 RETEC	IA-1E14-1 Indoor Air 3/16/2006 GEI	STY-IA-2E14 STAIRS Indoor Air 1/29/2003 RETEC	IA-2E14-1 Indoor Air 3/16/2006 GEI	STY-IA-3E14 RAMP Indoor Air 01/29/2003 RETEC	IA-3E14-1 Indoor Air 3/16/2006 GEI	STY-IA-4E14 STAIRS Indoor Air 1/29/2003 RETEC	IA-4E14-1 Indoor Air 3/16/2006 GEI	STY-IA-5E14 STAIRS Indoor Air 1/29/2003 RETEC	IA-5E14-1 Indoor Air 3/16/2006 GEI
<b>East 14th Street Station</b>												
<b>BTEX (ug/m<sup>3</sup>)</b>												
Benzene	13	5.9	<b>13</b>	2.8 U	<b>4</b>	<b>2.8</b>	<b>5.5</b>	2.2 U	<b>8.8</b>	<b>2.9</b>	<b>4.8</b>	2.8 U
Ethylbenzene	6.4	2.8	<b>4.3</b>	3.8 U	<b>3.8</b>	3.8 U	<b>2.3</b>	3 U	<b>3.5</b>	3.6 U	<b>3.7</b>	3.8 U
Toluene	57	24.8	<b>24</b>	3.3 U	<b>14</b>	<b>37.7</b>	<b>15</b>	<b>8.3</b>	<b>27</b>	<b>31.3</b>	<b>16</b>	<b>9.4</b>
Xylene, o-	7.1	3.1	<b>8</b>	3.8 U	<b>6</b>	3.8 U	<b>3.2</b>	3 U	<b>4.7</b>	3.6 U	<b>5.8</b>	3.8 U
Xylenes, m,p	11	4.6	<b>20</b>	3.8 U	<b>18</b>	<b>3.9</b>	<b>9.5</b>	3 U	<b>15</b>	<b>5.6</b>	<b>14</b>	3.8 U
<b>Other VOCs (ug/m<sup>3</sup>)</b>												
2,2,4-Trimethylpentane (Isooctane)	5	2.1	<b>5</b>	4.1 U	ND	4.1 U	ND	3.3 U	<b>3.9</b>	3.9 U	ND	4.1 U
Acetone	115	52	<b>18</b>	<b>17.1</b>	<b>16</b>	<b>10.5</b>	<b>38</b>	<b>15.5</b>	<b>25</b>	<b>12.6</b>	<b>33</b>	<b>10</b>
Allyl chloride	NE	NE	NA	11 U	NA	11 U	NA	8.8 U	NA	10.6 U	NA	11 U
Benzyl chloride	NE	NE	ND	4.6 U	ND	4.6 U	ND	3.6 U	ND	4.4 U	ND	4.6 U
Bromodichloromethane	NE	NE	ND	5.9 U	ND	5.9 U	ND	4.7 U	ND	5.6 U	ND	5.9 U
Bromoform	NE	NE	ND	9.1 U	ND	9.1 U	ND	7.2 U	ND	8.7 U	ND	9.1 U
Bromomethane	0.48	<0.25	ND	3.4 U	ND	3.4 U	ND	2.7 U	ND	3.3 U	ND	3.4 U
Butadiene, 1,3-	NE	NE	<b>11</b>	1.9 U	ND	1.9 U	ND	1.5 U	<b>2</b>	1.9 U	ND	1.9 U
Butanone,2-	16	7.3	<b>3.1</b>	<b>2.6 U</b>	<b>23</b>	<b>2.6 U</b>	<b>4.9</b>	<b>2.2</b>	<b>3.7</b>	<b>2.5 U</b>	<b>6.8</b>	<b>2.6 U</b>
Carbon disulfide	NE	NE	ND	2.7 U	<b>2.7</b>	2.7 U	ND	2.2 U	ND	2.6 U	<b>7.8</b>	2.7 U
Carbon tetrachloride	1.3	0.59	ND	5.5 U	ND	5.5 U	ND	4.4 U	ND	5.3 U	<b>1.7</b>	5.5 U
Chlorobenzene	0.41	<0.25	ND	4.1 U	ND	4.1 U	ND	3.2 U	ND	3.9 U	ND	4.1 U
Chloroethane	0.39	<0.25	ND	2.3 U	ND	2.3 U	ND	1.8 U	ND	2.2 U	<b>1.2</b>	<b>2.3 U</b>
Chloroform	1.2	0.54	<b>3.8</b>	4.3 U	ND	4.3 U	<b>2.6</b>	3.4 U	<b>1</b>	4.1 U	<b>2.9</b>	4.3 U
Chloromethane	4.2	1.8	<b>1.3</b>	7.2 U	<b>1.6</b>	7.2 U	<b>1.6</b>	5.8 U	<b>1.8</b>	7 U	<b>3.8</b>	7.2 U
Cryofluorane	0.42	<0.25	ND	6.2 U	ND	6.2 U	ND	4.9 U	ND	5.9 U	ND	6.2 U
Cyclohexane	6.3	2.6	ND	3 U	ND	3 U	ND	2.4 U	ND	2.9 U	ND	3 U
Dibromochloromethane	NE	NE	ND	7.5 U	ND	7.5 U	ND	5.9 U	ND	7.1 U	ND	7.5 U
Dibromoethane, 1,2-	0.38	<0.25	ND	6.8 U	ND	6.8 U	ND	5.4 U	ND	6.5 U	ND	6.8 U
Dichlorobenzene, 1,2-	0.48	<0.25	ND	5.3 U	ND	5.3 U	ND	4.2 U	ND	5 U	ND	5.3 U
Dichlorobenzene, 1,3-	0.46	<0.25	ND	5.3 U	ND	5.3 U	ND	4.2 U	ND	5 U	ND	5.3 U
Dichlorobenzene, 1,4-	1.2	0.54	<b>9.8</b>	5.3 U	<b>1.1</b>	5.3 U	ND	4.2 U	ND	5 U	<b>1.2</b>	5.3 U
Dichlorodifluoromethane	10	4.1	<b>10</b>	<b>45</b>	<b>3.6</b>	4.4 U	<b>6.1</b>	3.5 U	<b>5</b>	4.2 U	<b>4.3</b>	4.4 U
Dichloroethane, 1,1-	0.38	<0.25	ND	3.6 U	ND	3.6 U	ND	2.8 U	ND	3.4 U	ND	3.6 U
Dichloroethane, 1,2-	0.37	<0.25	ND	3.6 U	ND	3.6 U	ND	2.8 U	ND	3.4 U	ND	3.6 U
Dichloroethene, cis-1,2-	0.41	<0.25	ND	3.5 U	ND	3.5 U	ND	2.8 U	ND	3.3 U	ND	3.5 U
Dichloroethene, 1,1-	0.4	<0.25	ND	3.5 U	ND	3.5 U	ND	2.8 U	ND	3.3 U	ND	3.5 U
Dichloropropane, 1,2-	0.39	<0.25	ND	4.1 U	ND	4.1 U	ND	3.2 U	ND	3.9 U	<b>0.94</b>	4.1 U
Dichloropropene, cis-1,3	0.38	<0.25	ND	4 U	ND	4 U	ND	3.2 U	ND	3.8 U	ND	4 U
Dichloropropene, trans-1,3	0.4	<0.25	ND	4 U	ND	4 U	ND	3.2 U	ND	3.8 U	ND	4 U
Dioxane, 1,4-	NE	NE	ND	12.6 U	ND	12.6 U	ND	10.1 U	<b>3.9</b>	12.2 U	ND	12.6 U
Ethanol	1300	540	<b>17</b>	<b>37.8</b>	<b>150</b>	<b>37.8</b>	<b>690</b>	<b>35.9</b>	<b>170</b>	<b>64.3</b>	<b>170</b>	<b>51</b>
Ethyltoluene, p-	NE	NE	<b>6.3</b>	4.3 U	ND	4.3 U	ND	3.4 U	<b>4.4</b>	4.1 U	<b>6.2</b>	4.3 U
Heptane, n-	18	7.6	ND	3.6 U	ND	3.6 U	ND	2.9 U	ND	3.4 U	ND	3.6 U
Hexachlorobutadiene	0.49	<0.25	ND	37.3 U	ND	37.3 U	ND	29.8 U	ND	36.2 U	ND	37.3 U
Hexane, n-	14	6	ND	3.1 U	ND	3.1 U	<b>4.8</b>	2.5 U	<b>3.8</b>	<b>3.2</b>	ND	3.1 U
Hexanone, 2-	NE	NE	ND	14.3 U	ND	14.3 U	ND	11.5 U	ND	13.9 U	ND	14.3 U
Isopropyl benzene	0.82	0.39	NA	4.3 U	NA	4.3 U	NA	3.4 U	NA	4.1 U	NA	4.3 U
Methyl tert-butyl ether	14	5.6	<b>19</b>	3.2 U	<b>3.6</b>	3.2 U	<b>5.7</b>	2.5 U	<b>10</b>	3 U	<b>4</b>	3.2 U
Methyl-2-pentanone, 4-	1.9	0.86	ND	3.6 U	<b>5.5</b>	3.6 U	ND	2.9 U	ND	3.4 U	ND	3.6 U
Methylene chloride	16	6.6	<b>2.1</b>	3.1 U	<b>1.6</b>	3.1 U	<b>1.2</b>	2.4 U	<b>1.5</b>	2.9 U	<b>4.2</b>	3.1 U
Naphthalene	NE	NE	<b>8.2</b>	18.3 U	ND	18.3 U	ND	14.7 U	ND	17.8 U	ND	18.3 U
Propanol, 2-	NE	NE	<b>5.9</b>	8.6 U	<b>28</b>	8.6 U	<b>180</b>	6.9 U	<b>11</b>	<b>10.6</b>	<b>28</b>	<b>12.3</b>
Propene	NE	NE	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Propylbenzene, n-	1.5	0.69	NA	4.3 U	NA	4.3 U	NA	3.4 U	NA	4.1 U	NA	4.3 U
Styrene	1.4	0.64	<b>1.5</b>	3.7 U	<b>1.2</b>	3.7 U	ND	3 U	<b>0.96</b>	3.6 U	ND	3.7 U
Tetrachloroethane, 1,1,2,2-	0.38	<0.25	ND	6 U	ND	6 U	ND	4.8 U	ND	5.8 U	ND	6 U
Tetrachloroethene	2.5	1.1	<b>5</b>	6 U	<b>6.6</b>	6 U	<b>4.4</b>	4.7 U	<b>1.4</b>	5.7 U	<b>1.3</b>	6 U
Tetrahydrofuran	0.78	0.35	ND	2.6 U	ND	2.6 U	ND	2.1 U	ND	2.5 U	ND	2.6 U
Trans-1,2-dichloroethene	NE	NE	ND	3.5 U	ND	3.5 U	ND	2.8 U	ND	3.3 U	ND	3.5 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	2.5	1.1	ND	6.7 U	ND	6.7 U	ND	5.4 U	ND	6.4 U	ND	6.7 U
Trichlorobenzene, 1,2,4-	0.47	<0.25	ND	26 U	ND	26 U	ND	20.8 U	ND	25.2 U	ND	26 U
Trichloroethane, 1,1,1-	2.5	1.1	ND	4.8 U	ND	4.8 U	ND	3.8 U	ND	4.6 U	ND	4.8 U
Trichloroethane, 1,1,2-	0.38	<0.25	ND	4.8 U	ND	4.8 U	ND	3.8 U	ND	4.6 U	ND	4.8 U
Trichloroethene	0.46	<0.25	ND	4.7 U	<b>1.2</b>	4.7 U	ND	3.8 U	ND	4.5 U	<b>0.9</b>	4.7 U
Trichlorofluoromethane	12	5.4	<b>2.7</b>	4.9 U	<b>1.8</b>	4.9 U	<b>2.4</b>	3.9 U	<b>2.2</b>	4.7 U	<b>3.1</b>	4.9 U
Trimethylbenzene, 1,2,4-	9.8	4.3	<b>10</b>	4.3 U	<b>4.2</b>	4.3 U	<b>4.2</b>	3.4 U	<b>4.9</b>	4.1 U	<b>10</b>	4.3 U
Trimethylbenzene, 1,3,5-	3.9	1.7	<b>2.9</b>	4.3 U	<b>1.3</b>	4.3 U	<b>1.4</b>	3.4 U	<b>1.6</b>	4.1 U	<b>2.8</b>	4.3 U
Vinyl Acetate	NE	NE	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Vinyl chloride	0.37	<0.25	ND	2.3 U	ND	2.3 U	ND	1.8 U	ND	2.2 U	ND	2.3 U
<b>VOC TICs (ug/m<sup>3</sup>)</b>												
2,3-Dimethylpentane	5.2	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylbutane	NE	NE	<b>39</b>	<b>18.3 NJ</b>	<b>16</b>	ND	<b>24</b>	ND	<b>45</b>	<b>25.7 NJ</b>	<b>23</b>	ND
2-Methylpentane	NE	NE	<b>8.8</b>	ND	<b>3.3</b>	ND	<b>6.8</b>	ND	<b>8.9</b>	ND	<b>5</b>	ND
Indane	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thiophene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected indoor air result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.



**Table 5-13**  
**Air and Soil Gas Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	STY-IA-6E14 CRAWL Indoor Air 1/29/2003 RETEC	IA-6E14-1 Indoor Air 3/16/2006 GEI	STY-IA-7E14 STAIRS Indoor Air 01/29/2003 RETEC	IA-7E14-1 Indoor Air 3/16/2006 GEI	FD IA-10E14-1 Indoor Air 3/16/2006 GEI	SG-1E-14 Soil Gas 8/20/2003 RETEC	SG-1E-14-FD Soil Gas 8/20/2003 RETEC	ST14-SG01 Soil Gas 03/17/2006 GEI	SG-2E-14 Soil Gas 8/20/2003 RETEC	ST14-SG02 Soil Gas 3/17/2006 GEI
<b>East 14th Street Station</b>												
<b>BTEX (ug/m<sup>3</sup>)</b>												
Benzene	13	5.9	<b>4.9</b>	4.1 U	<b>13</b>	2.8 U	4.1 U	<b>95</b>	<b>94</b>	<b>30</b>	<b>150</b>	<b>30.3</b>
Ethylbenzene	6.4	2.8	<b>1.5</b>	5.6 U	<b>12</b>	3.8 U	5.6 U	<b>77</b>	<b>85</b>	<b>13.9</b>	<b>69</b>	<b>22.1</b>
Toluene	57	24.8	<b>9.9</b>	<b>10.2</b>	<b>37</b>	<b>10.9</b>	<b>8.7</b>	<b>420</b>	<b>420</b>	<b>101.8 J</b>	<b>460</b>	<b>147</b>
Xylene, o-	7.1	3.1	<b>2</b>	5.6 U	<b>15</b>	3.8 U	5.6 U	<b>110</b>	<b>110</b>	<b>15.2 J</b>	<b>98</b>	<b>26.5</b>
Xylenes, m,p	11	4.6	<b>6.2</b>	5.6 U	<b>38</b>	<b>5.2</b>	5.6 U	<b>310</b>	<b>310</b>	<b>41.2 J</b>	<b>250</b>	<b>73.8</b>
<b>Other VOCs (ug/m<sup>3</sup>)</b>												
2,2,4-Trimethylpentane (Isooctane)	5	2.1	ND	6.1 U	ND	4.1 U	6.1 U	<b>130</b>	<b>130</b>	<b>21.9 J</b>	<b>370</b>	<b>18.7</b>
Acetone	115	52	<b>14</b>	12.9 U	<b>19</b>	<b>19.5</b>	12.9 U	<b>160</b>	<b>230</b>	<b>97.6 J</b>	<b>190</b>	<b>42.8</b>
Allyl chloride	NE	NE	NA	16.9 U	NA	11 U	16.9 U	NA	NA	11.3 U	NA	11.3 U
Benzyl chloride	NE	NE	ND	6.7 U	ND	4.6 U	6.7 U	ND	ND	4.7 U	ND	4.7 U
Bromodichloromethane	NE	NE	ND	8.7 U	ND	5.9 U	8.7 U	ND	ND	6 U	ND	6 U
Bromoform	NE	NE	ND	13.4 U	ND	9.1 U	13.4 U	ND	ND	9.3 U	ND	9.3 U
Bromomethane	0.48	<0.25	ND	5.1 U	ND	3.4 U	5.1 U	ND	ND	3.5 U	ND	3.5 U
Butadiene, 1,3-	NE	NE	<b>1.8</b>	2.9 U	ND	1.9 U	2.9 U	<b>20</b>	<b>19</b>	<b>6.2 J</b>	<b>44</b>	<b>2 U</b>
Butanone, 2-	16	7.3	ND	3.8 U	ND	2.6 U	3.8 U	<b>18</b>	<b>40</b>	<b>13.6 J</b>	<b>16</b>	<b>2.7 U</b>
Carbon disulfide	NE	NE	ND	4 U	ND	2.7 U	4 U	<b>26</b>	ND	<b>23.6</b>	<b>20</b>	<b>23.3</b>
Carbon tetrachloride	1.3	0.59	ND	8.2 U	ND	5.5 U	8.2 U	ND	ND	5.7 U	ND	5.7 U
Chlorobenzene	0.41	<0.25	ND	6 U	ND	4.1 U	6 U	ND	ND	4.1 U	ND	4.1 U
Chloroethane	0.39	<0.25	ND	3.4 U	ND	2.3 U	3.4 U	ND	ND	2.4 U	ND	2.4 U
Chloroform	1.2	0.54	<b>0.76</b>	6.3 U	ND	4.3 U	6.3 U	ND	ND	<b>117.1 J</b>	ND	<b>7.8</b>
Chloromethane	4.2	1.8	<b>1.6</b>	11.2 U	<b>1.9</b>	7.2 U	11.2 U	<b>1.1</b>	<b>1.4</b>	7.5 U	ND	7.5 U
Cryofluorane	0.42	<0.25	ND	9.1 U	ND	6.2 U	9.1 U	ND	ND	6.3 U	ND	6.3 U
Cyclohexane	6.3	2.6	ND	4.5 U	ND	3 U	4.5 U	<b>35</b>	<b>37</b>	<b>10.3 J</b>	<b>230</b>	<b>8.9</b>
Dibromochloromethane	NE	NE	ND	11 U	ND	7.5 U	11 U	ND	ND	7.6 U	ND	7.6 U
Dibromoethane, 1,2-	0.38	<0.25	ND	10 U	ND	6.8 U	10 U	ND	ND	6.9 U	ND	6.9 U
Dichlorobenzene, 1,2-	0.48	<0.25	ND	7.8 U	ND	5.3 U	7.8 U	<b>3</b>	<b>2.2</b>	5.4 U	ND	5.4 U
Dichlorobenzene, 1,3-	0.46	<0.25	ND	7.8 U	ND	5.3 U	7.8 U	ND	ND	5.4 U	ND	5.4 U
Dichlorobenzene, 1,4-	1.2	0.54	<b>1</b>	7.8 U	<b>1.6</b>	<b>60.1</b>	7.8 U	<b>65</b>	<b>48</b>	5.4 U	<b>36</b>	5.4 U
Dichlorodifluoromethane	10	4.1	<b>4.6</b>	6.4 U	<b>5.1</b>	4.4 U	6.4 U	<b>53</b>	<b>50</b>	<b>9.4</b>	<b>86</b>	<b>9.4</b>
Dichloroethane, 1,1-	0.38	<0.25	ND	5.3 U	ND	3.6 U	5.3 U	ND	ND	3.6 U	ND	3.6 U
Dichloroethane, 1,2-	0.37	<0.25	ND	5.3 U	ND	3.6 U	5.3 U	ND	ND	3.6 U	ND	3.6 U
Dichloroethene, cis-1,2-	0.41	<0.25	ND	5.2 U	ND	3.5 U	5.2 U	ND	ND	3.6 U	ND	3.6 U
Dichloroethene, 1,1-	0.4	<0.25	ND	5.2 U	ND	3.5 U	5.2 U	ND	ND	3.6 U	ND	3.6 U
Dichloropropane, 1,2-	0.39	<0.25	ND	6 U	ND	4.1 U	6 U	ND	ND	4.2 U	ND	4.2 U
Dichloropropene, cis-1,3	0.38	<0.25	ND	5.9 U	ND	4 U	5.9 U	ND	ND	4.1 U	ND	4.1 U
Dichloropropene, trans-1,3	0.4	<0.25	ND	5.9 UJ	ND	4 UJ	5.9 UJ	ND	ND	4.1 UJ	ND	4.1 UJ
Dioxane, 1,4-	NE	NE	ND	19.4 U	ND	12.6 U	19.4 U	ND	ND	13 U	ND	13 U
Ethanol	1300	540	<b>46</b>	<b>24.6</b>	<b>79</b>	<b>245.7</b>	<b>26.5</b>	<b>110</b>	<b>110</b>	6.8 UJ	<b>22</b>	<b>107.7</b>
Ethyltoluene, p-	NE	NE	ND	6.4 U	<b>12</b>	4.3 U	6.4 U	<b>74</b>	<b>84</b>	<b>14.8</b>	<b>82</b>	<b>22.1</b>
Heptane, n-	18	7.6	ND	5.3 U	ND	3.6 U	5.3 U	<b>50</b>	<b>54</b>	<b>18.4 J</b>	<b>110</b>	<b>13.5</b>
Hexachlorobutadiene	0.49	<0.25	ND	57.6 U	ND	37.3 U	57.6 U	ND	ND	38.4 U	ND	38.4 U
Hexane, n-	14	6	ND	4.6 U	<b>3.6</b>	3.1 U	4.6 U	<b>84</b>	<b>82</b>	<b>33.2</b>	<b>180</b>	<b>28.2</b>
Hexanone, 2-	NE	NE	ND	22.1 U	ND	14.3 U	22.1 U	ND	ND	14.8 U	ND	14.8 U
Isopropyl benzene	0.82	0.39	NA	6.4 U	NA	4.3 U	6.4 U	NA	NA	4.4 U	NA	4.4 U
Methyl tert-butyl ether	14	5.6	<b>4.2</b>	4.7 U	<b>12</b>	3.2 U	4.7 U	<b>420</b>	<b>430</b>	<b>7.6</b>	<b>3200</b>	<b>11.9</b>
Methyl-2-pentanone, 4-	1.9	0.86	ND	5.3 U	ND	3.6 U	5.3 U	ND	ND	3.7 U	ND	3.7 U
Methylene chloride	16	6.6	<b>1.4</b>	4.5 U	<b>1.7</b>	3.1 U	4.5 U	ND	ND	3.1 U	ND	3.1 U
Naphthalene	NE	NE	<b>7.5</b>	28.3 U	<b>12</b>	18.3 U	28.3 U	<b>11</b>	<b>11</b>	18.9 U	ND	18.9 U
Propanol, 2-	NE	NE	<b>6.6</b>	13.3 U	<b>6.4</b>	<b>11.6</b>	13.3 U	<b>19</b>	<b>21</b>	8.9 UJ	ND	8.9 U
Propene	NE	NE	ND	NA	ND	NA	NA	ND	ND	NA	ND	NA
Propylbenzene, n-	1.5	0.69	NA	6.4 U	NA	4.3 U	6.4 U	NA	NA	4.4 UJ	NA	4.4 U
Styrene	1.4	0.64	ND	5.5 U	<b>1.4</b>	3.7 U	5.5 U	ND	ND	3.8 U	ND	3.8 U
Tetrachloroethane, 1,1,2,2-	0.38	<0.25	ND	8.9 U	ND	6 U	8.9 U	ND	ND	6.2 U	ND	6.2 U
Tetrachloroethene	2.5	1.1	<b>2.1</b>	8.8 U	<b>1.2</b>	6 U	8.8 U	<b>5.8</b>	<b>5</b>	<b>244.1 J</b>	<b>6.4</b>	<b>30.5</b>
Tetrahydrofuran	0.78	0.35	ND	3.8 U	ND	2.6 U	3.8 U	ND	ND	2.7 U	ND	2.7 U
Trans-1,2-dichloroethene	NE	NE	ND	5.2 U	ND	3.5 U	5.2 U	ND	ND	3.6 U	ND	3.6 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	2.5	1.1	ND	10 U	ND	6.7 U	10 U	ND	ND	6.9 U	ND	6.9 U
Trichlorobenzene, 1,2,4-	0.47	<0.25	ND	40.1 U	ND	26 U	40.1 U	ND	ND	26.7 U	ND	26.7 U
Trichloroethane, 1,1,1-	2.5	1.1	ND	7.1 U	ND	4.8 U	7.1 U	ND	ND	4.9 U	ND	4.9 U
Trichloroethane, 1,1,2-	0.38	<0.25	ND	7.1 U	ND	4.8 U	7.1 U	ND	ND	4.9 U	ND	4.9 U
Trichloroethene	0.46	<0.25	ND	7 U	ND	4.7 U	7 U	ND	ND	4.8 U	ND	4.8 U
Trichlorofluoromethane	12	5.4	<b>2.4</b>	7.3 U	<b>2.2</b>	4.9 U	7.3 U	ND	ND	5.1 U	ND	5.1 U
Trimethylbenzene, 1,2,4-	9.8	4.3	<b>4.1</b>	6.4 U	<b>13</b>	4.3 U	6.4 U	<b>82</b>	<b>87</b>	<b>25.6</b>	<b>100</b>	<b>29</b>
Trimethylbenzene, 1,3,5-	3.9	1.7	<b>1.3</b>	6.4 U	<b>4.1</b>	4.3 U	6.4 U	<b>23</b>	<b>25</b>	<b>10.3</b>	<b>30</b>	<b>9.3</b>
Vinyl Acetate	NE	NE	ND	NA	ND	NA	NA	ND	ND	NA	ND	NA
Vinyl chloride	0.37	<0.25	ND	3.3 U	ND	2.3 U	3.3 U	ND	ND	2.3 U	ND	2.3 U
<b>VOC TICs (ug/m<sup>3</sup>)</b>												
2,3-Dimethylpentane	5.2	2.2	ND	ND	ND	ND	ND	ND	<b>100</b>	ND	ND	ND
2-Methylbutane	NE	NE	<b>30</b>	<b>35.4 NJ</b>	<b>38</b>	<b>16.2 NJ</b>	<b>27.4 NJ</b>	<b>280</b>	<b>280</b>	<b>174 NJ</b>	<b>740</b>	<b>156.4 NJ</b>
2-Methylpentane	NE	NE	<b>7.1</b>	ND	<b>10</b>	ND	ND	<b>120</b>	<b>110</b>	<b>105.6 NJ</b>	<b>290</b>	<b>81 NJ</b>
Indane	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thiophene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected indoor air result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-13  
Air and Soil Gas Analytical Results Summary  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	Duplicate ST14-SG05 Soil Gas 3/17/2006 GEI	ST14-SV01 Soil Gas 3/27/2006 GEI	ST14-SV03 Soil Gas 4/6/2006 GEI	ST14-SV04 Soil Gas 4/6/2006 GEI	ST14-SV05 Soil Gas 4/6/2006 GEI
<b>East 14th Street Station</b>							
<b>BTEX (ug/m<sup>3</sup>)</b>							
Benzene	13	5.9	<b>25.8</b>	<b>130.8</b>	<b>17.5</b>	3.5 U	<b>9.3</b>
Ethylbenzene	6.4	2.8	<b>18.7</b>	<b>316.8</b>	<b>78.1</b>	4.8 U	4.1 U
Toluene	57	24.8	<b>139.5 J</b>	<b>527.8</b>	<b>162.1</b>	4.1 U	<b>13.9</b>
Xylene, o-	7.1	3.1	<b>21.3 J</b>	<b>607.6</b>	<b>60.8</b>	4.8 U	4.1 U
Xylenes, m,p	11	4.6	<b>69.4 J</b>	<b>651</b>	<b>182.3</b>	4.8 U	<b>4.8</b>
<b>Other VOCs (ug/m<sup>3</sup>)</b>							
2,2,4-Trimethylpentane (Isooctane)	5	2.1	<b>15.9 J</b>	13.5 U	<b>56</b>	5.1 U	4.4 U
Acetone	115	52	<b>50 J</b>	<b>92.8</b>	<b>69</b>	10.2 U	<b>26.2</b>
Allyl chloride	NE	NE	9.1 U	37.6 U	12.8 U	13.5 U	11.6 U
Benzyl chloride	NE	NE	3.8 U	15 U	5.2 U	5.7 U	4.9 U
Bromodichloromethane	NE	NE	4.9 U	19.4 U	<b>80.4</b>	7.4 U	6.3 U
Bromoform	NE	NE	7.5 U	30 U	10.3 U	11.4 U	9.7 U
Bromomethane	0.48	<0.25	2.8 U	11.3 U	3.9 U	4.3 U	3.7 U
Butadiene, 1,3-	NE	NE	1.6 UJ	6.4 U	2.2 U	2.4 U	2.1 U
Butanone,2-	16	7.3	2.2 UJ	<b>18</b>	<b>10.3</b>	3.2 U	<b>9.7</b>
Carbon disulfide	NE	NE	<b>18.3</b>	<b>746.4</b>	<b>746.4</b>	<b>9</b>	<b>96.4</b>
Carbon tetrachloride	1.3	0.59	4.6 U	18.2 U	6.3 U	6.9 U	5.9 U
Chlorobenzene	0.41	<0.25	3.4 U	13.4 U	4.6 U	5.1 U	4.3 U
Chloroethane	0.39	<0.25	1.9 U	7.7 U	<b>5.5</b>	2.9 U	2.5 U
Chloroform	1.2	0.54	<b>5.9 J</b>	<b>312.3</b>	<b>1659.2</b>	<b>9.3</b>	<b>8.8</b>
Chloromethane	4.2	1.8	6 U	24.8 U	8.5 U	8.9 U	7.7 U
Cryofluorane	0.42	<0.25	5.1 U	20.3 U	7 U	7.7 U	6.6 U
Cyclohexane	6.3	2.6	<b>6.5 J</b>	<b>82.6</b>	<b>20</b>	3.8 U	3.2 U
Dibromochloromethane	NE	NE	6.2 U	24.6 U	8.5 U	9.4 U	8 U
Dibromoethane,1,2-	0.38	<0.25	5.6 U	22.3 U	7.7 U	8.5 U	7.2 U
Dichlorobenzene,1,2-	0.48	<0.25	4.4 U	17.4 U	6 U	6.6 U	5.6 U
Dichlorobenzene,1,3-	0.46	<0.25	4.4 U	17.4 U	6 U	6.6 U	5.6 U
Dichlorobenzene,1,4-	1.2	0.54	4.4 U	17.4 U	6 U	6.6 U	5.6 U
Dichlorodifluoromethane	10	4.1	<b>7.9</b>	14.4 U	<b>9.9</b>	5.4 U	4.7 U
Dichloroethane,1,1-	0.38	<0.25	3 U	11.7 U	4 U	4.5 U	3.8 U
Dichloroethane,1,2-	0.37	<0.25	3 U	11.7 U	4 U	4.5 U	3.8 U
Dichloroethene, cis-1,2-	0.41	<0.25	2.9 U	11.5 U	4 U	4.4 U	3.7 U
Dichloroethene,1,1-	0.4	<0.25	2.9 U	11.5 U	4 U	4.4 U	3.7 U
Dichloropropane,1,2-	0.39	<0.25	3.4 U	13.4 U	4.6 U	5.1 U	4.3 U
Dichloropropene, cis-1,3	0.38	<0.25	3.3 U	13.2 U	4.5 U	5 U	4.3 U
Dichloropropene, trans-1,3	0.4	<0.25	3.3 UJ	13.2 UJ	4.5 U	5 U	4.3 U
Dioxane,1,4-	NE	NE	10.4 U	43.2 U	14.8 U	15.5 U	13.3 U
Ethanol	1300	540	<b>105.8 J</b>	22.7 U	7.7 U	8.1 U	7 U
Ethyltoluene, p-	NE	NE	<b>19.2</b>	<b>934.8</b>	<b>59</b>	5.4 U	4.6 U
Heptane, n-	18	7.6	<b>13.1 J</b>	<b>533</b>	<b>176.3</b>	4.5 U	3.9 U
Hexachlorobutadiene	0.49	<0.25	30.9 U	127.9 U	43.7 U	45.8 U	39.4 U
Hexane, n-	14	6	<b>23.7</b>	<b>600.1</b>	<b>109.4</b>	3.9 U	3.3 U
Hexanone,2-	NE	NE	11.9 U	49.2 U	16.8 U	17.6 U	15.2 U
Isopropyl benzene	0.82	0.39	3.6 U	<b>132.8</b>	<b>9.8</b>	5.4 U	4.6 U
Methyl tert-butyl ether	14	5.6	<b>9.4</b>	<b>15.8</b>	<b>11.2</b>	4 U	3.4 U
Methyl-2-pentanone,4-	1.9	0.86	3 U	11.9 U	4.1 U	4.5 U	3.9 U
Methylene chloride	16	6.6	2.5 U	10.1 U	<b>18</b>	3.8 U	3.3 U
Naphthalene	NE	NE	15.2 U	62.9 U	21.5 U	22.5 U	19.4 U
Propanol,2-	NE	NE	<b>9.3 J</b>	29.5 U	10.1 U	10.6 U	9.1 U
Propene	NE	NE	NA	NA	NA	NA	NA
Propylbenzene, n-	1.5	0.69	<b>4.1 J</b>	<b>324.7</b>	<b>14.8</b>	5.4 U	4.6 U
Styrene	1.4	0.64	3.1 U	12.4 U	4.3 U	4.7 U	4 U
Tetrachloroethane,1,1,2,2-	0.38	<0.25	5 U	19.9 U	6.9 U	7.6 U	6.5 U
Tetrachloroethene	2.5	1.1	<b>21.7 J</b>	<b>1966.2</b>	<b>1491.6</b>	<b>50.8</b>	<b>67.8</b>
Tetrahydrofuran	0.78	0.35	2.2 U	8.6 U	3 U	3.2 U	2.8 U
Trans-1,2-dichloroethene	NE	NE	2.9 U	11.5 U	4 U	4.4 U	3.7 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	2.5	1.1	5.6 U	22.2 U	7.7 U	8.4 U	7.2 U
Trichlorobenzene,1,2,4-	0.47	<0.25	21.5 U	89 U	30.4 U	31.9 U	27.5 U
Trichloroethane,1,1,1-	2.5	1.1	4 U	15.8 U	5.5 U	6 U	5.1 U
Trichloroethane,1,1,2-	0.38	<0.25	4 U	15.8 U	5.5 U	6 U	5.1 U
Trichloroethene	0.46	<0.25	3.9 U	15.6 U	5.4 U	5.9 U	<b>18.8</b>
Trichlorofluoromethane	12	5.4	4.1 U	16.3 U	5.6 U	6.2 U	5.3 U
Trimethylbenzene,1,2,4-	9.8	4.3	<b>25.6</b>	<b>984</b>	<b>59</b>	5.4 U	4.6 U
Trimethylbenzene,1,3,5-	3.9	1.7	<b>8.9</b>	<b>787.2</b>	<b>23.6</b>	5.4 U	4.6 U
Vinyl Acetate	NE	NE	NA	NA	NA	NA	NA
Vinyl chloride	0.37	<0.25	1.9 U	7.4 U	2.6 U	2.8 U	2.4 U
<b>VOC TICs (ug/m<sup>3</sup>)</b>							
2,3-Dimethylpentane	5.2	2.2	ND	<b>348.5 NJ</b>	ND	ND	ND
2-Methylbutane	NE	NE	<b>141.6 NJ</b>	<b>413 NJ</b>	<b>79.6 NJ</b>	ND	ND
2-Methylpentane	NE	NE	<b>73.9 NJ</b>	<b>492.8 NJ</b>	<b>133.8 NJ</b>	ND	ND
Indane	NE	NE	ND	ND	ND	ND	ND
Indene	NE	NE	ND	ND	ND	ND	ND
Thiophene	NE	NE	ND	ND	ND	ND	ND

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected indoor air result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-13**  
**Air and Soil Gas Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	STY-IA-1E17 CRAWL Indoor Air 1/29/2003 RETEC	STY-IA-1FDE17 CRAWL Indoor Air 1/29/2003 RETEC	STY-IA-2E17 CRAWL Indoor Air 1/29/2003 RETEC	ST17SV01 Soil Gas 3/16/2006 GEI	ST17SV02 Soil Gas 3/16/2006 GEI	ST17SV03 Soil Gas 3/16/2006 GEI	ST17SV04 Soil Gas 3/16/2006 GEI	ST17SV05 Soil Gas 4/6/2006 GEI	ST17SV06 Soil Gas 5/9/2006 GEI	SG-1E-17 Soil Gas 8/20/2003 RETEC
<b>East 17th Street Station</b>												
<b>BTEX (ug/m<sup>3</sup>)</b>												
Benzene	13	5.9	3.3	3.1	3.7	191.4	5.4	15.3	16	5.7	10.8	14
Ethylbenzene	6.4	2.8	1.1	1.2	1.7	7.8	3.6 U	6.9	10	8.2	3.9 U	77
Toluene	57	24.8	6.5	6.5	8.4	26	4.1	98	41.5	37.7	8.7	220
Xylene, o-	7.1	3.1	1.5	1.7	2.6	5.2	3.6 U	6.5	10.4	7.8	3.9 U	120
Xylenes, m,p	11	4.6	3.6	4.6	6.9	9.1	3.6 U	16.1	22.1	19.5	3.9 U	300
<b>Other VOCs (ug/m<sup>3</sup>)</b>												
2,2,4-Trimethylpentane (Isooctane)	5	2.1	ND	ND	ND	27.6	3.9 U	14.9	6.1	4.3 U	4.2 U	30
Acetone	115	52	56	10	45	8.3 U	8.1 U	11.4	85.7	9.5	59.5	190
Allyl chloride	NE	NE	NA	NA	NA	11 U	10.6 U	9.4 U	11.3 U	11.6 U	11.3 U	NA
Benzyl chloride	NE	NE	ND	ND	ND	4.6 U	4.4 U	3.8 U	4.7 U	4.8 U	4.7 U	ND
Bromodichloromethane	NE	NE	ND	ND	ND	5.9 U	5.6 U	5 U	6 U	10.7	6 U	ND
Bromoform	NE	NE	ND	ND	ND	9.1 U	8.7 U	7.7 U	9.3 U	9.5 U	9.3 U	ND
Bromomethane	0.48	<0.25	ND	ND	ND	3.4 U	3.3 U	2.9 U	3.5 U	3.6 U	3.5 U	ND
Butadiene, 1,3-	NE	NE	5.1	4.8	ND	1.9 U	1.9 U	1.6 U	2 U	2 U	2 U	ND
Butanone,2-	16	7.3	3.6	ND	7.1	2.6 U	2.5 U	2.2 U	26.3	6.2	13.3	12
Carbon disulfide	NE	NE	ND	ND	ND	59.1	3.7	28.3	239.5	65.3	23.3	ND
Carbon tetrachloride	1.3	0.59	ND	ND	ND	5.5 U	5.3 U	4.7 U	5.7 U	5.8 U	5.7 U	ND
Chlorobenzene	0.41	<0.25	ND	ND	ND	4.1 U	3.9 U	3.4 U	4.1 U	4.2 U	4.1 U	ND
Chloroethane	0.39	<0.25	ND	ND	ND	2.3 U	2.2 U	2 U	2.4 U	2.4 U	2.4 U	ND
Chloroform	1.2	0.54	2.1	2	1.3	21.5	4.1 U	3.6 U	10.2	165.9	7.8	ND
Chloromethane	4.2	1.8	1.5	1.4	4.4	7.2 U	7 U	6.2 U	7.5 U	7.7 U	7.5 U	1.3
Cryofluorane	0.42	<0.25	ND	ND	ND	6.2 U	5.9 U	5.2 U	6.3 U	6.4 U	6.3 U	ND
Cyclohexane	6.3	2.6	ND	ND	ND	25.5	2.9 U	26.8	4.5	3.2 U	4.8	26
Dibromochloromethane	NE	NE	ND	ND	ND	7.5 U	7.1 U	6.3 U	7.6 U	7.8 U	7.6 U	ND
Dibromoethane,1,2-	0.38	<0.25	ND	ND	ND	6.8 U	6.5 U	5.7 U	6.9 U	7.1 U	6.9 U	ND
Dichlorobenzene,1,2-	0.48	<0.25	ND	ND	ND	5.3 U	5 U	4.4 U	5.4 U	5.5 U	5.4 U	ND
Dichlorobenzene,1,3-	0.46	<0.25	ND	ND	ND	5.3 U	5 U	4.4 U	5.4 U	5.5 U	5.4 U	ND
Dichlorobenzene,1,4-	1.2	0.54	ND	ND	86	5.3 U	5 U	4.4 U	5.4 U	5.5 U	5.4 U	19
Dichlorodifluoromethane	10	4.1	9.2	9.6	29	4.4	4.2 U	4.2	4.5 U	4.6 U	4.5 U	3.4
Dichloroethane,1,1-	0.38	<0.25	ND	ND	ND	3.6 U	3.4 U	3 U	3.6 U	3.7 U	3.6 U	ND
Dichloroethane,1,2-	0.37	<0.25	ND	ND	ND	3.6 U	3.4 U	3 U	3.6 U	3.7 U	3.6 U	ND
Dichloroethene, cis-1,2-	0.41	<0.25	ND	ND	ND	3.5 U	3.3 U	2.9 U	3.6 U	3.7 U	3.6 U	ND
Dichloroethene,1,1-	0.4	<0.25	ND	ND	ND	3.5 U	3.3 U	2.9 U	3.6 U	3.7 U	3.6 U	ND
Dichloropropane,1,2-	0.39	<0.25	ND	ND	ND	4.1 U	3.9 U	3.4 U	4.2 U	4.3 U	4.2 U	ND
Dichloropropene, cis-1,3	0.38	<0.25	ND	ND	ND	4 U	3.8 U	3.4 U	4.1 U	4.2 U	4.1 U	ND
Dichloropropene, trans-1,3	0.4	<0.25	ND	ND	ND	4 U	3.8 U	3.4 U	4.1 U	4.2 U	4.1 U	ND
Dioxane,1,4-	NE	NE	ND	ND	ND	12.6 U	12.2 U	10.8 U	13 U	13.3 U	13 U	ND
Ethanol	1300	540	38	44	1100	6.6 U	6.4 U	9.8	6.8 U	7 U	13	39
Ethyltoluene, p-	NE	NE	ND	ND	ND	4.3 U	4.1 U	3.6 U	25.1	7.9	4.4 U	100
Heptane, n-	18	7.6	ND	ND	ND	33.6	3.4 U	22.5	10.2	4.5	11.1	20
Hexachlorobutadiene	0.49	<0.25	ND	ND	ND	37.3 U	36.2 U	32 U	38.4 U	39.4 U	38.4 U	ND
Hexane, n-	14	6	ND	ND	ND	77.7	3 U	35.3	16.2	6	22.9	12
Hexanone,2-	NE	NE	ND	ND	ND	14.3 U	13.9 U	12.3 U	16.4	15.2 U	14.8 U	ND
Isopropyl benzene	0.82	0.39	NA	NA	NA	4.3 U	4.1 U	3.6 U	6.9	4.5 U	4.4 U	NA
Methyl tert-butyl ether	14	5.6	ND	ND	ND	3.2 U	3 U	13.7	3.2 U	4.7	3.2 U	380
Methyl-2-pentanone,4-	1.9	0.86	ND	ND	ND	3.6 U	3.4 U	3 U	4.9	3.8 U	3.7 U	ND
Methylene chloride	16	6.6	1.4	1.6	1.4	3.1 U	2.9 U	2.6 U	3.1 U	3.2 U	3.1 U	3
Naphthalene	NE	NE	ND	ND	5	18.3 U	17.8 U	15.7 U	18.9 U	19.4 U	18.9 U	39
Propanol,2-	NE	NE	4.6	7.4	30	8.6 U	8.4 U	8.1	8.9 U	9.1 U	8.9 U	9.5
Propene	NE	NE	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND
Propylbenzene, n-	1.5	0.69	NA	NA	NA	4.3 U	4.1 U	3.6 U	4.4 U	4.5 U	4.4 U	NA
Styrene	1.4	0.64	ND	ND	ND	3.7 U	3.6 U	3.2 U	4.7	3.9 U	3.8 U	ND
Tetrachloroethane,1,1,2,2-	0.38	<0.25	ND	ND	ND	6 U	5.8 U	5.1 U	6.2 U	6.3 U	6.2 U	ND
Tetrachloroethene	2.5	1.1	1.7	1.7	1.5	115.3	12.2	176.3	155.9	311.9	21.7	2.4
Tetrahydrofuran	0.78	0.35	ND	ND	ND	2.6 U	2.5 U	2.2 U	2.7 U	2.7 U	2.7 U	ND
Trans-1,2-dichloroethene	NE	NE	ND	ND	ND	3.5 U	3.3 U	2.9 U	3.6 U	3.7 U	3.6 U	ND
Trichloro-1,2,2-trifluoroethane, 1,1,2-	2.5	1.1	ND	ND	ND	6.7 U	6.4 U	5.7 U	6.9 U	7.1 U	6.9 U	ND
Trichlorobenzene,1,2,4-	0.47	<0.25	ND	ND	ND	26 U	25.2 U	22.3 U	26.7 U	27.5 U	26.7 U	ND
Trichloroethane,1,1,1-	2.5	1.1	ND	ND	ND	4.8 U	4.6 U	4 U	4.9 U	5 U	4.9 U	ND
Trichloroethane,1,1,2-	0.38	<0.25	ND	ND	ND	4.8 U	4.6 U	4 U	4.9 U	5 U	4.9 U	ND
Trichloroethene	0.46	<0.25	ND	2.4	ND	4.7 U	4.5 U	4 U	4.8 U	4.9 U	7.5	ND
Trichlorofluoromethane	12	5.4	2.1	2.4	5.4	4.9 U	4.7 U	4.2 U	5.1 U	9.6	5.1 U	ND
Trimethylbenzene,1,2,4-	9.8	4.3	1.2	2.5	4.4	4.8	4.1 U	4.5	42.3	14.8	4.4 U	120
Trimethylbenzene,1,3,5-	3.9	1.7	ND	0.88	1.2	4.3 U	4.1 U	3.6 U	10.8	4.5 U	4.4 U	32
Vinyl Acetate	NE	NE	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND
Vinyl chloride	0.37	<0.25	ND	ND	ND	2.3 U	2.2 U	1.9 U	2.3 U	2.4 U	2.3 U	ND
<b>VOC TICs (ug/m<sup>3</sup>)</b>												
2,3-Dimethylpentane	5.2	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	69
2-Methylbutane	NE	NE	9.2	8.9	11	141.6 NJ	13 NJ	241.9 NJ	29.5 NJ	ND	35.4 NJ	23
2-Methylpentane	NE	NE	ND	3.4	3.8	133.8 NJ	21.1 NJ	98.6 NJ	ND	ND	ND	12
Indane	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thiophene	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected indoor air result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.

**Table 5-13**  
**Air and Soil Gas Analytical Results Summary**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Sample ID: Sample Type: Date Collected: Investigation Conducted by:	NYSDOH Indoor Air Upper Fence (95 <sup>th</sup> percentile)	NYSDOH Indoor Air Upper Quartile (75 <sup>th</sup> percentile)	STY-IA-1E19 CRAWL Indoor Air 1/29/2003 RETEC	STY-IA-2E19 STAIRS Indoor Air 1/29/2003 RETEC	ST19SV01 Soil Gas 3/16/2006 GEI	SG-1-E19 Soil Gas 8/20/2003 RETEC
<b>East 19th Street Station</b>						
<b>BTEX (ug/m<sup>3</sup>)</b>						
Benzene	13	5.9	5.2	2.8	17.2	14
Ethylbenzene	6.4	2.8	2.2	2.2	15.2	36
Toluene	57	24.8	12	8.2	90.5	110
Xylene, o-	7.1	3.1	2.9	3.7	17.4	67
Xylenes, m,p	11	4.6	8.6	8.2	43.4	160
<b>Other VOCs (ug/m<sup>3</sup>)</b>						
2,2,4-Trimethylpentane (Isooctane)	5	2.1	ND	ND	11.7	81
Acetone	115	52	57	370	8.3 U	200
Allyl chloride	NE	NE	NA	NA	11 U	NA
Benzyl chloride	NE	NE	ND	ND	4.6 U	ND
Bromodichloromethane	NE	NE	ND	ND	5.9 U	ND
Bromoform	NE	NE	ND	ND	9.1 U	ND
Bromomethane	0.48	<0.25	ND	ND	3.4 U	ND
Butadiene, 1,3-	NE	NE	6.5	ND	1.9 U	4.5
Butanone,2-	16	7.3	ND	ND	3.5	32
Carbon disulfide	NE	NE	ND	ND	23.3	9.4
Carbon tetrachloride	1.3	0.59	ND	ND	5.5 U	ND
Chlorobenzene	0.41	<0.25	ND	ND	4.1 U	ND
Chloroethane	0.39	<0.25	ND	ND	2.3 U	ND
Chloroform	1.2	0.54	1.3	ND	33.7	ND
Chloromethane	4.2	1.8	1.6	1.6	7.2 U	ND
Cryofluorane	0.42	<0.25	ND	ND	6.2 U	ND
Cyclohexane	6.3	2.6	ND	ND	3.4	ND
Dibromochloromethane	NE	NE	ND	ND	7.5 U	ND
Dibromoethane,1,2-	0.38	<0.25	ND	ND	6.8 U	ND
Dichlorobenzene,1,2-	0.48	<0.25	ND	ND	5.3 U	ND
Dichlorobenzene,1,3-	0.46	<0.25	ND	ND	5.3 U	ND
Dichlorobenzene,1,4-	1.2	0.54	4.2	2.5	5.3 U	12
Dichlorodifluoromethane	10	4.1	4.3	4.5	4.4 U	3.6
Dichloroethane,1,1-	0.38	<0.25	ND	ND	3.6 U	ND
Dichloroethane,1,2-	0.37	<0.25	ND	ND	3.6 U	ND
Dichloroethene, cis-1,2-	0.41	<0.25	ND	ND	3.5 U	ND
Dichloroethene,1,1-	0.4	<0.25	ND	ND	3.5 U	ND
Dichloropropane,1,2-	0.39	<0.25	ND	ND	4.1 U	ND
Dichloropropene, cis-1,3	0.38	<0.25	ND	ND	4 U	ND
Dichloropropene, trans-1,3	0.4	<0.25	ND	ND	4 U	ND
Dioxane,1,4-	NE	NE	ND	ND	12.6 U	ND
Ethanol	1300	540	100	500	6.6 U	12
Ethyltoluene, p-	NE	NE	ND	7.8	13.3	82
Heptane, n-	18	7.6	ND	ND	36.9	31
Hexachlorobutadiene	0.49	<0.25	ND	ND	37.3 U	ND
Hexane, n-	14	6	ND	ND	12.7	44
Hexanone,2-	NE	NE	ND	ND	14.3 U	ND
Isopropyl benzene	0.82	0.39	NA	NA	4.3 U	NA
Methyl tert-butyl ether	14	5.6	5.3	ND	3.2 U	220
Methyl-2-pentanone,4-	1.9	0.86	ND	ND	3.6 U	ND
Methylene chloride	16	6.6	1.4	2.4	3.1 U	ND
Naphthalene	NE	NE	18	ND	18.3 U	16
Propanol,2-	NE	NE	5.9	14	8.6 U	3.9
Propene	NE	NE	ND	ND	NA	ND
Propylbenzene, n-	1.5	0.69	NA	NA	4.3 U	NA
Styrene	1.4	0.64	ND	ND	3.7 U	ND
Tetrachloroethane,1,1,2,2-	0.38	<0.25	ND	ND	6 U	ND
Tetrachloroethene	2.5	1.1	2.7	2.1	400	5.2
Tetrahydrofuran	0.78	0.35	ND	ND	2.6 U	ND
Trans-1,2-dichloroethene	NE	NE	ND	ND	3.5 U	ND
Trichloro-1,2,2-trifluoroethane, 1,1,2-	2.5	1.1	ND	ND	6.7 U	ND
Trichlorobenzene,1,2,4-	0.47	<0.25	ND	ND	26 U	ND
Trichloroethane,1,1,1-	2.5	1.1	ND	ND	4.8 U	ND
Trichloroethane,1,1,2-	0.38	<0.25	ND	ND	4.8 U	ND
Trichloroethene	0.46	<0.25	ND	ND	4.7 U	ND
Trichlorofluoromethane	12	5.4	2.4	2.6	4.9 U	1.9
Trimethylbenzene,1,2,4-	9.8	4.3	4.2	8.4	18.7	120
Trimethylbenzene,1,3,5-	3.9	1.7	1.5	3.9	6.9	32
Vinyl Acetate	NE	NE	ND	ND	NA	ND
Vinyl chloride	0.37	<0.25	ND	ND	2.3 U	ND
<b>VOC TICs (ug/m<sup>3</sup>)</b>						
2,3-Dimethylpentane	5.2	2.2	ND	ND	ND	100
2-Methylbutane	NE	NE	17	12	ND	32
2-Methylpentane	NE	NE	4.7	ND	ND	34
Indane	NE	NE	ND	ND	ND	ND
Indene	NE	NE	ND	ND	ND	ND
Thiophene	NE	NE	ND	ND	ND	ND

**Notes:**

NYSDOH Columns: New York State Department of Health (NYSDOH), 2004, Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003. Outdoor air samples were compared to outdoor air values for upper quartile; upper fence values are shown for information only and were not used to compare the results against.

**Bold indicates compound was detected.**

Gray shading indicates that detected indoor air result value is above the respective NYSDOH value.

For additional information on abbreviations, references, and notes, see the *Chemical Data Summary Tables* group of the RI Report.

**Table 6-1**  
**Exposure Pathway Analysis - Potential Area Receptors**  
**Stuyvesant Town Remedial Investigation Report**  
**New York, NY**

Receptor	Exposure Medium	Exposure Pathway	Pathway Not Considered Complete	Pathway Considered Potentially Complete, But Not Likely to Result in Exposure	Pathway Potentially Complete and Will Be Addressed in the Alternatives Analysis Report for the Site	Rationale for Inclusion or Exclusion
<b>Apartment Building Resident</b>						
Apartment Building Resident	Surface Soil (0-2 inches)	Ingestion	X	---	---	Apartment building residents may be exposed to residuals in surface soil or particulates, therefore the exposure pathway is considered potentially complete. Since the concentrations of MGP-related COC in surface soil is low, the site is covered with grass or landscape materials, and the residents would only be in the areas with surface soil present for a short time, exposure is not likely.
		Dermal Contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
		Inhalation of Volatiles in Indoor Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	Apartment building residents are not likely to contact subsurface soils. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentially complete and will be addressed in the alternatives analysis report.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Groundwater	Ingestion	X	---	---	Apartment building residents are not likely to contact groundwater. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Surface Water	Ingestion	X	---	---	Surface water is not present at the Site.
		Dermal contact	X	---	---	
<b>Daycare Attendee</b>						
Daycare Attendee	Surface Soil (0-2 inches)	Ingestion	X	---	---	Daycare attendees may be exposed to residuals in surface soil or particulates, therefore the exposure pathway is considered potentially complete. Since the concentrations of MGP-related COC in surface soil is low, the site is covered with grass or landscape materials, and the residents would only be in the areas with surface soil present for a short time, exposure is not likely.
		Dermal Contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
		Inhalation of Volatiles in Indoor Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	Daycare attendees are not likely to contact subsurface soils. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentially complete and will be addressed in the alternatives analysis report.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Groundwater	Ingestion	X	---	---	Daycare attendees are not likely to contact groundwater. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Surface Water	Ingestion	X	---	---	Surface water is not present at the Site.
		Dermal contact	X	---	---	
<b>Commercial Building Occupant</b>						
Commercial Building Occupant/Parking Lot Attendant	Surface Soil (0-2 inches)	Ingestion	X	---	---	Surface soil is not present at the property.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
		Inhalation of Volatiles in Indoor Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	A commercial building occupant is not likely to contact subsurface soils. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Groundwater	Ingestion	X	---	---	A commercial building occupant is not likely to contact groundwater. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Surface Water	Ingestion	X	---	---	Surface water is not present at the Site.
		Dermal contact	X	---	---	

**Table 6-1  
Exposure Pathway Analysis - Potential Area Receptors  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

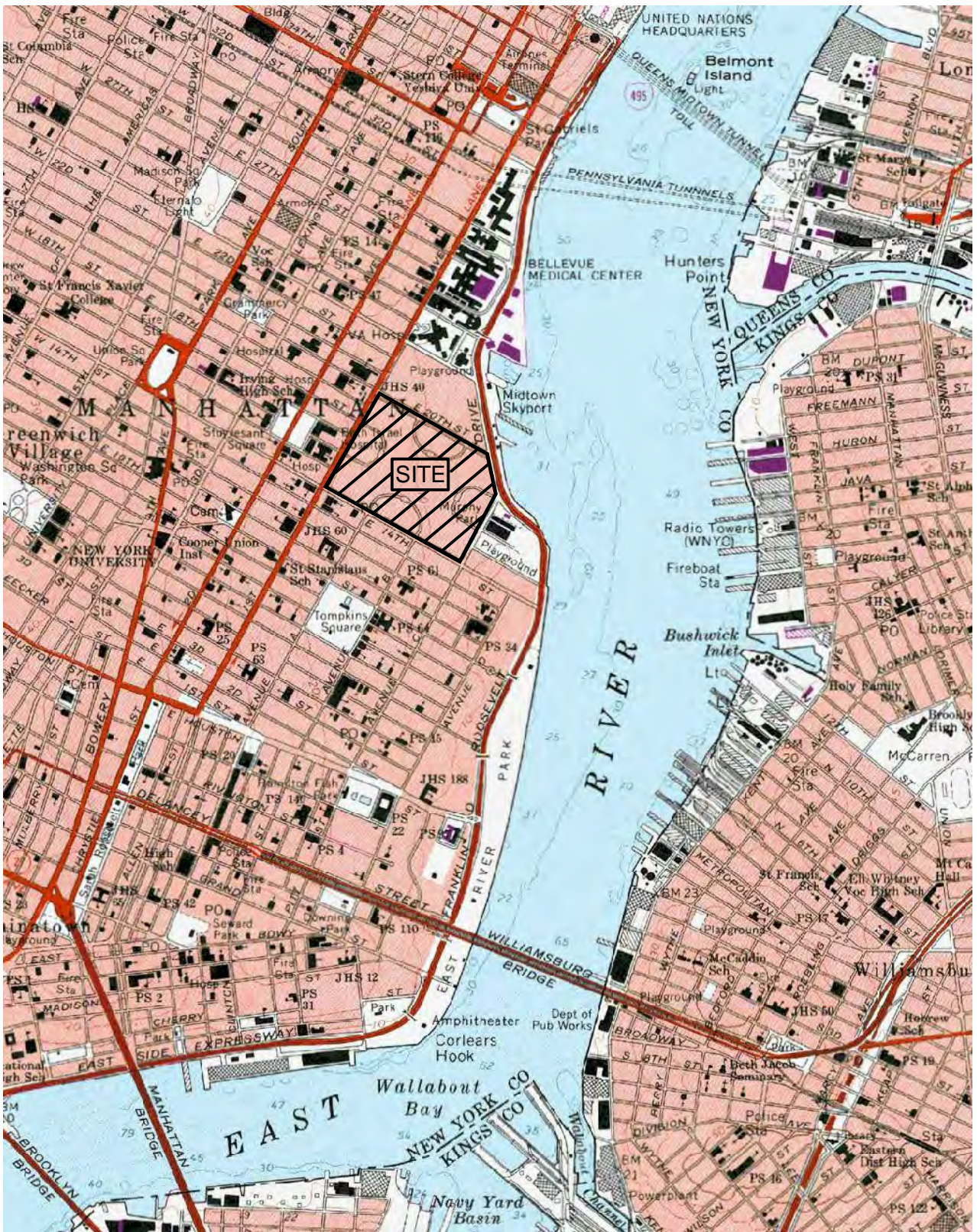
Receptor	Exposure Medium	Exposure Pathway	Pathway Not Considered Complete	Pathway Considered Potentially Complete, But Not Likely to Result in Exposure	Pathway Potentially Complete and Will Be Addressed in the Alternatives Analysis Report for the Site	Rationale for Inclusion or Exclusion
<b>Maintenance Worker - Indoor</b>						
<b>Maintenance Worker Indoor</b>	<b>Surface Soil (0-2 inches)</b>	Ingestion	X	---	---	An indoor maintenance worker would not contact surface soil.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	<b>Subsurface Soil (&gt;2 inches)</b>	Inhalation of Volatiles in Indoor Air	---	X	---	SVI evaluation sampling performed in all site buildings indicates that the concentrations of possibly MGP-related COC were low or attributable to non-MGP sources.
		Ingestion	X	---	---	
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
	<b>Groundwater</b>	Inhalation of Volatiles in Ambient Air	X	---	---	An indoor maintenance worker would not contact subsurface surface soil. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.
		Inhalation of Volatiles in Indoor Air	---	---	X	
		Ingestion	X	---	---	
		Dermal contact	X	---	---	
	<b>Surface Water</b>	Inhalation of Volatiles in Ambient Air	X	---	---	Sumps with groundwater are not present in the buildings. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potential complete and will be addressed in the alternatives analysis report.G9
		Inhalation of Volatiles in Indoor Air	X	---	X	
Ingestion		X	---	---		
Dermal contact		X	---	---		
<b>Landscaper/Groundskeeper</b>						
<b>Landscaper Groundskeeper</b>	<b>Surface Soil (0-2 inches)</b>	Ingestion	X	---	---	Outdoor maintenance workers who mow the grass or maintain the landscape materials on the site may be exposed to residuals in surface soil or particulates, therefore the exposure pathway is considered potentially complete. Since the site is covered with grass, the concentrations of COC are low, and the workers would only be on site in these areas for a short time, exposure is not likely.
		Dermal Contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	<b>Subsurface Soil (&gt;2 inches)</b>	Ingestion	X	---	---	Outdoor Maintenance Workers may be infrequently exposed to ambient air VOCs emanating from site impacted materials and NAPL; however, exposure is not likely due pavement cover, atmospheric mixing, and dilution of the VOCs in ambient air.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
	<b>Groundwater</b>	Ingestion	X	---	---	Outdoor maintenance workers are not likely to contact subsurface soils during their workday.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
		Ingestion	X	---	---	
	<b>Surface Water</b>	Dermal contact	X	---	---	Outdoor Maintenance Workers are not likely to contact groundwater during their workday.
		Ingestion	---	X	---	
Dermal contact		---	X	---		
Ingestion		---	X	---		
<b>Outdoor Subsurface Maintenance or Utility Worker</b>						
<b>Outdoor Subsurface Maintenance or Utility Worker</b>	<b>Surface Soil (0-2 inches)</b>	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers who repair or maintain equipment at the site may be exposed to residuals in surface soil or particulates, therefore the exposure pathway is considered potentially complete. Since the site is covered with pavement, buildings and grass and the concentrations of COC in surface soil is low, and the workers would only be on site for a short time, exposure is not likely.
		Dermal contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	<b>Subsurface Soil (&gt;2 inches)</b>	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to NAPL or other residuals in subsurface soil, dust, or VOCs in ambient air while completing excavation work to repair or replace subsurface utilities or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the site.
		Dermal contact	---	---	X	
		Inhalation of Particulates	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	<b>Groundwater</b>	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to residuals in groundwater and VOCs in ambient air while completing excavation work to repair or replace pipes or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the Site.
		Dermal contact	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
		Ingestion	---	X	---	
	<b>Surface Water</b>	Dermal contact	---	X	---	Surface water does not collect or pool in the Peter Cooper Village Area, therefore, subsurface utility repair work is unlikely to involve contact with this media.
		Ingestion	---	X	---	

**Table 6-1  
Exposure Pathway Analysis - Potential Area Receptors  
Stuyvesant Town Remedial Investigation Report  
New York, NY**

Receptor	Exposure Medium	Exposure Pathway	Pathway Not Considered Complete	Pathway Considered Potentially Complete, But Not Likely to Result in Exposure	Pathway Potentially Complete and Will Be Addressed in the Alternatives Analysis Report for the Site	Rationale for Inclusion or Exclusion
<b>Visitor or Trespasser</b>						
<b>Site Visitor or Trespasser</b>	<b>Surface Soil (0-2 inches)</b>	Ingestion	---	X	---	Visitors and trespassers may be exposed to residuals in surface soil and VOCs in ambient air while visiting the site; however, the concentrations of COC in surface soil is low, the site is covered with grass or pavement, the visitors or trespassers would only be on-site for a short time, and the site is secured and is an active facility with on-site personnel, therefore, exposure is not likely.
		Dermal contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	<b>Subsurface Soil (&gt;2 inches)</b>	Ingestion	X	---	---	Visitors or trespassers would not be exposed to subsurface soil while visiting the Site.
		Dermal contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	<b>Groundwater</b>	Ingestion	X	---	---	Visitors or trespassers would not be exposed to groundwater while visiting the Site.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	<b>Surface Water</b>	Ingestion	X	---	---	Visitors or trespassers may potentially be exposed to surface water while visiting the site; however, surface water does not pool on the site, and any contact would be likely to be for only a brief period of time, therefore, exposure is not likely.
Dermal contact		X	---	---		

## Figures





SOURCE:  
 BROOKLYN QUADRANGLE, NEW YORK - NEW JERSEY,  
 USGS 7.5 MINUTE (TOPOGRAPHIC), DATED 1967,  
 PHOTOREVISED 1981.



**AECOM**

**CONSOLIDATED EDISON OF NEW YORK INC.  
 STUYVESANT TOWN FORMER MGP SITES**

**SITE LOCATION MAP**

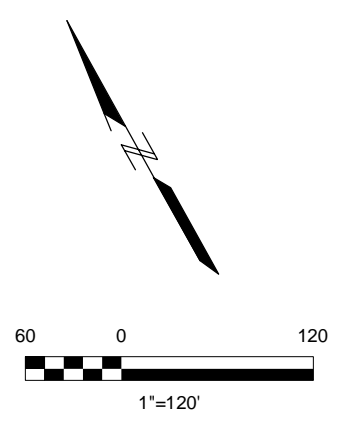
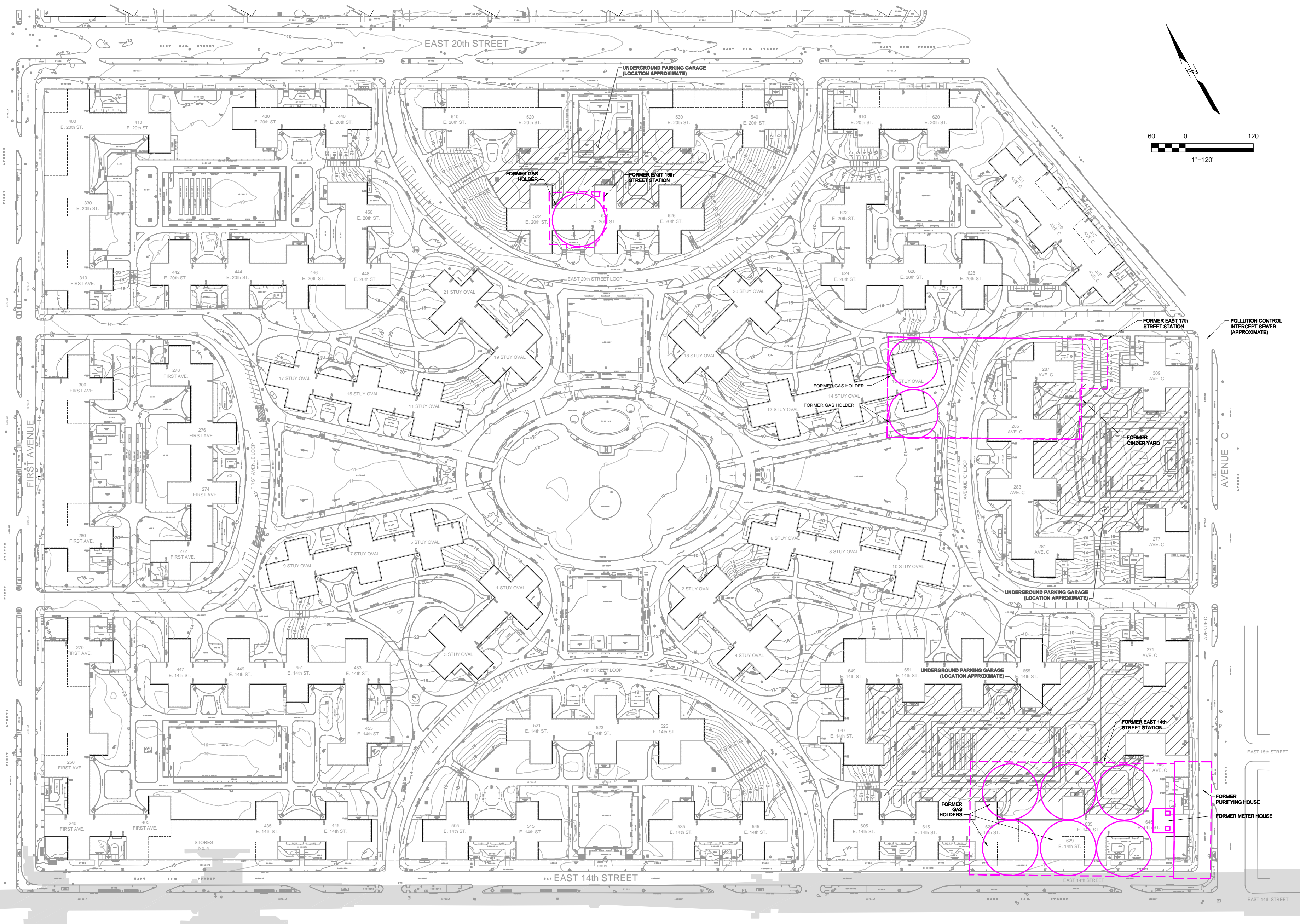
01869-164-270

DATE: 01/06/09

DRWN: RCW/WFD

**FIGURE 2-1**

File: F:\PROJECTS\Consolidated Edison NY\StuyTown\01869\CADD\RI Report 12-08\01869-164-270-S-01.dwg Layout: Former MGP Structures User: WarrenR Plotted: Jan 09, 2009 - 4:56pm Xref's:



- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
  - SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8-9/06. SURVEYED BY NEW YORK STATE-LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

**NOTE:**  
 PREVIOUS TEST PIT, SOIL BORING AND MONITORING WELL LOCATIONS OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005). PREVIOUS AIR AND SOIL GAS SAMPLE LOCATIONS TAKEN FROM THE RETEC GROUP, INC. EAST 14th WORKS AND EAST 17th AND EAST 19th STREET STATIONS, REPORT OF EVALUATION OF INDOOR AIR AND SOIL GAS SAMPLING (OCTOBER 2003).

<b>LEGEND</b>	
	LOW PRESSURE FIRE HYDRANT
	LIGHT POLE
	TRAFFIC BOX
	TRAFFIC POLE
	TRAFFIC SIGN
	SUBWAY
	UNDERGROUND PARKING GARAGE LOCATION (APPROXIMATE)
	GROUND SURFACE TOPOGRAPHY CONTOURS
	BOUNDARY OF FORMER MGP SITE

CONSOLIDATED EDISON OF NEW YORK INC.  
 STUYVESANT TOWN FORMER MGP SITES  
 01869-164-270

CURRENT SITE LAYOUT  
 AND FORMER MGP STRUCTURES

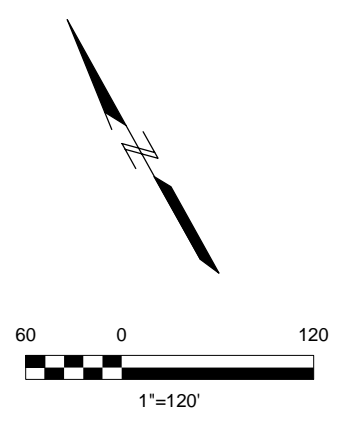
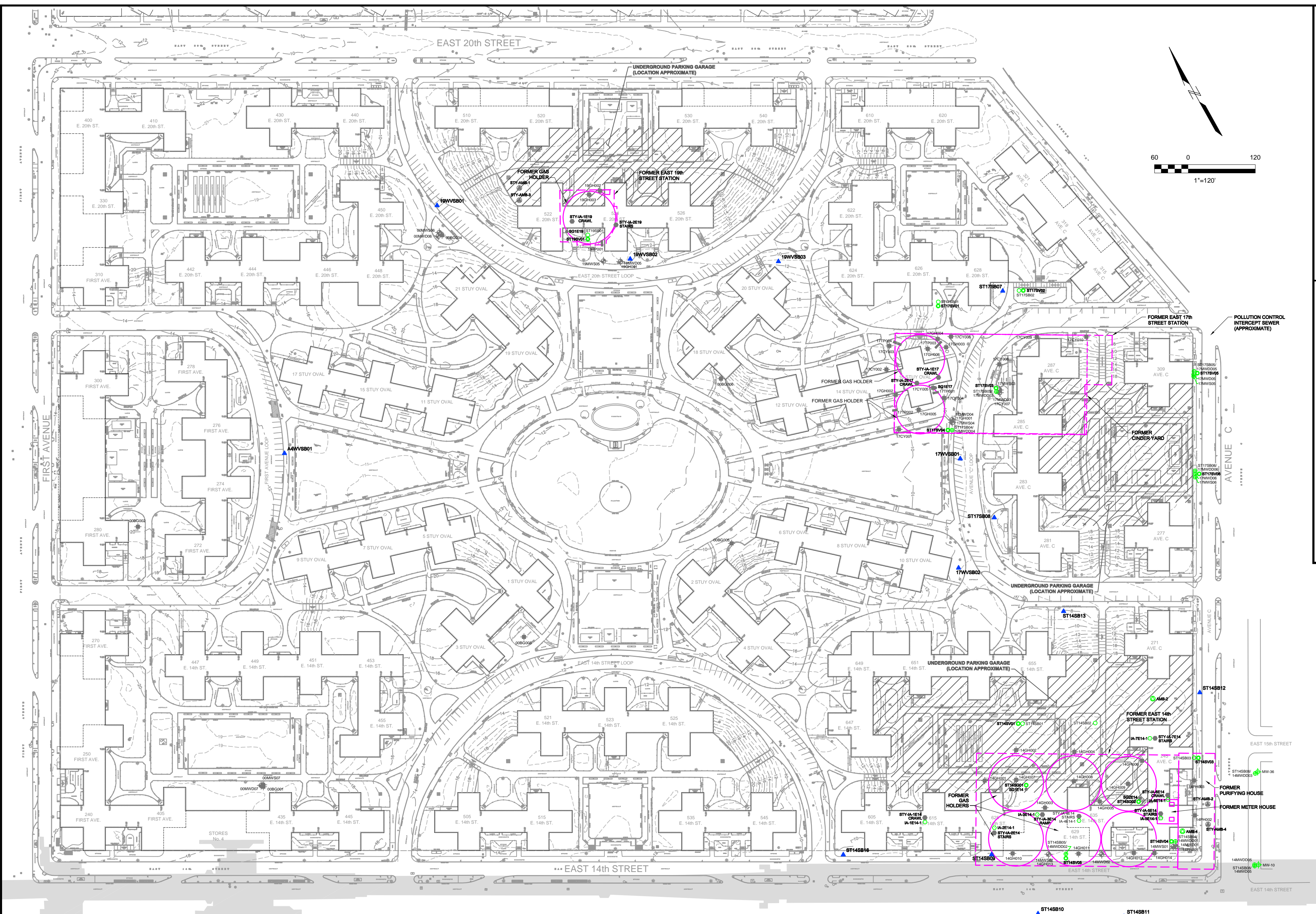
FIGURE 2-2

DATE: 01/09/09  
 DRWN: RCW/WFD

AECOM



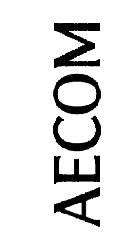
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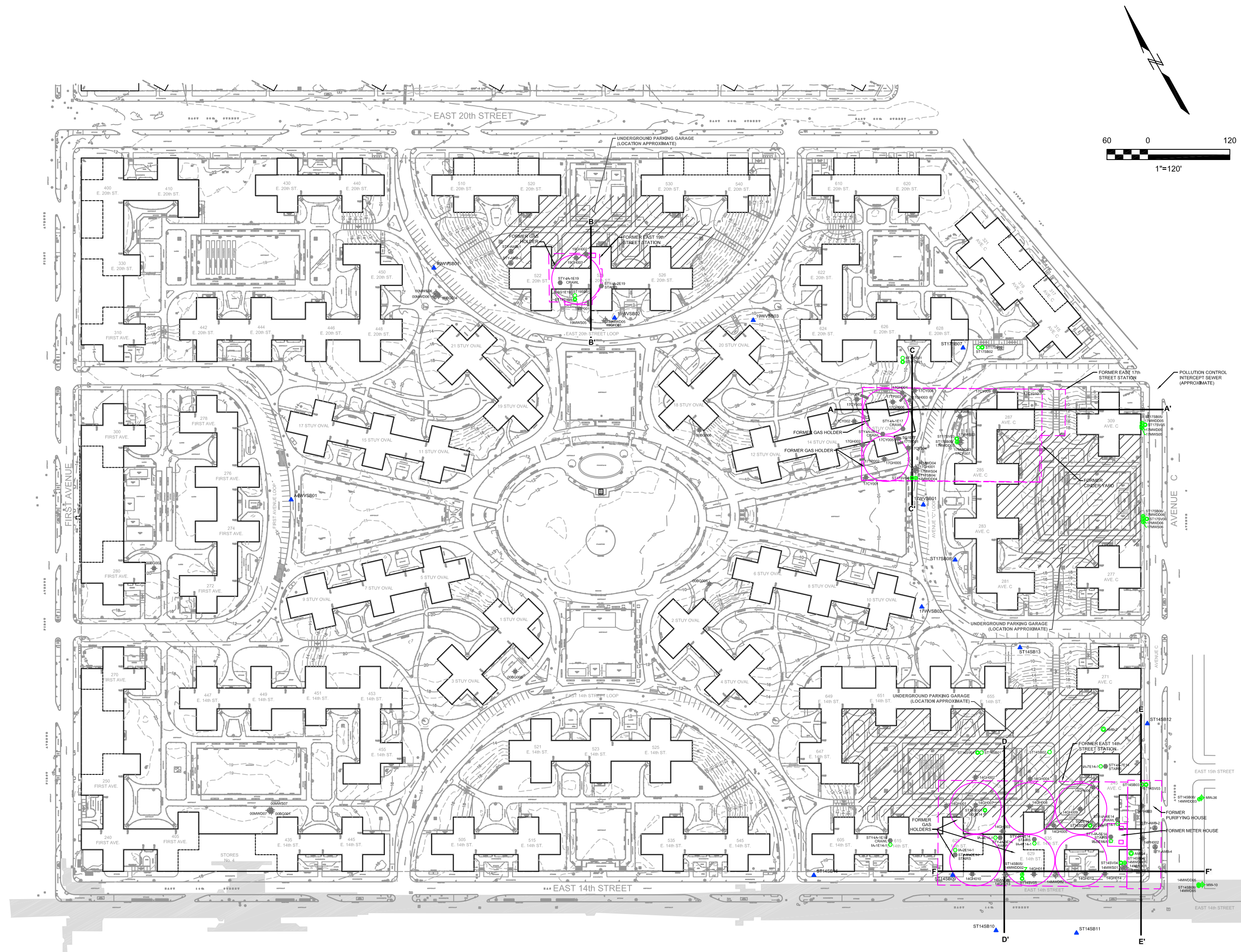


- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
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**NOTE:**  
PREVIOUS TEST PIT, SOIL BORING AND MONITORING WELL LOCATIONS OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005). PREVIOUS AIR AND SOIL GAS SAMPLE LOCATIONS TAKEN FROM THE RETEC GROUP, INC. EAST 14th WORKS AND EAST 17th AND EAST 19th STREET STATIONS, REPORT OF EVALUATION OF INDOOR AIR AND SOIL GAS SAMPLING (OCTOBER 2003).

LEGEND	
	LOW PRESSURE FIRE HYDRANT
	LIGHT POLE
	TRAFFIC BOX
	TRAFFIC POLE
	TRAFFIC SIGN
	SUBWAY
	UNDERGROUND PARKING GARAGE LOCATION (APPROXIMATE)
	ST14SB01 IRI SOIL BORING LOCATION
	14MWD01 IRI MONITORING WELL LOCATION
	ST14SB04/14MWD01 IRI COMBINED MONITORING WELL AND SOIL BORING LOCATION
	14GH001 SC SOIL BORING LOCATION
	14MW02 SC MONITORING WELL LOCATION
	14MWD01/14PH001 SC COMBINED MONITORING WELL AND SOIL BORING LOCATION
	MW-10 EXISTING OFFSITE MONITORING WELL LOCATION (APPROXIMATE)
	17TP001 SC TEST PIT LOCATION
	AMB-2 IRI APPROXIMATE AMBIENT AIR SAMPLE LOCATION
	IA-1E14-1 IRI APPROXIMATE INDOOR AIR SAMPLE LOCATION
	ST14SV05 IRI APPROXIMATE SOIL GAS SAMPLE LOCATION
	STY-AMB-2 APPROXIMATE AMBIENT AIR SAMPLE LOCATION
	STY-IA-1E14 APPROXIMATE INDOOR AIR SAMPLE LOCATION
	SG1E17 APPROXIMATE SOIL GAS SAMPLE LOCATION
	ST14SB10 SRI SOIL BORING LOCATION
	GROUND SURFACE TOPOGRAPHY CONTOURS
	BOUNDARY OF FORMER MGP SITE





**SOURCES:**

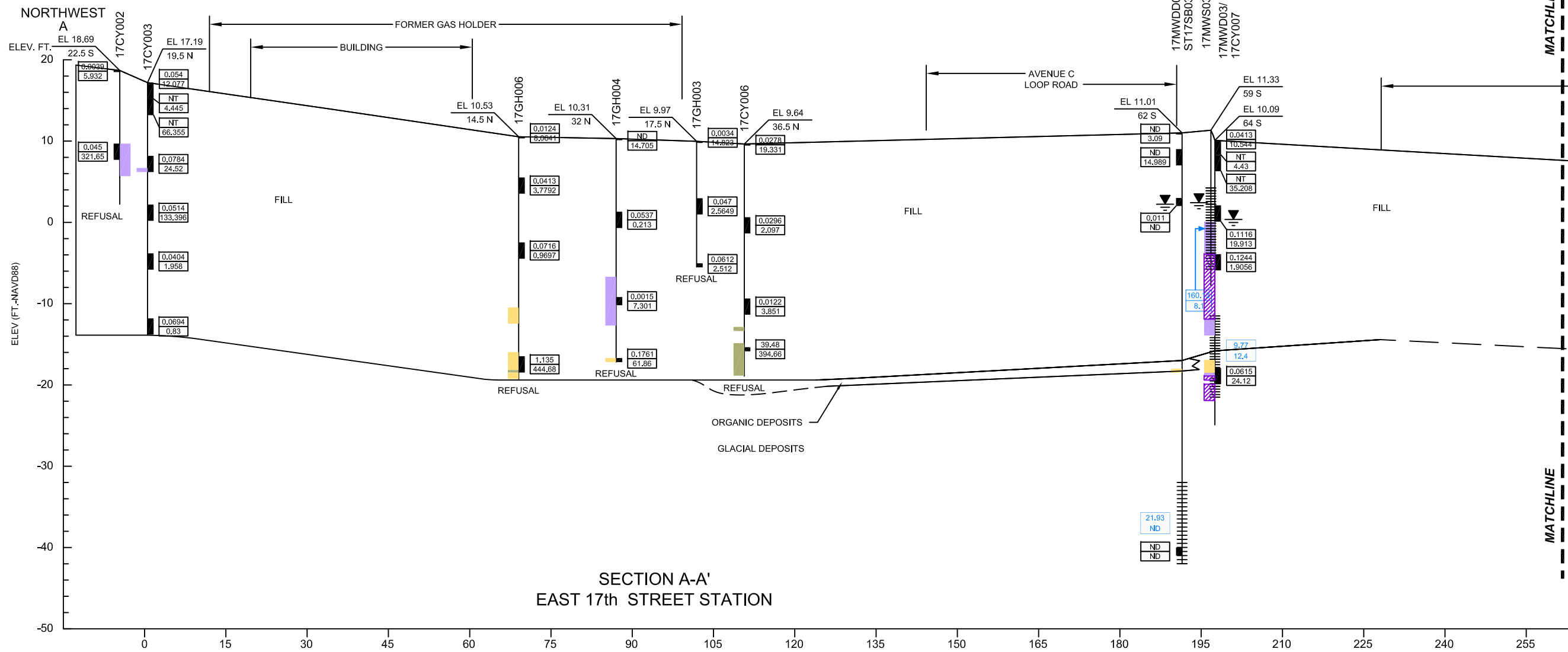
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**NOTE:**

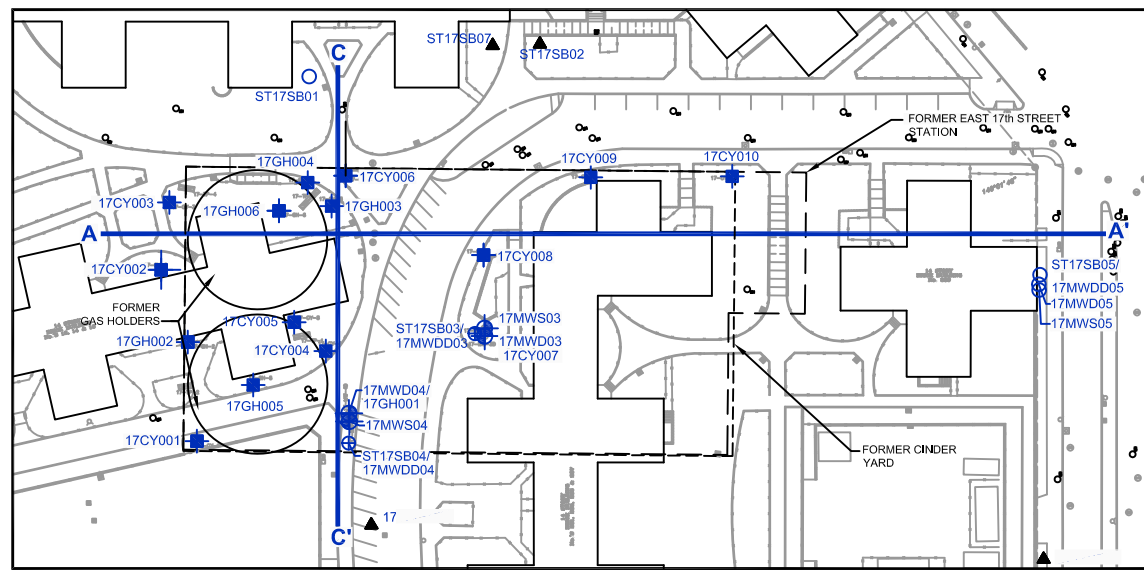
PREVIOUS TEST PIT, SOIL BORING AND MONITORING WELL LOCATIONS OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005). PREVIOUS AIR AND SOIL GAS SAMPLE LOCATIONS TAKEN FROM THE RETEC GROUP, INC. EAST 14th WORKS AND EAST 17th AND EAST 19th STREET STATIONS, REPORT OF EVALUATION OF INDOOR AIR AND SOIL GAS SAMPLING (OCTOBER 2003).

**LEGEND**

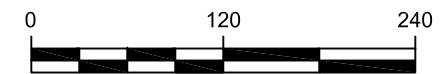
	LOW PRESSURE FIRE HYDRANT		ST14SB01	GEI SOIL BORING LOCATION		17TP001	PREVIOUS TEST PIT LOCATION		ST14SB10	ENSR/AECOM SOIL BORING LOCATION
	LIGHT POLE		14MWD001	GEI MONITORING WELL LOCATION		AMB-2	GEI AMBIENT AIR SAMPLE LOCATION (APPROXIMATE)		20	GROUND SURFACE TOPOGRAPHY CONTOURS
	TRAFFIC BOX		ST14SB04/14MWD001	GEI COMBINED MONITORING WELL AND SOIL BORING LOCATION		IA-1E14-1	GEI INDOOR AIR SAMPLE LOCATION (APPROXIMATE)			BOUNDARY OF FORMER MGP SITE
	TRAFFIC POLE		14GH001	EXISTING SOIL BORING LOCATION		ST14SV05	GEI SOIL GAS LOCATION (APPROXIMATE)			
	TRAFFIC SIGN		14MW002	EXISTING MONITORING WELL LOCATION		STY-AMB-2	PREVIOUS AMBIENT AIR SAMPLE LOCATION (APPROXIMATE)			
	SUBWAY		14MW001	EXISTING COMBINED MONITORING WELL AND SOIL BORING LOCATION		STY-IA-1E14	PREVIOUS INDOOR AIR SAMPLE LOCATION (APPROXIMATE)			
	UNDERGROUND PARKING GARAGE LOCATION (APPROXIMATE)		14PH001	EXISTING OFFSITE MONITORING WELL LOCATION (APPROXIMATE)		SG1E17	PREVIOUS SOIL GAS LOCATION (APPROXIMATE)			



SECTION A-A'  
EAST 17th STREET STATION



CROSS SECTION LOCATIONS



**NOTES:**

- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
- TOTAL VOCs AND SVOCs IN SOIL COMPARED TO TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046 VALUES OF 10 ppm AND 500 ppm, RESPECTIVELY.
- GEI AND ENSR/AECOM INFERRED GEOLOGICAL CHARACTERISTICS OF SUBSURFACE BETWEEN INVESTIGATION LOCATIONS.
- IF DUPLICATE SAMPLE WAS COLLECTED, SAMPLE SHOWING HIGHEST VALUE IS LISTED.
- GROUNDWATER CONCENTRATIONS SHOWN ARE FROM JUNE 2006 GROUNDWATER SAMPLING EVENT CONDUCTED BY GEI.

**SOURCES:**

- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
- SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 8/8-9/06. SURVEYED BY NEW YORK STATE-LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
- SURVEY OF ENSR/AECOM SAMPLE LOCATIONS CONDUCTED BY ENSR/AECOM IN 2008 BY A NEW YORK STATE LICENSED LAND SURVEYOR, HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND LAMBERT, NAD83. VERTICAL DATUM: NAVD88.

**LEGEND**

	CONTACT		SOIL BORING OR MONITORING WELL IDENTIFICATION
	OBSERVED APPARENT GROUNDWATER TABLE		ANALYTICAL SOIL SAMPLE INTERVAL
	MONITORING WELL SCREENED INTERVAL		MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)
	0.0615 24.12		9.77 12.4
	TOTAL SVOCs IN SOIL (SEMIVOLATILE ORGANIC COMPOUNDS) mg/kg		TOTAL SVOCs IN GROUNDWATER (SEMIVOLATILE ORGANIC COMPOUNDS) ug/L
	ND		NT
	RED		MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

	TAR SATURATED		MGP-LIKE ODORS
	TAR BLEBS		PETROLEUM STAINING OR SHEEN
	TAR STAINING OR SHEEN		PETROLEUM-LIKE ODORS

NO.	DESCRIPTION	DATE	BY

**AECOM**

**AECOM ENVIRONMENT**  
RUSTEN CORPORATE PARK  
100 RED SCHOOLHOUSE ROAD, SUITE B-1  
CHESTNUT RIDGE, NY 10977  
PHONE: (845) 425-4980  
FAX: (845) 425-4989  
WEB: HTTP://WWW.AECOM.COM

**EAST 17th STREET STATION  
CROSS SECTION A-A'**

Consolidated Edison of New York, Inc  
Stuyvesant Town Former MGP Sites

SCALE: AS NOTED

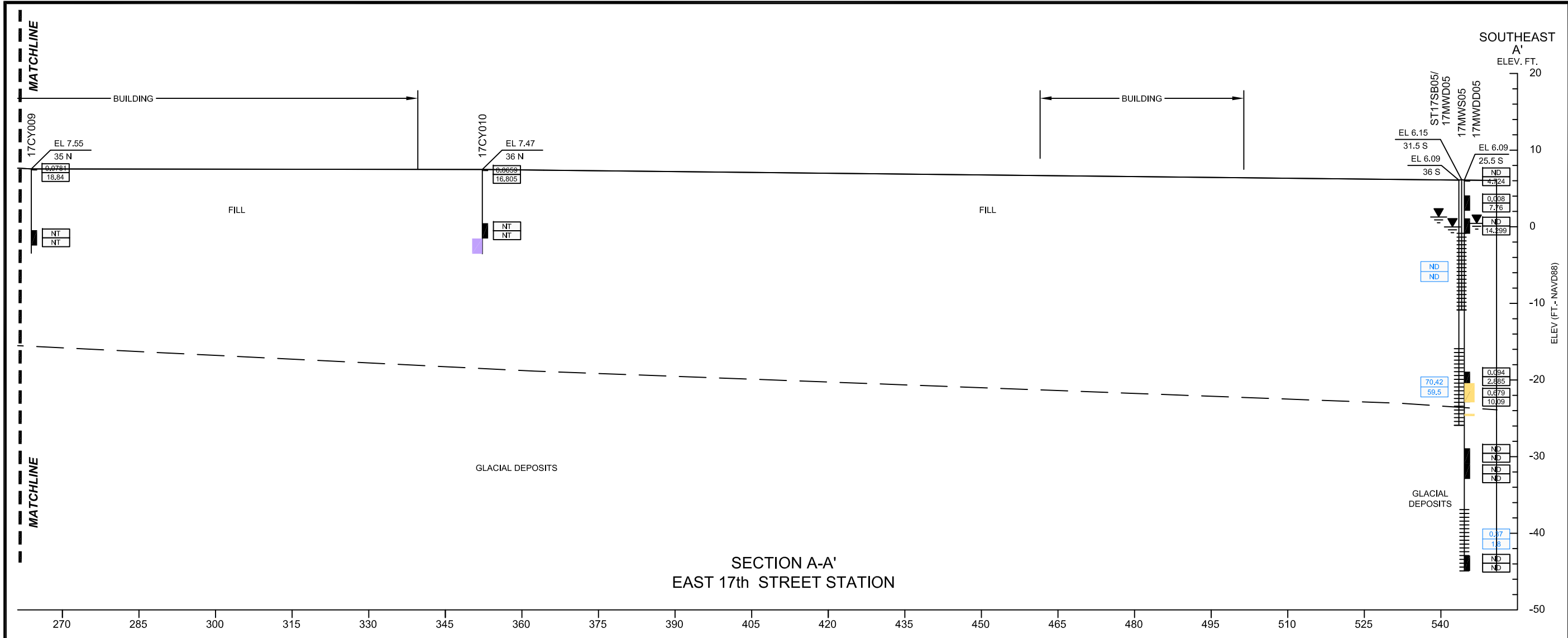
DATE: 09/21/09

PROJECT NUMBER: 01869-164-270

FIGURE NUMBER:  
**4-2A**

SHEET NUMBER:  
1 of 2

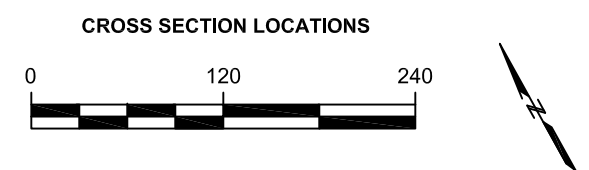
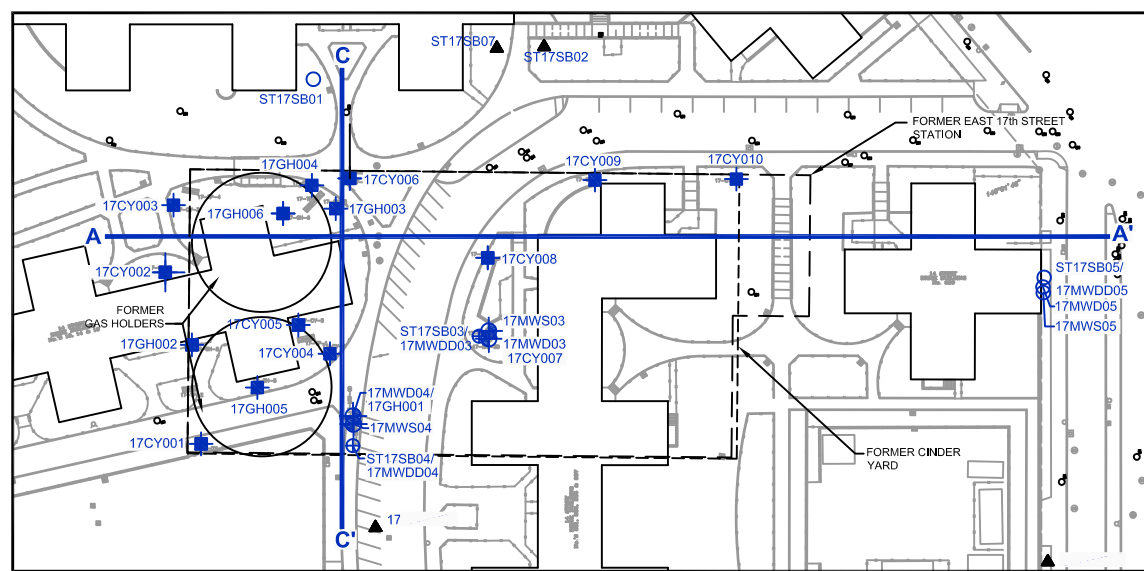
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NO.	DESCRIPTION	DATE	BY

**AECOM**

**AECOM ENVIRONMENT**  
RUSTEN CORPORATE PARK  
100 RED SCHOOLHOUSE ROAD, SUITE B-1  
CHESTNUT RIDGE, NY 10977  
PHONE: (845) 425-4980  
FAX: (845) 425-4989  
WEB: HTTP://WWW.AECOM.COM



- NOTES:**
- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
  - TOTAL VOCs AND SVOCs IN SOIL COMPARED TO TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046 VALUES OF 10 ppm AND 500 ppm, RESPECTIVELY.
  - GEI AND ENSR/AECOM INFERRED GEOLOGICAL CHARACTERISTICS OF SUBSURFACE BETWEEN INVESTIGATION LOCATIONS.
  - IF DUPLICATE SAMPLE WAS COLLECTED, SAMPLE SHOWING HIGHEST VALUE IS LISTED.
  - GROUNDWATER CONCENTRATIONS SHOWN ARE FROM JUNE 2006 GROUNDWATER SAMPLING EVENT CONDUCTED BY GEI.

- SOURCES:**
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  - SURVEY OF ENSR/AECOM SAMPLE LOCATIONS CONDUCTED BY ENSR/AECOM IN 2008 BY A NEW YORK STATE LICENSED LAND SURVEYOR, HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND LAMBERT, NAD83. VERTICAL DATUM: NAVD88.

**LEGEND**

CONTACT

SOIL BORING OR MONITORING WELL IDENTIFICATION

OBSERVED APPARENT GROUNDWATER TABLE

ANALYTICAL SOIL SAMPLE INTERVAL

MONITORING WELL SCREENED INTERVAL

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)

ug/L MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

0.0615, 24.12

9.77, 12.4

ND NOT DETECTED

NT NOT TESTED

RED EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL

**PHYSICAL OBSERVATIONS**

TAR SATURATED

TAR BLEBS

TAR STAINING OR SHEEN

MGP-LIKE ODORS

PETROLEUM STAINING OR SHEEN

PETROLEUM-LIKE ODORS

**EAST 17th STREET STATION CROSS SECTION A-A'**

Consolidated Edison of New York, Inc  
Stuyvesant Town Former MGP Sites

SCALE: AS NOTED

DATE: 09/21/09

PROJECT NUMBER: 01869-164-270

FIGURE NUMBER:

**4-2B**

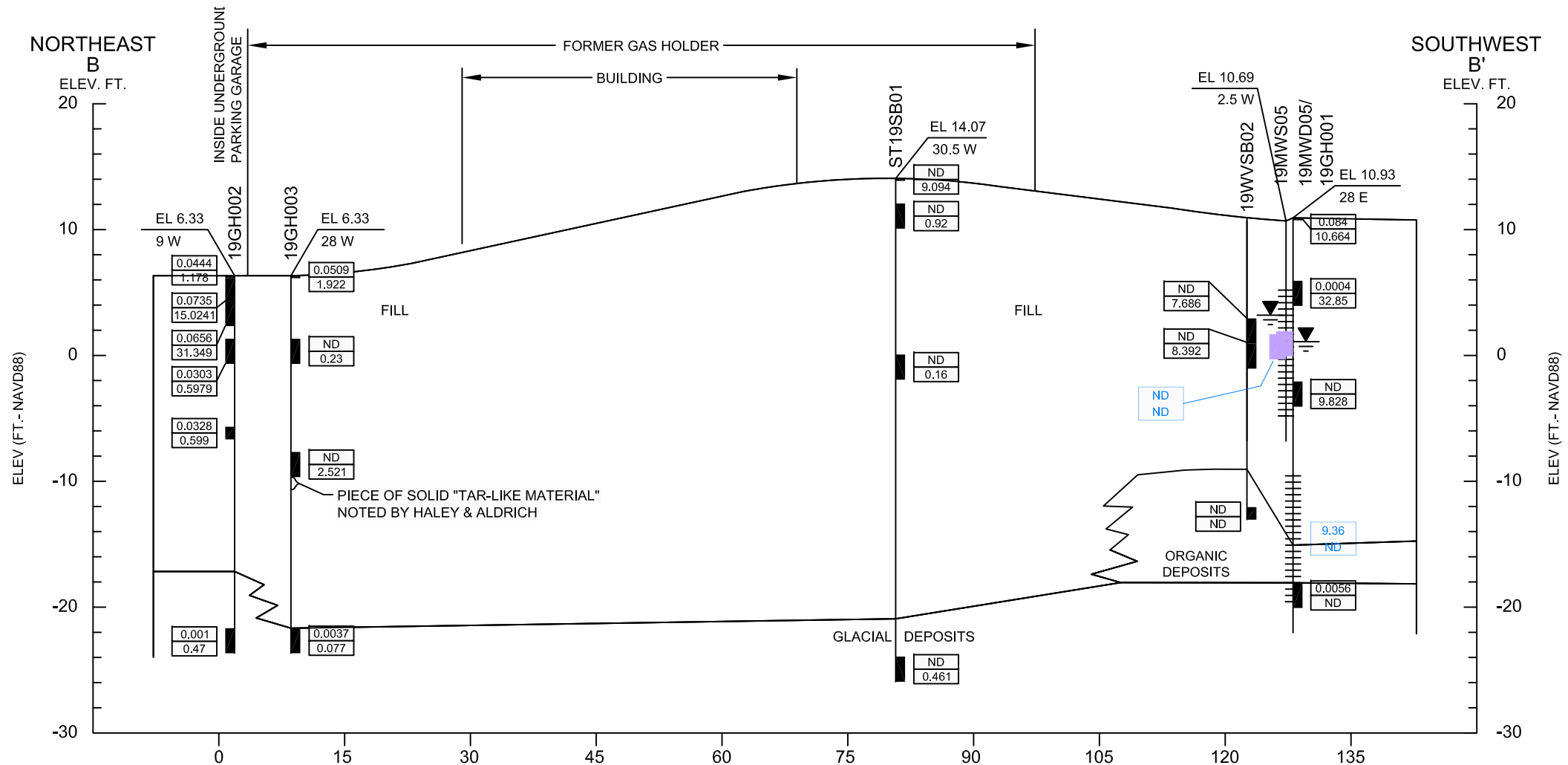
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2 of 2

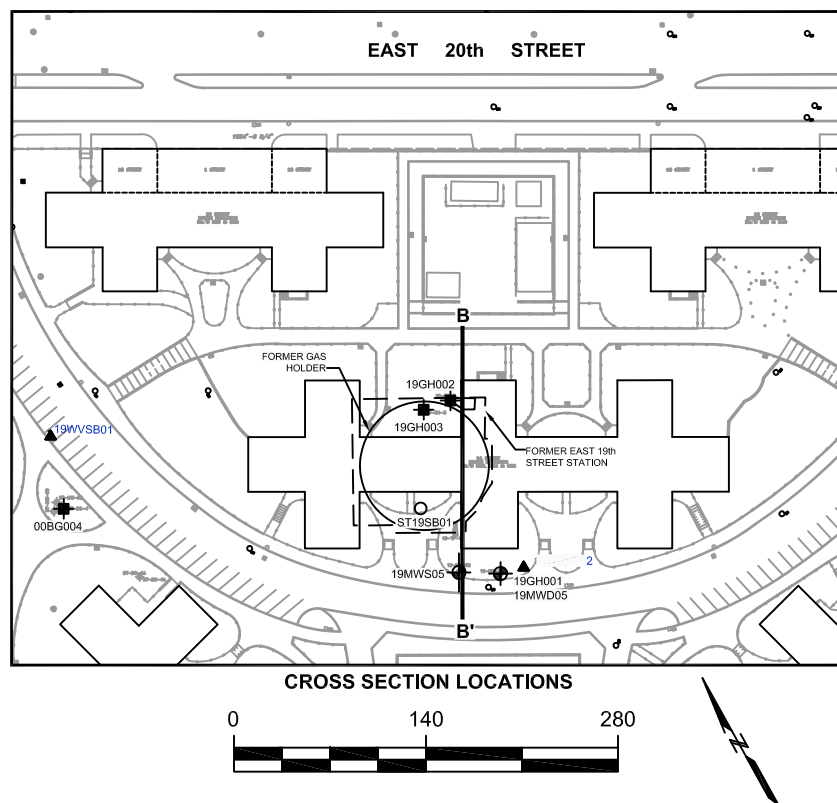
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SECTION B-B'  
EAST 19th STREET STATION



CROSS SECTION LOCATIONS

**NOTES:**

- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
- TOTAL VOCs AND SVOCs IN SOIL COMPARED TO TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046 VALUES OF 10 ppm AND 500 ppm, RESPECTIVELY.
- GEI AND ENSR/AECOM INFERRED GEOLOGICAL CHARACTERISTICS OF SUBSURFACE BETWEEN INVESTIGATION LOCATIONS.
- IF DUPLICATE SAMPLE WAS COLLECTED, SAMPLE SHOWING HIGHEST VALUE IS LISTED.
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**SOURCES:**

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**LEGEND**

	CONTACT		TOTAL VOCs IN SOIL (VOLATILE ORGANIC COMPOUNDS) mg/kg
	SOIL BORING OR MONITORING WELL IDENTIFICATION		TOTAL SVOCs IN SOIL (SEMIVOLATILE ORGANIC COMPOUNDS) mg/kg
	OBSERVED APPARENT GROUNDWATER TABLE		TOTAL VOCs IN GROUNDWATER (VOLATILE ORGANIC COMPOUNDS) ug/L
	ANALYTICAL SOIL SAMPLE INTERVAL		TOTAL SVOCs IN GROUNDWATER (SEMIVOLATILE ORGANIC COMPOUNDS) ug/L
	MONITORING WELL SCREENED INTERVAL	ND	NOT DETECTED
		NT	NOT TESTED
		RED	EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)      ug/L MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

	TAR SATURATED		MGP-LIKE ODORS
	TAR BLEBS		PETROLEUM STAINING OR SHEEN
	TAR STAINING OR SHEEN		PETROLEUM-LIKE ODORS

REVISIONS	NO.	DESCRIPTION	DATE	BY

**AECOM**

**AECOM ENVIRONMENT**  
RUSTEN CORPORATE PARK  
100 RED SCHOOLHOUSE ROAD, SUITE B-1  
CHESTNUT RIDGE, NY 10977  
PHONE: (845) 425-4980  
FAX: (845) 425-4989  
WEB: HTTP://WWW.AECOM.COM

**EAST 19th STREET STATION  
CROSS SECTION B-B'**

Consolidated Edison of New York, Inc  
Stuyvesant Town Former MGP Sites

SCALE: AS NOTED

DATE: 09/21/09

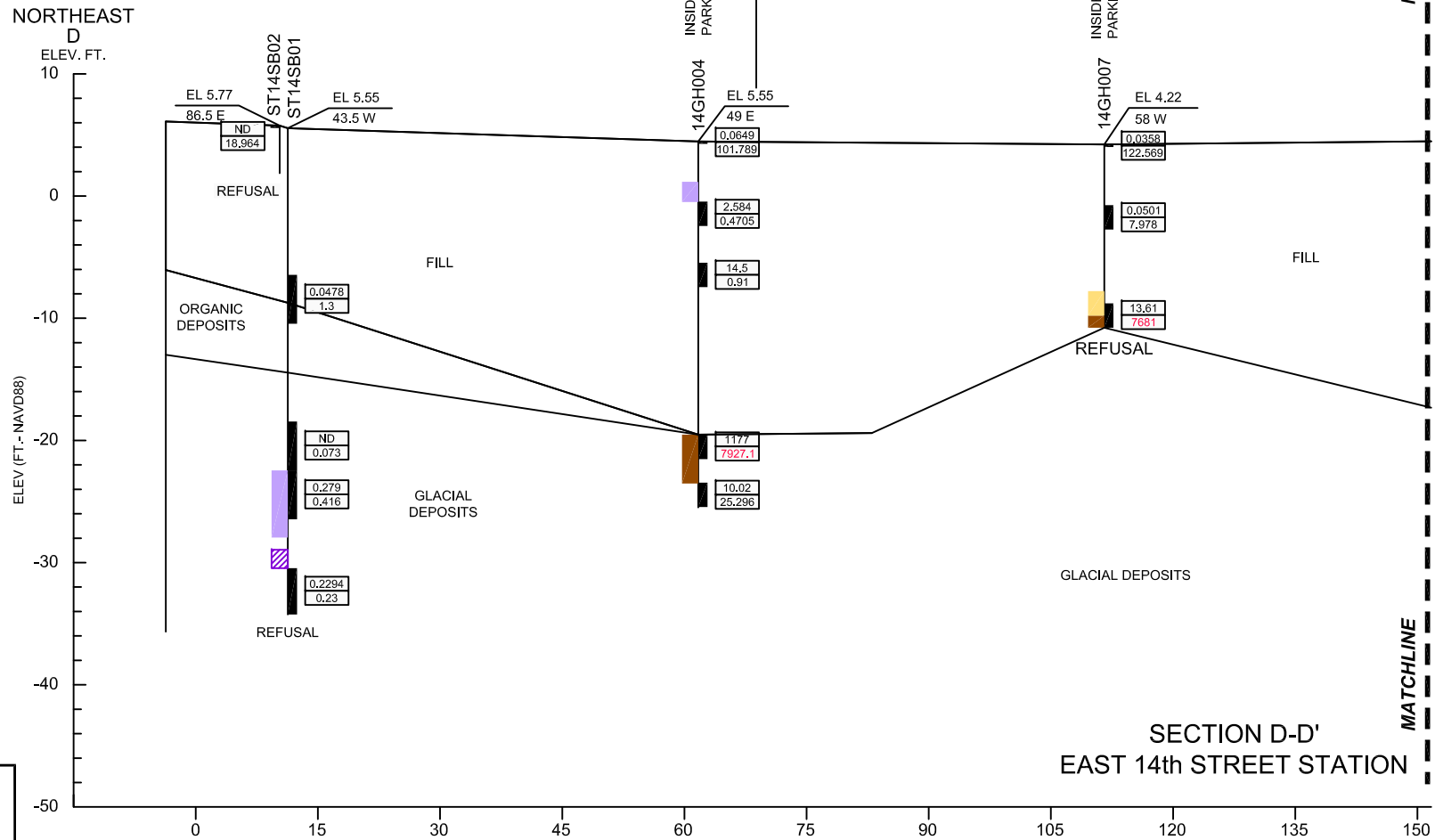
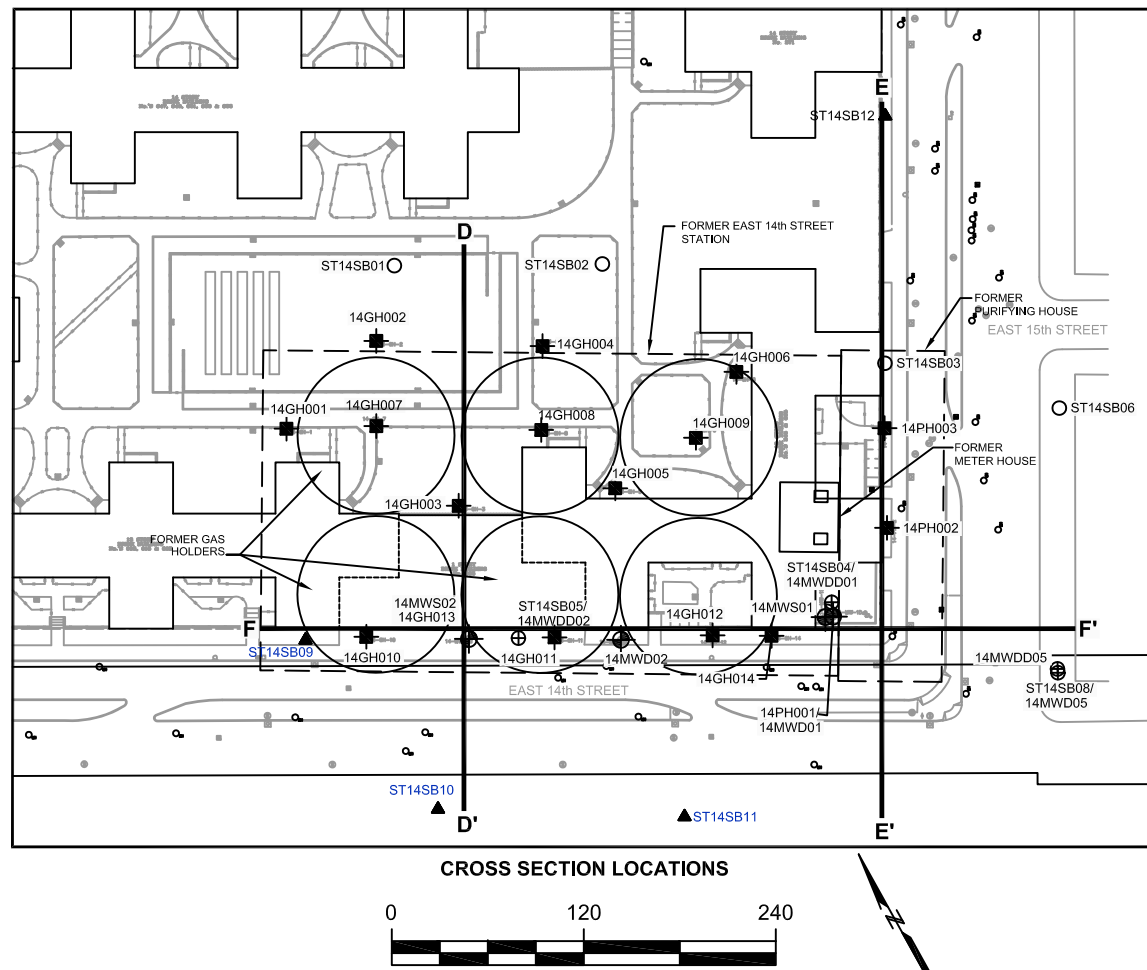
PROJECT NUMBER: 01869-164-270

FIGURE NUMBER:  
**4-4**

SHEET NUMBER:  
1 of 1

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- NOTES:**
- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
  - TOTAL VOCs AND SVOCs IN SOIL COMPARED TO TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046 VALUES OF 10 ppm AND 500 ppm, RESPECTIVELY.
  - GEI AND ENSR/AECOM INFERRED GEOLOGICAL CHARACTERISTICS OF SUBSURFACE BETWEEN INVESTIGATION LOCATIONS.
  - IF DUPLICATE SAMPLE WAS COLLECTED, SAMPLE SHOWING HIGHEST VALUE IS LISTED.
  - GROUNDWATER CONCENTRATIONS SHOWN ARE FROM JUNE 2006 GROUNDWATER SAMPLING EVENT CONDUCTED BY GEI.

- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
  - SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 8/8-9/06. SURVEYED BY NEW YORK STATE-LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
  - SURVEY OF ENSR/AECOM SAMPLE LOCATIONS CONDUCTED BY ENSR/AECOM IN 2008 BY A NEW YORK STATE LICENSED LAND SURVEYOR. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND LAMBERT, NAD83. VERTICAL DATUM: NAVD88.

**LEGEND**

	CONTACT		SOIL BORING OR MONITORING WELL IDENTIFICATION
	OBSERVED APPARENT GROUNDWATER TABLE		ANALYTICAL SOIL SAMPLE INTERVAL
	MONITORING WELL SCREENED INTERVAL		MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)
	MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)		MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

	TAR SATURATED		MGP-LIKE ODORS
	TAR BLEBS		PETROLEUM STAINING OR SHEEN
	TAR STAINING OR SHEEN		PETROLEUM-LIKE ODORS

	0.0615 24.12	TOTAL VOCs IN SOIL (VOLATILE ORGANIC COMPOUNDS) mg/kg
		TOTAL SVOCs IN SOIL (SEMIVOLATILE ORGANIC COMPOUNDS) mg/kg
	9.77 12.4	TOTAL VOCs IN GROUNDWATER (VOLATILE ORGANIC COMPOUNDS) ug/L
		TOTAL SVOCs IN GROUNDWATER (SEMIVOLATILE ORGANIC COMPOUNDS) ug/L
ND	NOT DETECTED	
NT	NOT TESTED	
RED	EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL	

NO.	DESCRIPTION	DATE	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
	LLM/jk		

**AECOM**

**AECOM ENVIRONMENT**  
 RUSTEN CORPORATE PARK  
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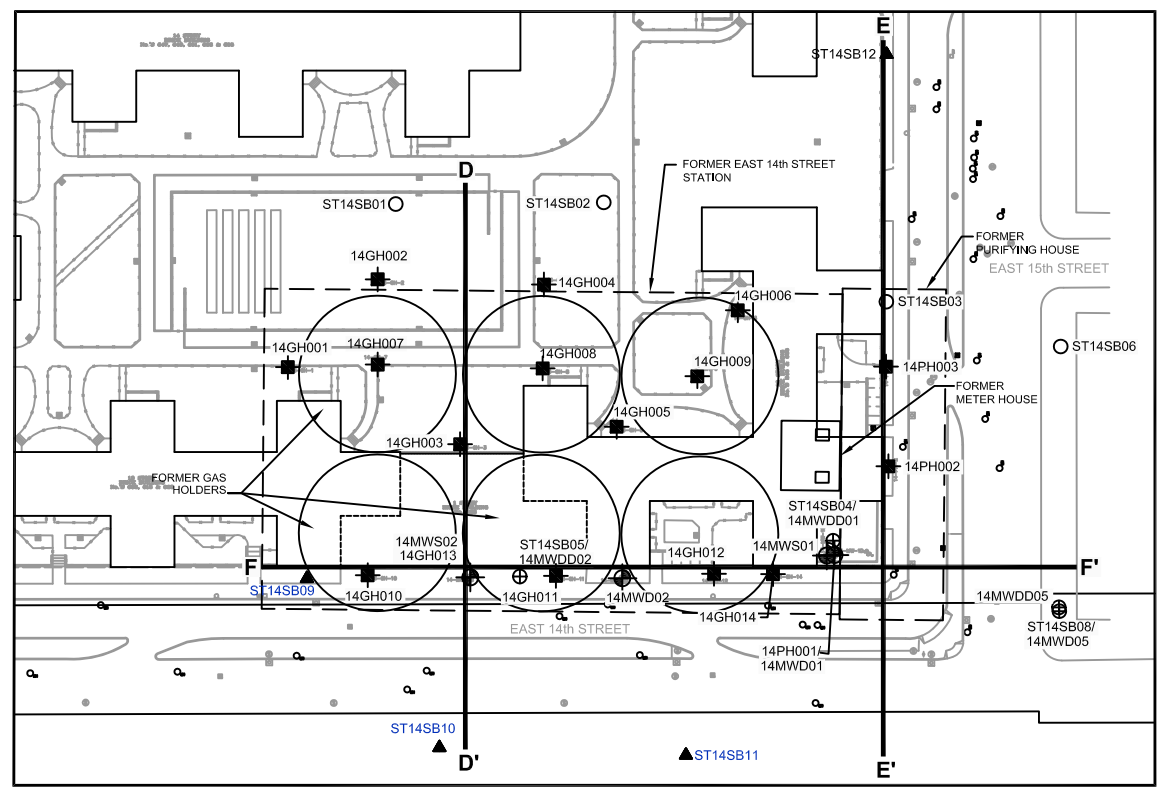
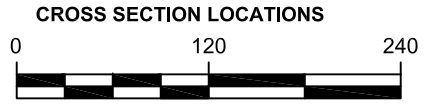
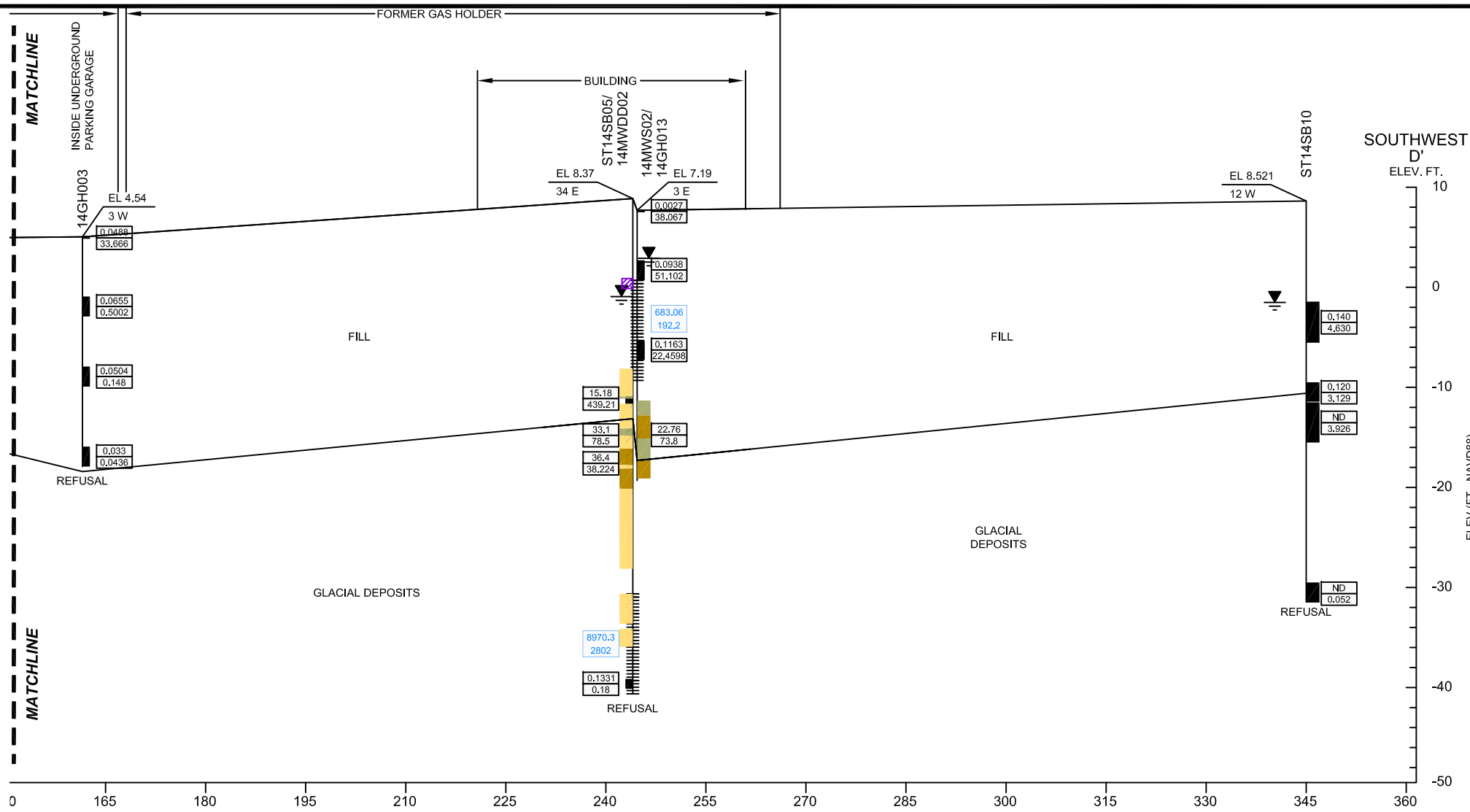
**EAST 14th STREET STATION  
CROSS SECTION D-D'**

Consolidated Edison of New York, Inc  
 Stuyvesant Town Former MGP Sites

DATE: 09/21/09  
 PROJECT NUMBER: 01869-164-270  
 SCALE: AS NOTED

FIGURE NUMBER:  
**4-5A**

SHEET NUMBER:  
 1 of 2



- NOTES:**
- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
  - TOTAL VOCs AND SVOCs IN SOIL COMPARED TO TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046 VALUES OF 10 ppm AND 500 ppm, RESPECTIVELY.
  - GEI AND ENSR/AECOM INFERRED GEOLOGICAL CHARACTERISTICS OF SUBSURFACE BETWEEN INVESTIGATION LOCATIONS.
  - IF DUPLICATE SAMPLE WAS COLLECTED, SAMPLE SHOWING HIGHEST VALUE IS LISTED.
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**LEGEND**

CONTACT

SOIL BORING OR MONITORING WELL IDENTIFICATION

OBSERVED APPARENT GROUNDWATER TABLE

ANALYTICAL SOIL SAMPLE INTERVAL

MONITORING WELL SCREENED INTERVAL

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)

ug/L MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

	TAR SATURATED		MGP-LIKE ODORS
	TAR BLEBS		PETROLEUM STAINING OR SHEEN
	TAR STAINING OR SHEEN		PETROLEUM-LIKE ODORS

**CONCENTRATION DATA:**

0.0615	24.12	TOTAL VOCs IN SOIL (VOLATILE ORGANIC COMPOUNDS) mg/kg
9.77	12.4	TOTAL SVOCs IN SOIL (SEMIVOLATILE ORGANIC COMPOUNDS) mg/kg
ND		TOTAL VOCs IN GROUNDWATER (VOLATILE ORGANIC COMPOUNDS) ug/L
NT		TOTAL SVOCs IN GROUNDWATER (SEMIVOLATILE ORGANIC COMPOUNDS) ug/L
RED		EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL

NO.	DESCRIPTION	DATE	BY:

**AECOM**

**AECOM ENVIRONMENT**  
 RUSTEN CORPORATE PARK  
 100 RED SCHOOLHOUSE ROAD, SUITE B-1  
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 FAX: (845) 425-4989  
 WEB: HTTP://WWW.AECOM.COM

**EAST 14th STREET STATION  
CROSS SECTION D-D'**

Consolidated Edison of New York, Inc  
 Stuyvesant Town Former MGP Sites

SCALE: AS NOTED

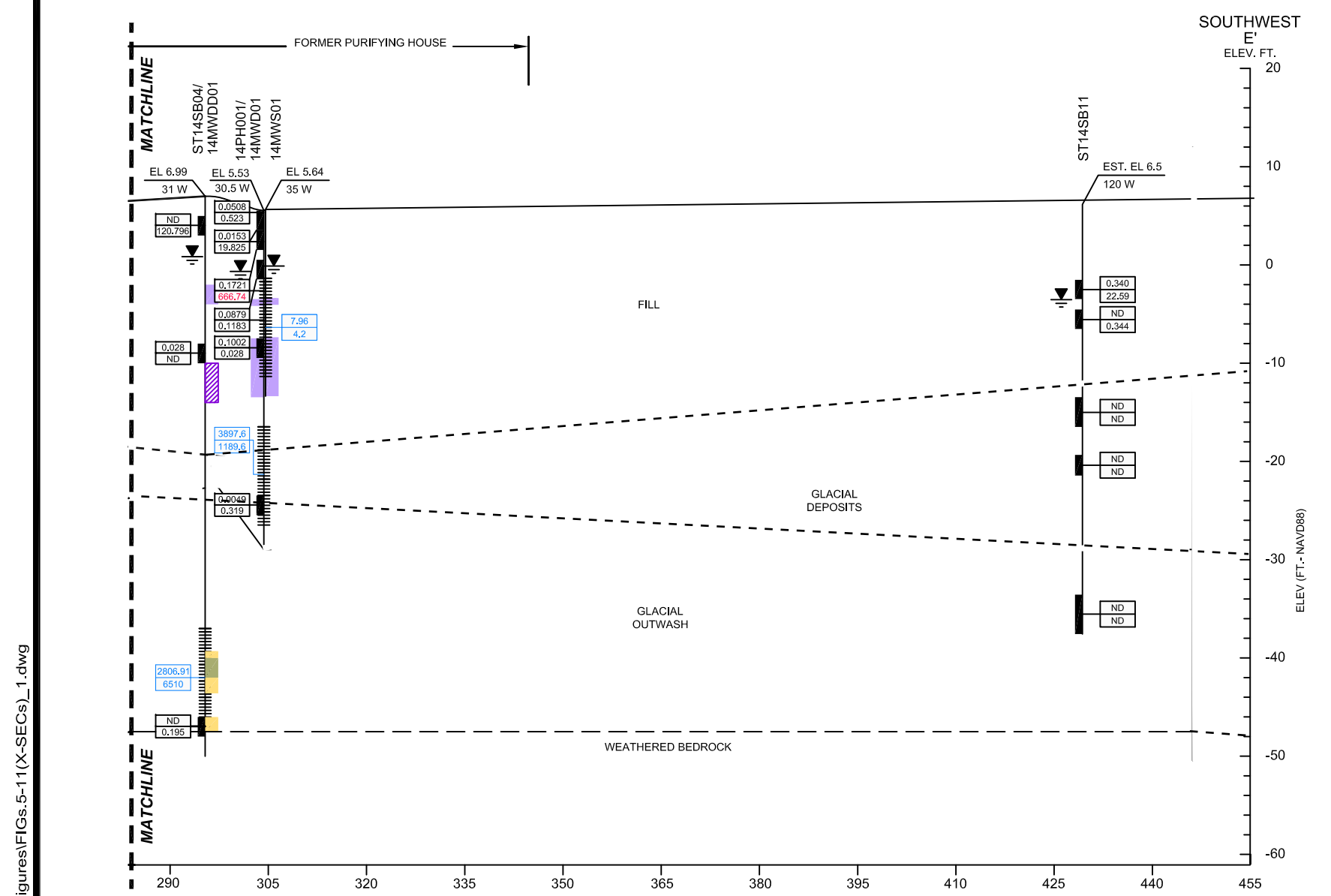
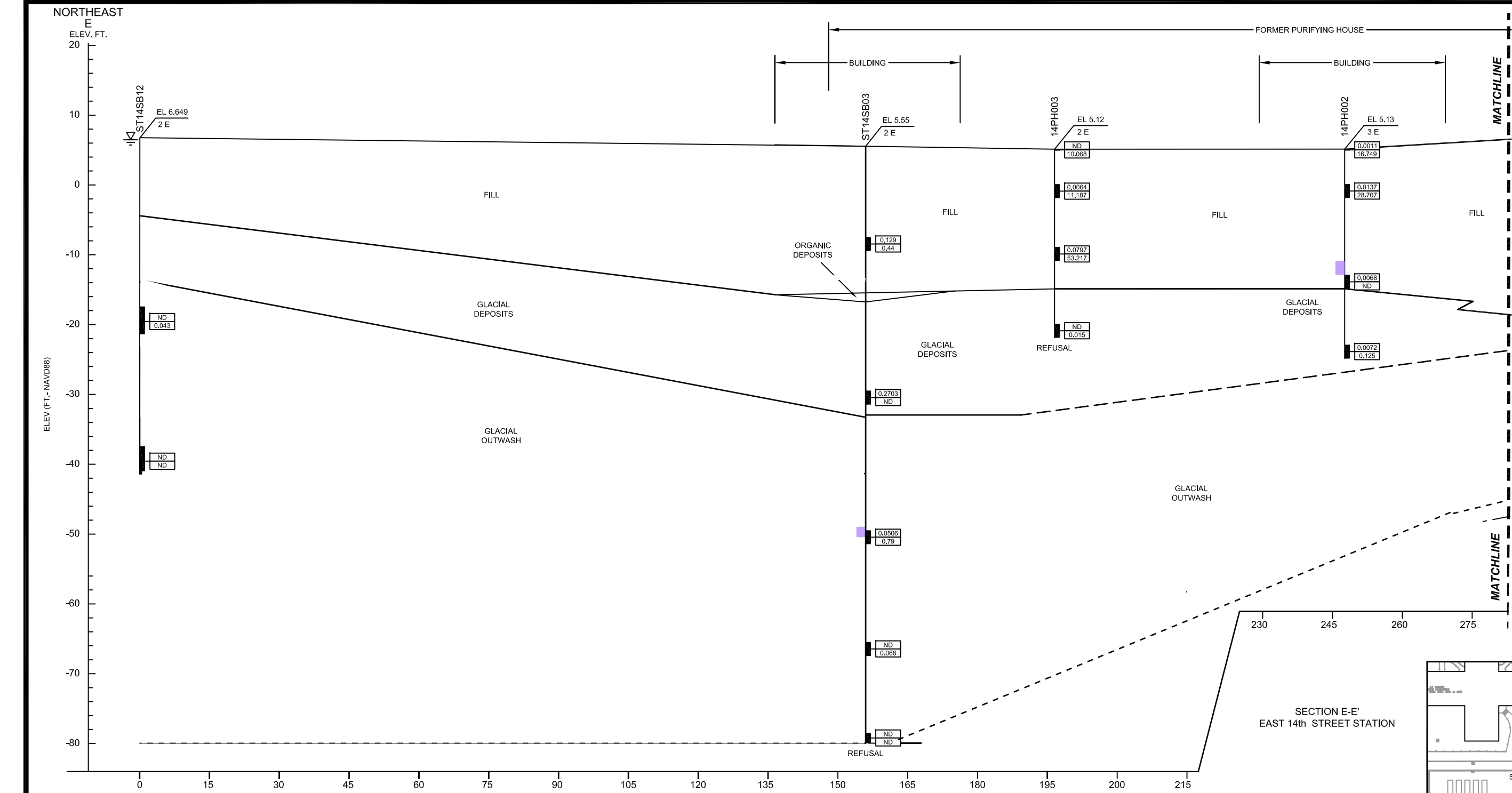
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PROJECT NUMBER: 01869-164-270

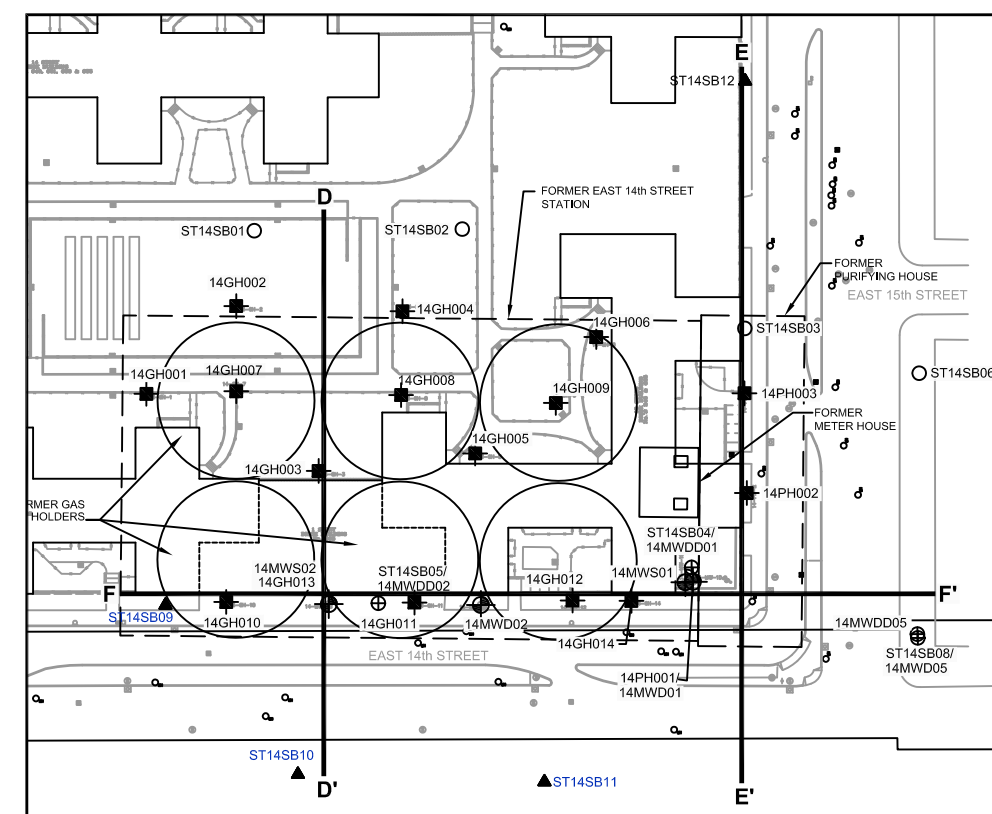
FIGURE NUMBER:  
**4-5B**

SHEET NUMBER:  
2 of 2

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- NOTES:**
- CROSS SECTION LOCATION AND INFORMATION FOR PREVIOUSLY-INSTALLED BORINGS AND WELLS TAKEN FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (2004, REVISED 2005).
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**LEGEND**

CONTACT	0.0615	TOTAL VOCs IN SOIL (VOLATILE ORGANIC COMPOUNDS) mg/kg
SOIL BORING OR MONITORING WELL IDENTIFICATION	24.12	TOTAL SVOCs IN SOIL (SEMI-VOLATILE ORGANIC COMPOUNDS) mg/kg
OBSERVED APPARENT GROUNDWATER TABLE	9.77	TOTAL VOCs IN GROUNDWATER (VOLATILE ORGANIC COMPOUNDS) ug/L
ANALYTICAL SOIL SAMPLE INTERVAL	12.4	TOTAL SVOCs IN GROUNDWATER (SEMI-VOLATILE ORGANIC COMPOUNDS) ug/L
MONITORING WELL SCREENED INTERVAL	ND	NOT DETECTED
	NT	NOT TESTED
	RED	EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL
mg/kg		MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

TAR SATURATED	MGP-LIKE ODORS
TAR BLEBS	PETROLEUM STAINING OR SHEEN
TAR STAINING OR SHEEN	PETROLEUM-LIKE ODORS

DESIGNED BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED BY:	DATE:

NO.	DESCRIPTION	DATE	BY

**AECOM**

**AECOM ENVIRONMENT**  
 RUSTEN CORPORATE PARK  
 100 RED SCHOOLHOUSE ROAD, SUITE B-1  
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 FAX: (845) 425-4989  
 WEB: HTTP://WWW.AECOM.COM

**EAST 14th STREET STATION CROSS SECTION E-E'**

Consolidated Edison of New York, Inc  
 Stuyvesant Town Former MGP Sites

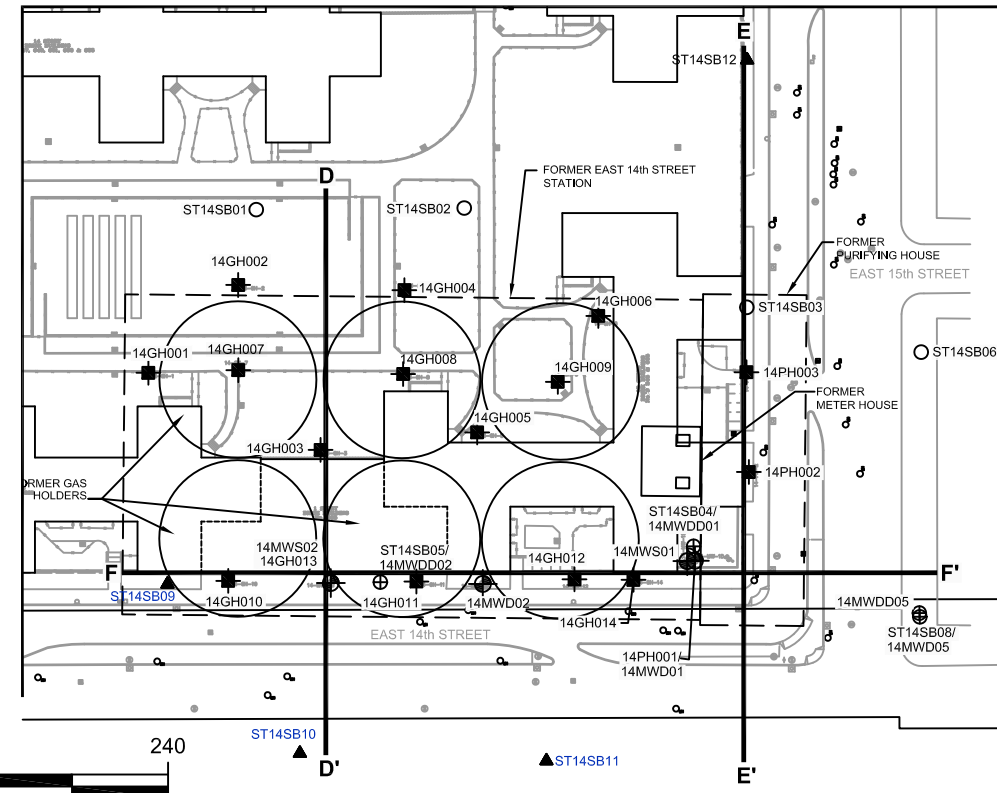
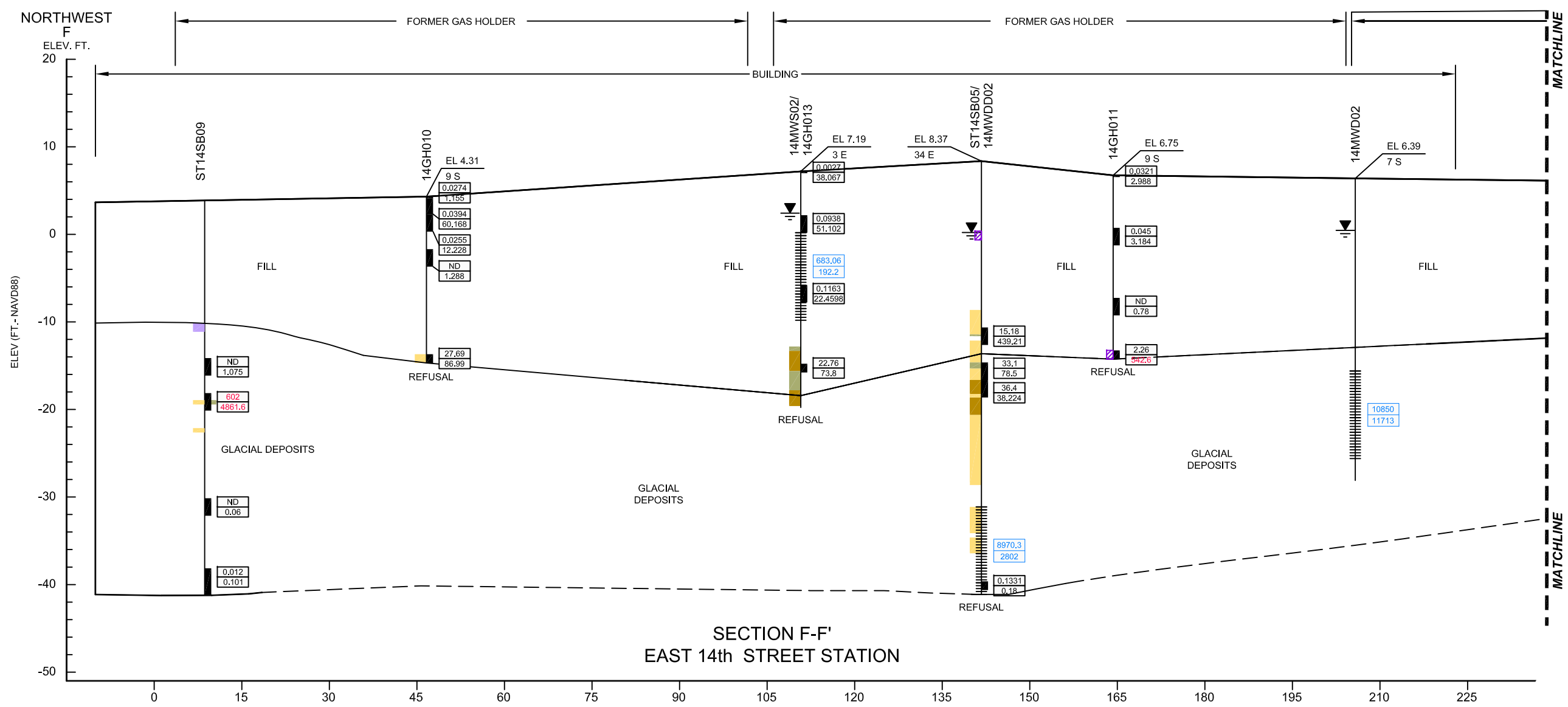
PROJECT NUMBER: 01869-164-270

DATE: 09/21/09

SCALE: AS NOTED

FIGURE NUMBER:  
**4-6**

SHEET NUMBER:  
**1 of 1**



- NOTES:**
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**LEGEND**

CONTACT

SOIL BORING OR MONITORING WELL IDENTIFICATION

OBSERVED APPARENT GROUNDWATER TABLE

ANALYTICAL SOIL SAMPLE INTERVAL

MONITORING WELL SCREENED INTERVAL

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (ppm)

ug/L MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

- TAR SATURATED
- TAR BLEBS
- TAR STAINING OR SHEEN
- MGP-LIKE ODORS
- PETROLEUM STAINING OR SHEEN
- PETROLEUM-LIKE ODORS

**CONCENTRATION LEGEND:**

- 0.0615, 24.12: TOTAL VOCs IN SOIL (VOLATILE ORGANIC COMPOUNDS) mg/kg
- 9.77, 12.4: TOTAL SVOCs IN SOIL (SEMIVOLATILE ORGANIC COMPOUNDS) mg/kg
- 9.77, 12.4: TOTAL VOCs IN GROUNDWATER (VOLATILE ORGANIC COMPOUNDS) ug/L
- 9.77, 12.4: TOTAL SVOCs IN GROUNDWATER (SEMIVOLATILE ORGANIC COMPOUNDS) ug/L
- ND: NOT DETECTED
- NT: NOT TESTED
- RED: EXCEEDANCE OF NYSDEC TAGM #4046 VALUES FOR TOTAL VOCs AND SVOCs IN SOIL

NO.	DESCRIPTION	DATE	BY

**AECOM**

**AECOM ENVIRONMENT**  
RUSTEN CORPORATE PARK  
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CHESTNUT RIDGE, NY 10977  
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WEB: HTTP://WWW.AECOM.COM

**EAST 14th STREET STATION  
CROSS SECTION F-F'**

Consolidated Edison of New York, Inc  
Stuyvesant Town Former MGP Sites

SCALE: AS NOTED

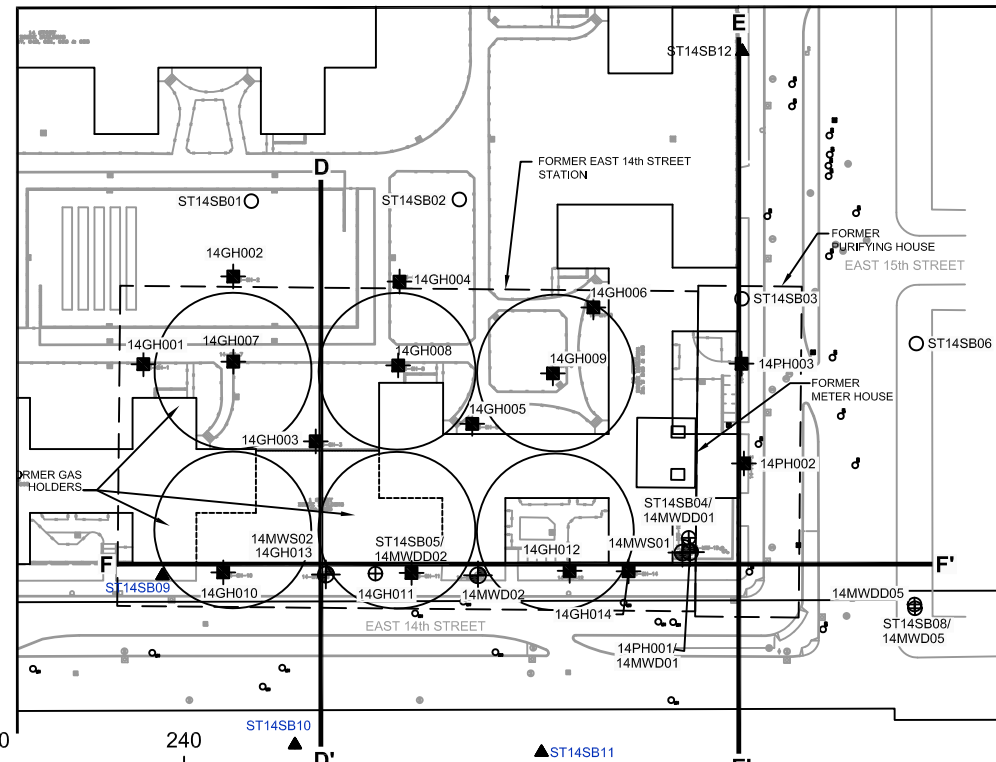
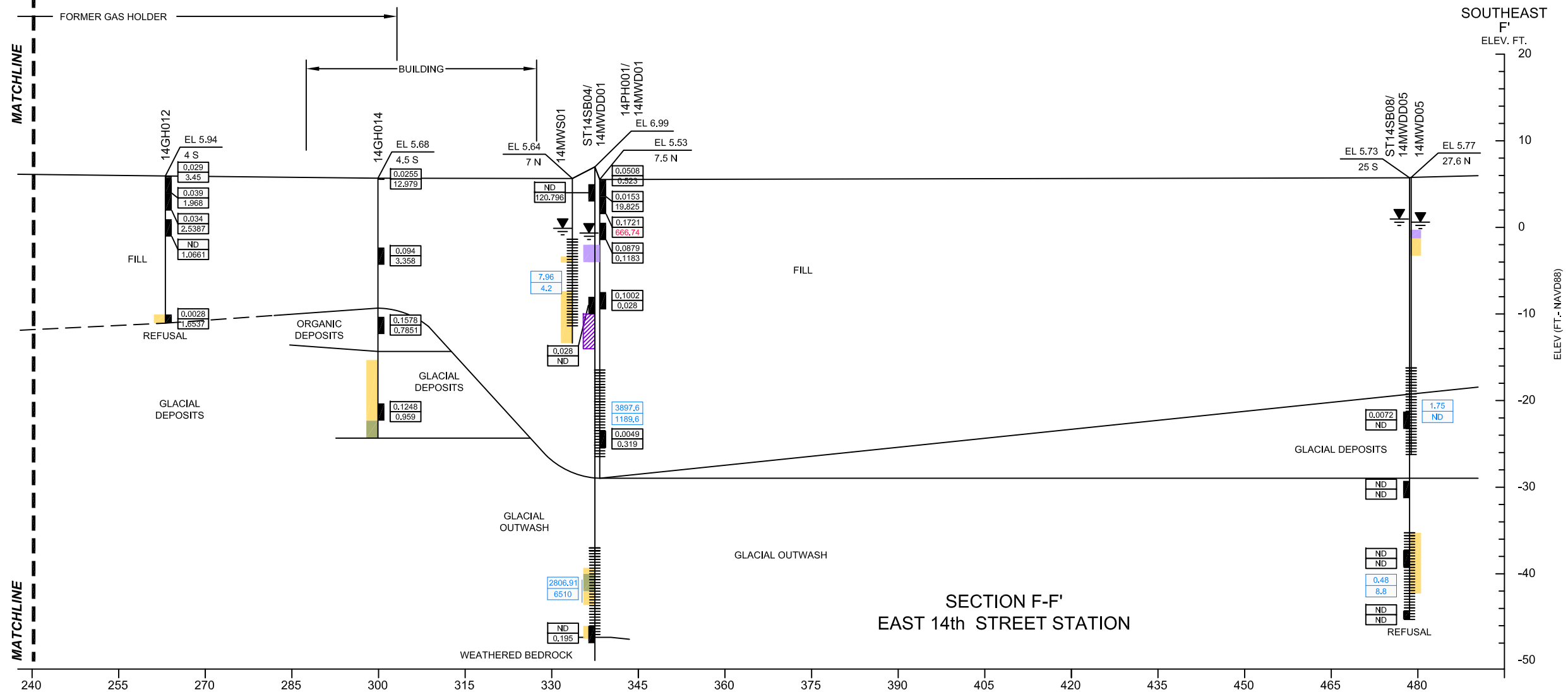
DATE: 09/21/09

PROJECT NUMBER: 01869-164-270

FIGURE NUMBER:  
**4-7A**

SHEET NUMBER:  
1 of 2

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- NOTES:**
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**LEGEND**

CONTACT

SOIL BORING OR MONITORING WELL IDENTIFICATION

OBSERVED APPARENT GROUNDWATER TABLE

ANALYTICAL SOIL SAMPLE INTERVAL

MONITORING WELL SCREENED INTERVAL

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ug/L MICROGRAMS/KILOGRAM OR PARTS PER BILLION (ppb)

**PHYSICAL OBSERVATIONS**

TAR SATURATED	MGP-LIKE ODORS
TAR BLEBS	PETROLEUM STAINING OR SHEEN
TAR STAINING OR SHEEN	PETROLEUM-LIKE ODORS

NO.	DESCRIPTION	DATE	BY:

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**EAST 14th STREET STATION  
CROSS SECTION F-F'**

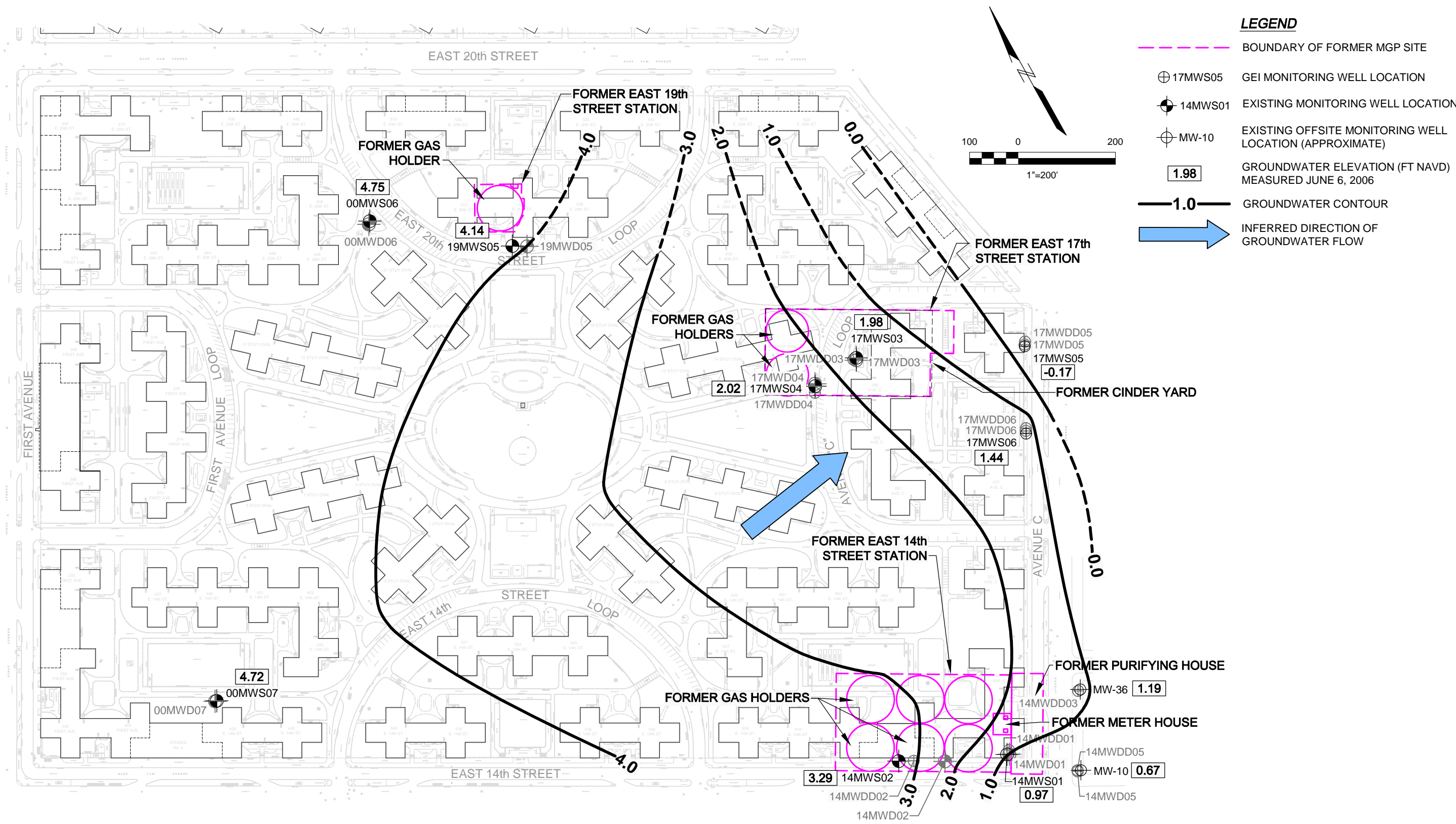
Consolidated Edison of New York, Inc  
Stuyvesant Town Former MGP Sites

DATE: 09/21/09  
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SCALE: AS NOTED

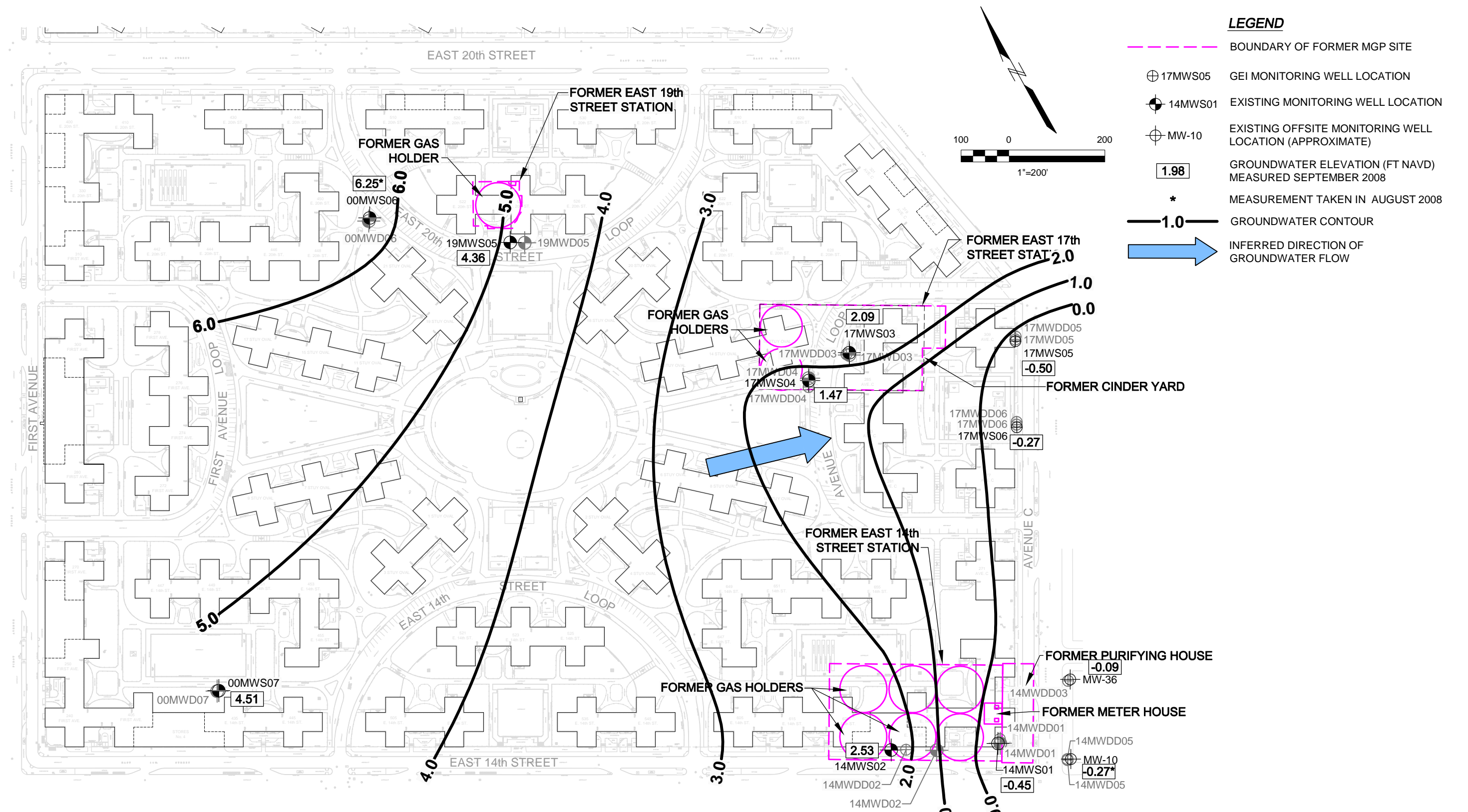
FIGURE NUMBER:  
**4-7B**

SHEET NUMBER:  
2 of 2

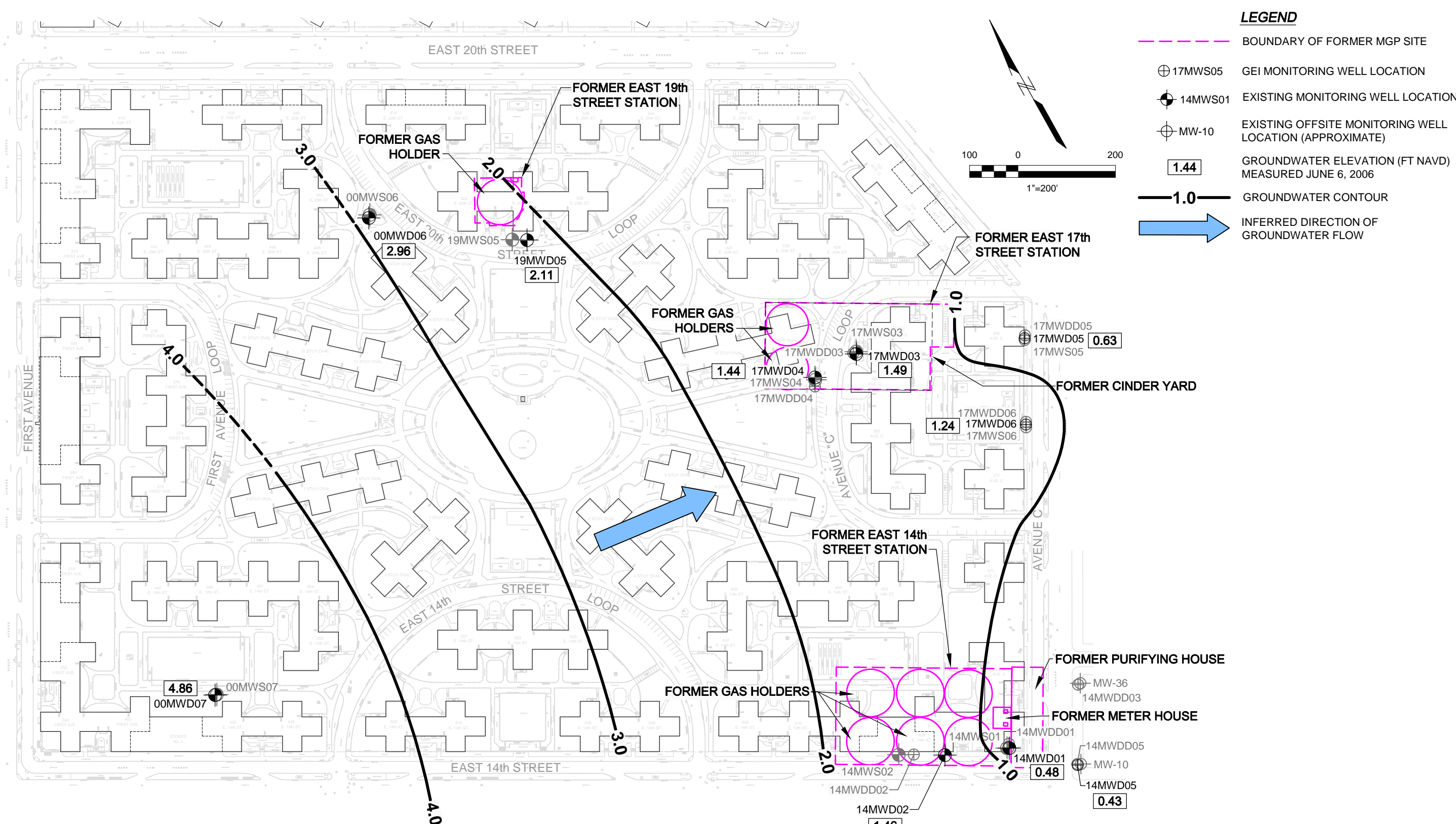
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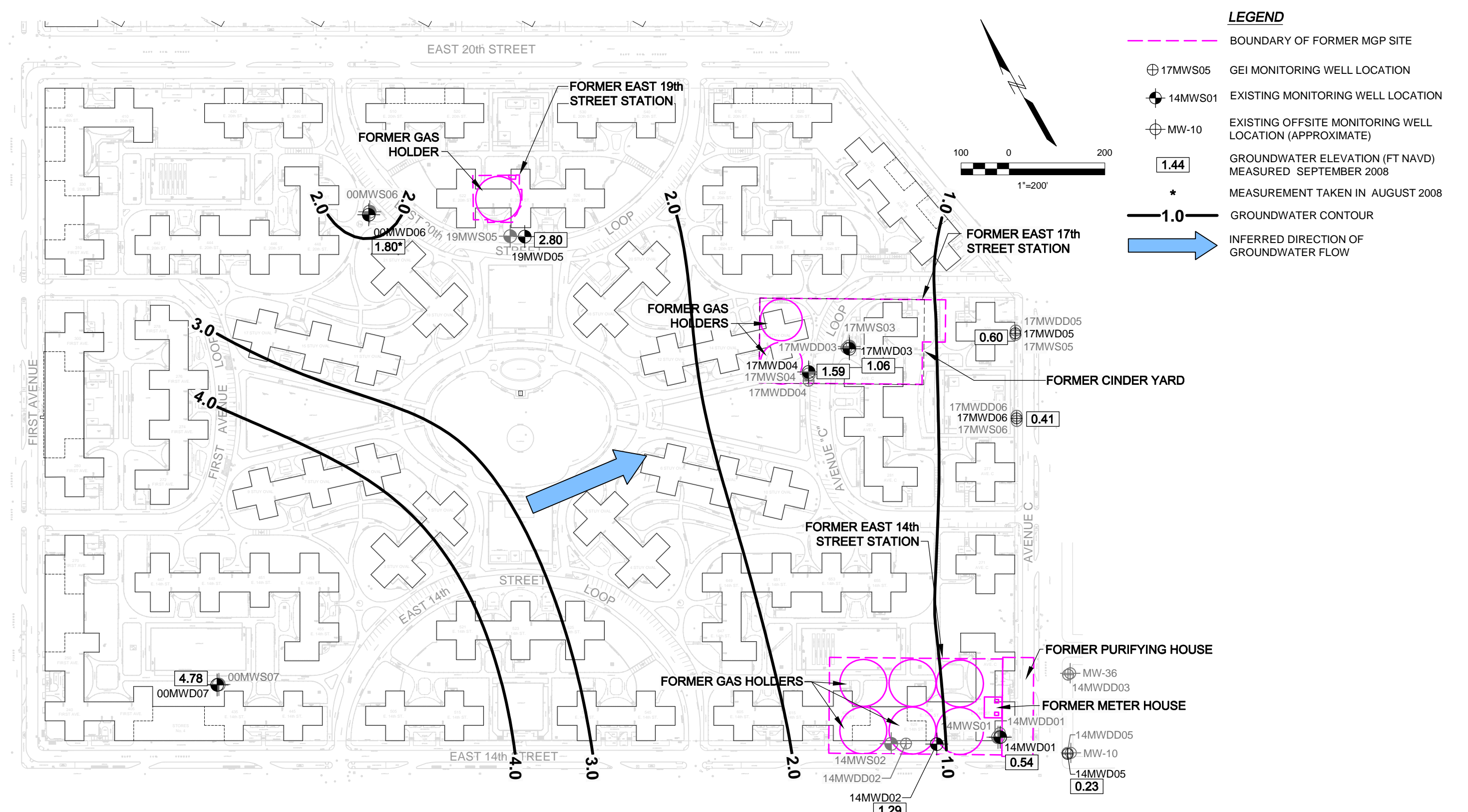
SHALLOW OVERBURDEN GROUNDWATER CONTOUR MAP  
JUNE 2006



SHALLOW OVERBURDEN GROUNDWATER CONTOUR MAP  
SEPTEMBER 2008



INTERMEDIATE OVERBURDEN GROUNDWATER CONTOUR MAP  
JUNE 2006



INTERMEDIATE OVERBURDEN GROUNDWATER CONTOUR MAP  
SEPTEMBER 2008

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AECOM

CONSOLIDATED EDISON OF NEW YORK INC.  
 STUYVESANT TOWN FORMER MGP SITES

01869-164-270

GROUNDWATER CONTOUR MAP

DATE: 01/15/09

DRWN: RCW/WFD

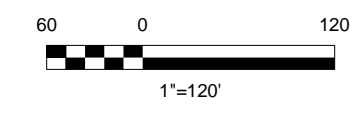
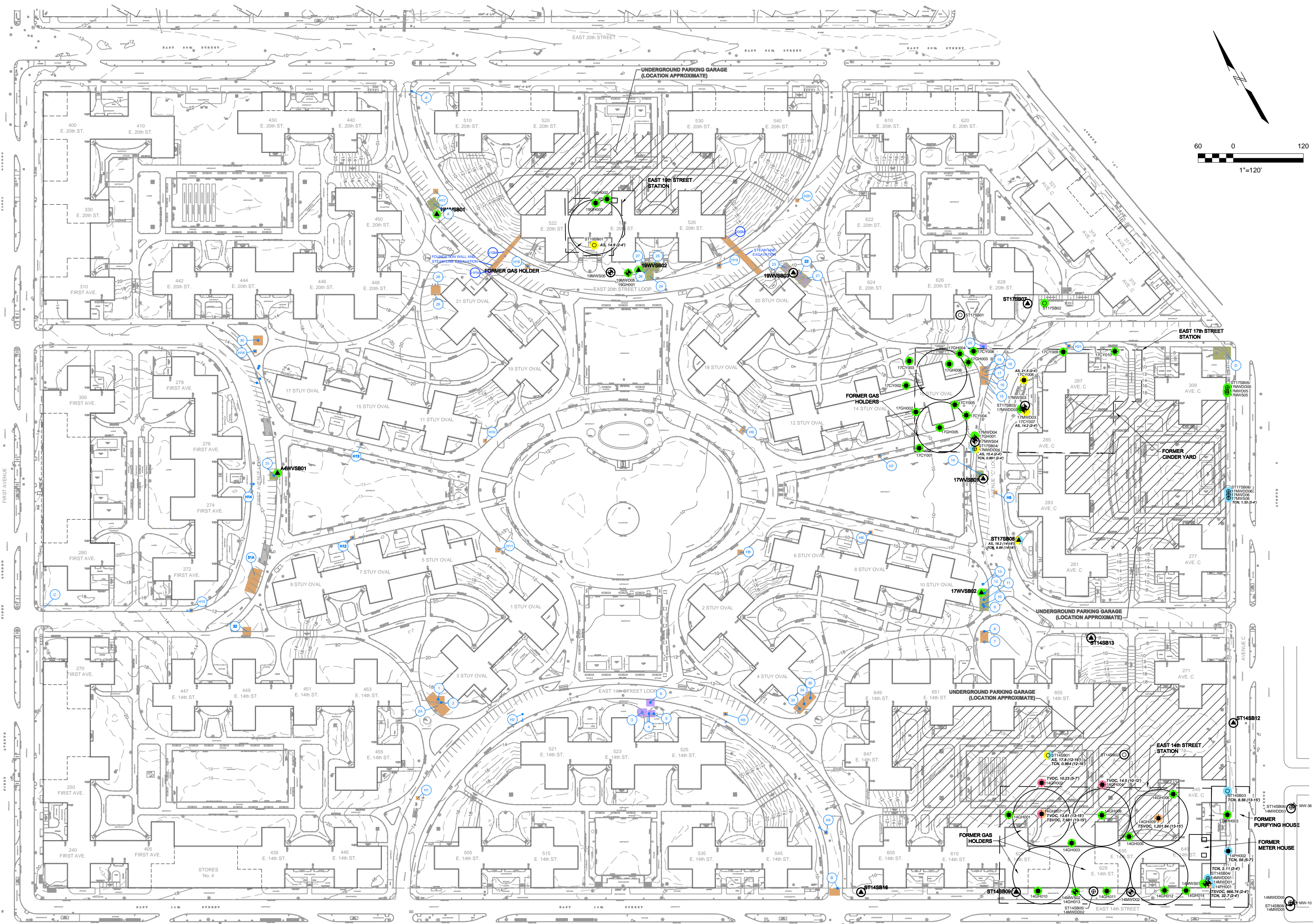
FIGURE 4-8

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File: F:\PROJECTS\Consolidated Edison NY\Syracuse\1889\164-270-S-02.dwg Layout: Shallow Observation C User: WarrenR Plotdate: Feb 11, 2009 - 2:32pm Xref's:



**LEGEND**

○ ST14SB01	IRI SOIL BORING LOCATION
⊕ 14MWDD01	IRI MONITORING WELL LOCATION
⊕ ST14SB06/14MWDD03	IRI COMBINED MONITORING WELL AND SOIL BORING LOCATION
■ 14GH001	SC SOIL BORING LOCATION
◆ 14MWDD2	SC MONITORING WELL LOCATION
◆ 14MWDD1/14PH001	SC COMBINED MONITORING WELL AND SOIL BORING LOCATION
⊕ MW-10	EXISTING OFFSITE MONITORING WELL LOCATION (APPROXIMATE); NO SOIL ANALYTICAL PROVIDED
▲	SRI SOIL BORING LOCATION

	GROUND SURFACE TOPOGRAPHY CONTOURS
	BOUNDARY OF FORMER MGP SITE
<b>TCN, 2.11 (2-4)</b>	TARGET COMPOUND(S), CONCENTRATION IN ppm AND SAMPLE INTERVAL DEPTH IN FEET BELOW GROUND SURFACE (pgs)
	WATER VALVE IDENTIFICATION
	HYDRANT VALVE IDENTIFICATION
	VALVE REPLACEMENT EXCAVATION
	MGP-TYPE STAINING AND/OR ODORS WERE OBSERVED
	PETROLEUM-LIKE STAINING AND/OR ODORS WERE OBSERVED

**ANALYTICAL SUMMARY**

	NO AS, TCN, TVOC OR TSVOC ABOVE THE TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046
	TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TVOC) ABOVE 10 PARTS PER MILLION (ppm)
	TOTAL SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TSVOC) ABOVE 500 ppm
	ARSENIC (AS) CONCENTRATION ABOVE THE SITE BACKGROUND (13.63 ppm) AND RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs), 7.5 ppm
	TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE SITE BACKGROUND (0.705 ppm); NO RSCO ESTABLISHED
	NO SAMPLE TAKEN IN TARGET DEPTH

**NOTES:**

1. CONCENTRATIONS EXCEEDING NYSDEC RSCOs ALSO COMPARED TO ESTABLISHED SITE BACKGROUND CONCENTRATIONS IN SOIL REPORTED IN THE HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. EXISTING SOIL BORINGS AND WELL LOCATIONS FROM HALEY & ALDRICH 2004 SITE CHARACTERIZATION WORK. SOIL SAMPLING INFORMATION AND ANALYTICAL RESULTS FROM HALEY & ALDRICH INVESTIGATION WORK REPORTED IN THEIR 2004 CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
3. IF MORE THAN ONE SAMPLE EXHIBITED NOTED EXCEEDANCES WITHIN THE TARGET DEPTH INTERVAL, THE SAMPLE SHOWING HIGHEST EXCEEDANCE IS LISTED.
4. ALL LISTED CONCENTRATIONS IN PARTS PER MILLION (ppm).

**SOURCES:**

1. FIGURE 2: SITE PLAN AND MGP FACILITIES. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITH STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
2. SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8-9/06. SURVEYED BY NEW YORK STATE-LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

TARGET COMPOUND EXCEEDANCE SUMMARY  
SHALLOW SOILS (0.1'-17' bgs)

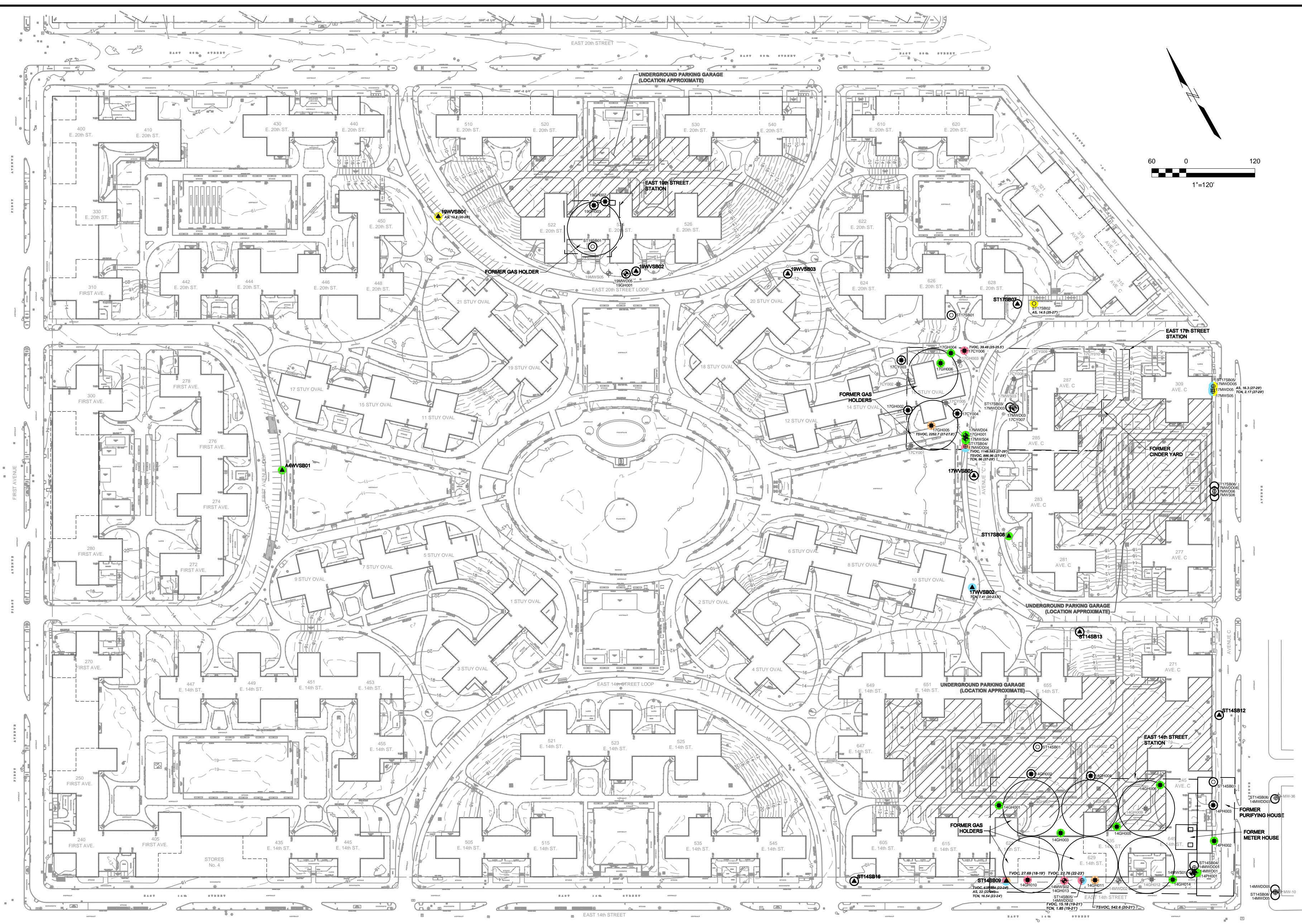
CONSOLIDATED EDISON OF NEW YORK INC.  
STUYVESANT TOWN FORMER MGP SITES

DATE: 01/09/09  
DRAWN: RCW/WFD

AECOM

FIGURE 5-2A

File: F:\PROJECTS\Consolidated Edison NY\StuyTown\01869\164-270-S-02.dwg Layout: Intermediate Observation C User: Warren Plotted: Feb 11, 2009 - 1:37pm Krel's.



**LEGEND**

- ST17SB01 IRI SOIL BORING LOCATION
- ⊕ 17MWDD04 IRI MONITORING WELL LOCATION
- ⊕ ST17SB05/17MWDD05 IRI COMBINED MONITORING WELL AND SOIL BORING LOCATION
- 17CY001 SC SOIL BORING LOCATION
- ⊕ 17MWS03 SC MONITORING WELL LOCATION
- ⊕ 17MWDD03/17SB03 SC COMBINED MONITORING WELL AND SOIL BORING LOCATION
- ⊕ INTERVAL IS BELOW TERMINATION DEPTH OF BORING
- ▲ SRI SOIL BORING LOCATION

- 20' GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- AS, 16.3 (27-29) TARGET COMPOUND(S) CONCENTRATION IN ppm AND SAMPLE INTERVAL DEPTH IN FEET BELOW GROUND SURFACE (fgs)

**ANALYTICAL SUMMARY**

- NO AS, TCN, TVOC OR TSVOC ABOVE THE TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046
- TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TVOC) ABOVE 10 PARTS PER MILLION (ppm)
- TOTAL SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TSVOC) ABOVE 500 ppm
- ARSENIC (AS) CONCENTRATION ABOVE THE SITE BACKGROUND (13.63 ppm) AND RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs, 7.5 ppm)
- TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE SITE BACKGROUND (0.705 ppm); NO RSCO ESTABLISHED
- NO SAMPLE TAKEN IN TARGET DEPTH

**NOTES:**

1. CONCENTRATIONS EXCEEDING NYSDEC RSCOs ALSO COMPARED TO ESTABLISHED SITE BACKGROUND CONCENTRATIONS IN SOIL REPORTED IN THE HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. EXISTING SOIL BORINGS AND WELL LOCATIONS FROM HALEY & ALDRICH 2004 SITE CHARACTERIZATION WORK. SOIL SAMPLING INFORMATION AND ANALYTICAL RESULTS FROM HALEY & ALDRICH INVESTIGATION WORK REPORTED IN THEIR 2004 CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
3. IF MORE THAN ONE SAMPLE EXHIBITED NOTED EXCEEDANCES WITHIN THE TARGET DEPTH INTERVAL, THE SAMPLE SHOWING HIGHEST EXCEEDANCE IS LISTED.
4. ALL LISTED CONCENTRATIONS IN PARTS PER MILLION (ppm).

**SOURCES:**

1. FIGURE 2: SITE PLAN AND MGP FACILITIES. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
2. SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8-9/06. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

**TARGET COMPOUND EXCEEDANCE SUMMARY  
INTERMEDIATE SOILS  
(17' bgs TO THE NATIVE MATERIAL)**

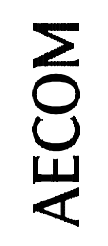
**CONSOLIDATED EDISON OF NEW YORK INC.  
STUYVESANT TOWN FORMER MGP SITES**

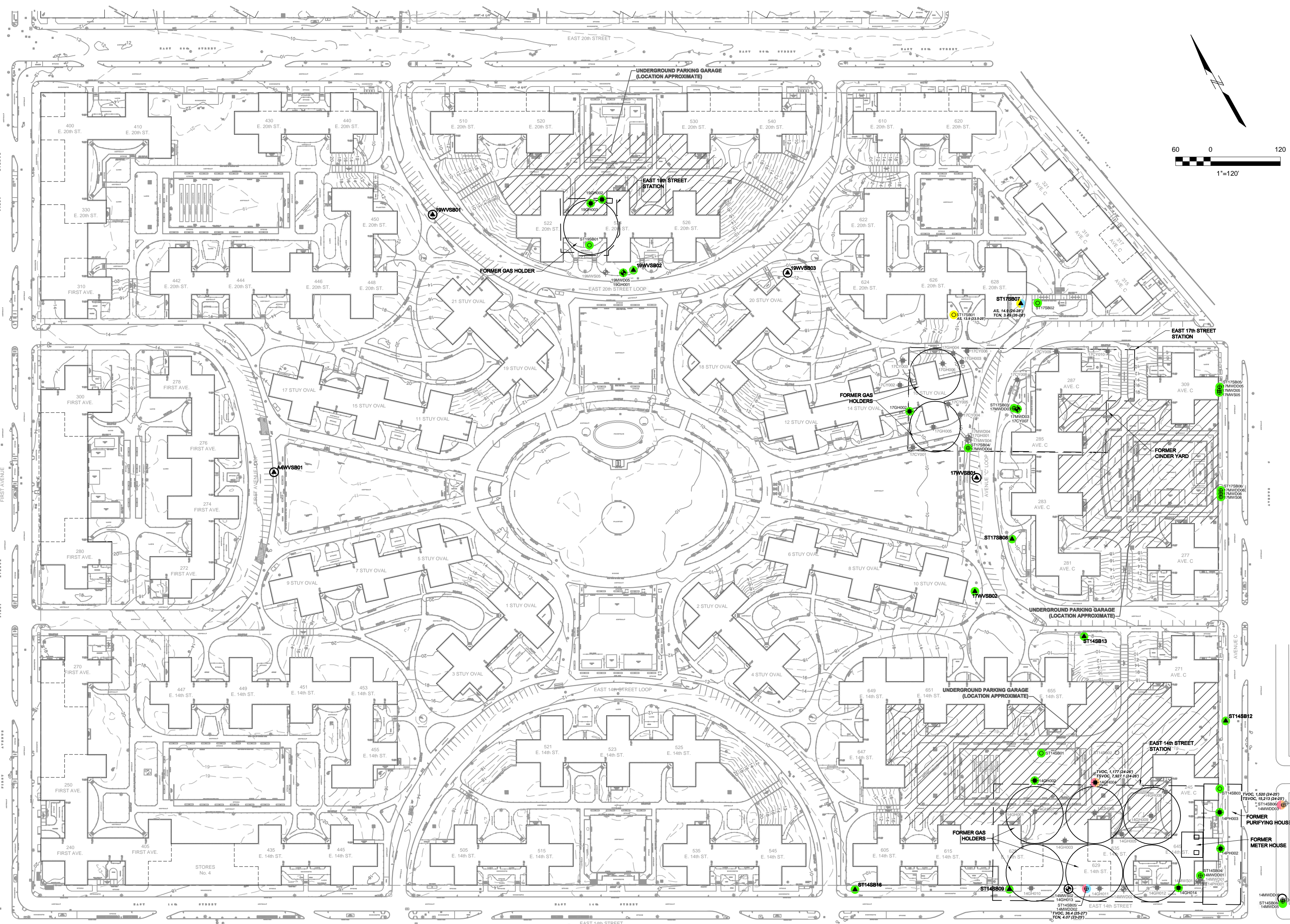
DATE: 01/09/09

DRAWN: ROW/MFD

01869-164-270

FIGURE 5-2B





**LEGEND**

- ST17SB01 IRI SOIL BORING LOCATION
- ⊕ 17MWDD04 IRI MONITORING WELL LOCATION
- ⊕ ST17SB05/17MWDD05 IRI COMBINED MONITORING WELL AND SOIL BORING LOCATION
- 17CY001 SC SOIL BORING LOCATION
- ⊕ 17MWS03 SC MONITORING WELL LOCATION
- ⊕ 17MWDD03/17SB03 SC COMBINED MONITORING WELL AND SOIL BORING LOCATION
- ⊕ INTERVAL IS BELOW TERMINATION DEPTH OF BORING
- ▲ SRI SOIL BORING LOCATION

- 20 GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- AS, 13.9 (23.5-25) TARGET COMPOUND(S) CONCENTRATION IN ppm AND SAMPLE INTERVAL DEPTH IN FEET BELOW GROUND SURFACE (ft)

**ANALYTICAL SUMMARY**

- NO AS, TCN, TVOC OR TSVOC ABOVE THE TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046
- TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TVOC) ABOVE 10 PARTS PER MILLION (ppm)
- TOTAL SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TSVOC) ABOVE 500 ppm
- ARSENIC (AS) CONCENTRATION ABOVE THE SITE BACKGROUND (13.63 ppm) AND RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs, 7.5 ppm)
- TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE SITE BACKGROUND (0.705 ppm); NO RSCO ESTABLISHED
- NO SAMPLE TAKEN IN TARGET DEPTH

**NOTES:**

1. CONCENTRATIONS EXCEEDING NYSDEC RSCOs ALSO COMPARED TO ESTABLISHED SITE BACKGROUND CONCENTRATIONS IN SOIL REPORTED IN THE HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. EXISTING SOIL BORINGS AND WELL LOCATIONS FROM HALEY & ALDRICH 2004 SITE CHARACTERIZATION WORK. SOIL SAMPLING INFORMATION AND ANALYTICAL RESULTS FROM HALEY & ALDRICH INVESTIGATION WORK REPORTED IN THEIR 2004 CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
3. IF MORE THAN ONE SAMPLE EXHIBITED NOTED EXCEEDANCES WITHIN THE TARGET DEPTH INTERVAL, THE SAMPLE SHOWING HIGHEST EXCEEDANCE IS LISTED.
4. ALL LISTED CONCENTRATIONS IN PARTS PER MILLION (ppm).

**SOURCES:**

1. FIGURE 2: SITE PLAN AND MGP FACILITIES. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
2. SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8-9/06. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

Sample Borehole Location	145801	145802	145803	145804	Duplicate
Depth Interval in feet	12-16	24-28	28-32	36-39	36-39
Date Collected	3/26/06	3/26/06	3/26/06	3/26/06	3/26/06
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.0069	0.002 U	0.25	0.085	0.21 J
<b>Total VOCs (mg/kg)</b>	0.0478	ND	0.279	0.2254	0.5471
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	1.3	0.42 U	0.42 U	0.4 U	0.43 U
Phenol	8.8	0.83	0.83	0.83	0.83 U
<b>Total PAHs (mg/kg)</b>	13	0.073	0.146	0.23	0.45
<b>Metals (mg/kg)</b>					
Barium	178.2	13.1	1.28	2.12	2.34 J
Bismuth	378	74.9	14.2	88	81.7
Chromium	33	4.2	1.5	1.9	2.1
Copper	21.1	3.73	5.4	4.73	5.23 J
Lead	1.80	0.47	0.02	0.02	0.02
Manganese	14100	7500	5200	5800	5800
Nickel	22900	7120	11400	19000	22000 J
Phosphorus	276 J	12.3	10.2	14.4	15.1
Potassium	25400	12600	11300	12000	12900
Selenium	5300	7320	5540	7820	8190
Silver	346	462	346	308	404 J
Sodium	38.2 J	23.4	19.3	17.3	16.2 J
Sulfur	33800	33000	26700	22000	21900 J
Zinc	14800	273 J	336 J	500 J	471 J
Zirconium	286	37.5	26.5	39.9	39.6
<b>Cyanide (mg/kg)</b>	0.064	0.052 U	0.63 U	0.613 U	0.655 U
Cyanide, Total					

Sample Borehole Location	145805	145806	145807	145808	Duplicate
Depth Interval in feet	0-2	2-4	5-7	10-14	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.0013	0.16	7.8	5.3	0.028
<b>Total VOCs (mg/kg)</b>	0.11	0.21 J	0.26 U	0.26 U	0.046 J
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.0013	0.16	7.8	5.3	0.028
Benzonitrile	6.6	1.5	0.42	0.57	0.015 J
Benzophenone	6.6	1.5	0.42	0.57	0.015 J
Benzofluoranthene	4.9	1.4	0.37	0.49	0.004 U
Fluorene	5.9	1.4	0.37	0.49	0.004 U
Chrysene	7.4	1.4	0.37	0.49	0.004 U
Indeno(1,2,3-cd)pyrene	1.4	0.22	0.04	0.06	0.002 U
Phenanthrene	3.8	0.77	0.18	0.24	0.002 U
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.16 U	0.04 U	0.04 U	0.04 U	0.18 J
Phenol	0.27 U	0.009 U	0.063 U	0.007 U	0.27 J
<b>Total PAHs (mg/kg)</b>	81.63	31.82	10.75	10.74	8.503
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	NA
Cyanide, Total					

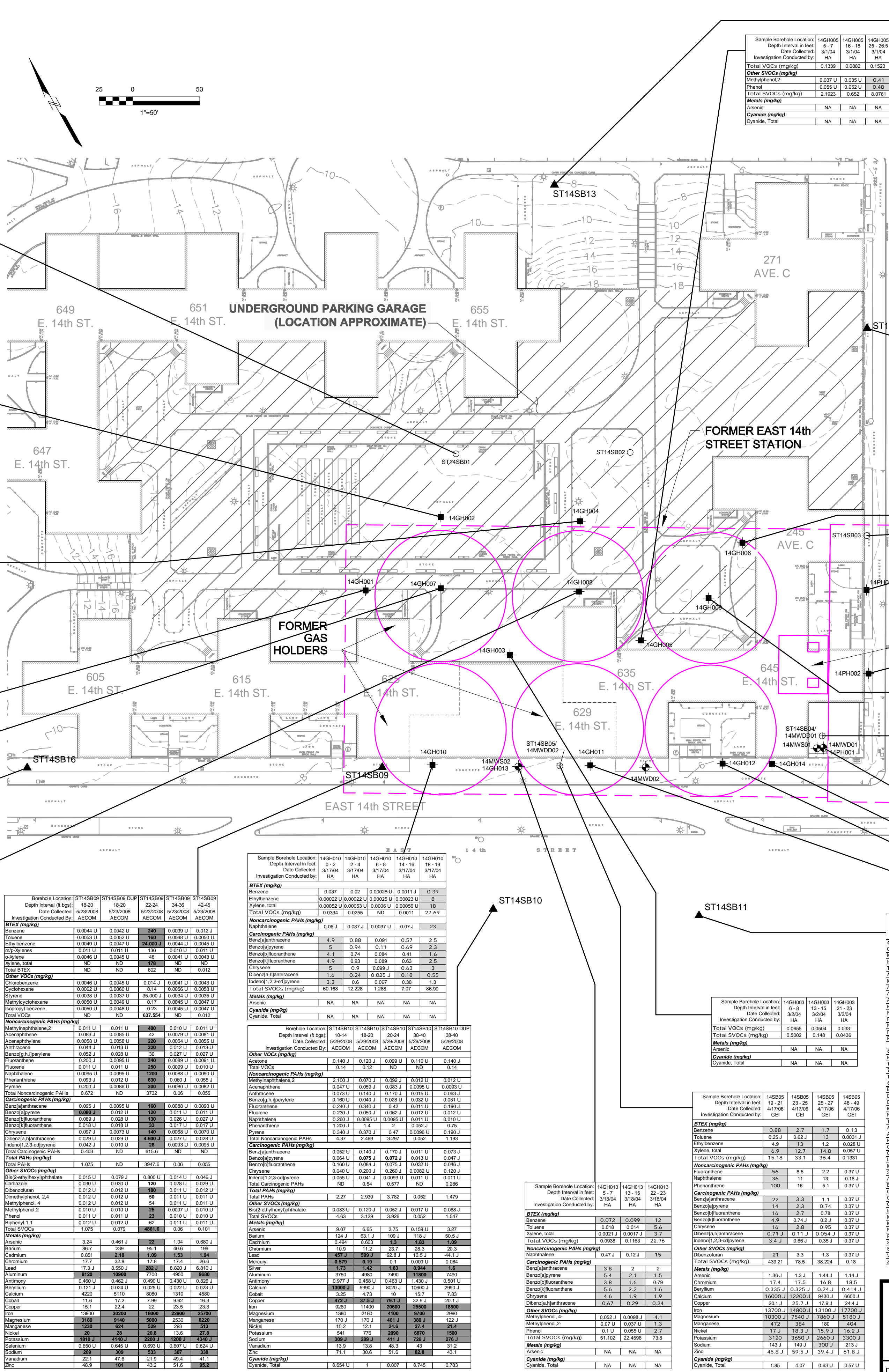
Sample Borehole Location	145809	145810	145811	145812	Duplicate
Depth Interval in feet	10-12	14-16	24-26	28-30	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	2.2	12	250	4.2	
<b>Total VOCs (mg/kg)</b>	0.047	0.2	340	2.5	
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.047	0.2	340	2.5	
Benzonitrile	0.047	0.2	340	2.5	
Benzophenone	0.047	0.2	340	2.5	
Benzofluoranthene	0.047	0.2	340	2.5	
Fluorene	0.047	0.2	340	2.5	
Chrysene	0.047	0.2	340	2.5	
Indeno(1,2,3-cd)pyrene	0.047	0.2	340	2.5	
Phenanthrene	0.047	0.2	340	2.5	
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U	310	0.5	
Methamphetamine-2	0.02 U	0.02 U	310	0.5	
Phenol	0.02 U	0.02 U	310	0.5	
<b>Total PAHs (mg/kg)</b>	0.052	0.01	7927.1	22.96	
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					

Sample Borehole Location	145813	145814	145815	145816	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.078	0.14			
<b>Total VOCs (mg/kg)</b>	0.078	0.14			
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.078	0.14			
Benzonitrile	0.078	0.14			
Benzophenone	0.078	0.14			
Benzofluoranthene	0.078	0.14			
Fluorene	0.078	0.14			
Chrysene	0.078	0.14			
Indeno(1,2,3-cd)pyrene	0.078	0.14			
Phenanthrene	0.078	0.14			
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U			
Methamphetamine-2	0.02 U	0.02 U			
Phenol	0.02 U	0.02 U			
<b>Total PAHs (mg/kg)</b>	0.052	0.01			
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					

Sample Borehole Location	145817	145818	145819	145820	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.009	0.2			
<b>Total VOCs (mg/kg)</b>	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.009	0.2			
Benzonitrile	0.009	0.2			
Benzophenone	0.009	0.2			
Benzofluoranthene	0.009	0.2			
Fluorene	0.009	0.2			
Chrysene	0.009	0.2			
Indeno(1,2,3-cd)pyrene	0.009	0.2			
Phenanthrene	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U			
Methamphetamine-2	0.02 U	0.02 U			
Phenol	0.02 U	0.02 U			
<b>Total PAHs (mg/kg)</b>	0.052	0.01			
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					

Sample Borehole Location	145821	145822	145823	145824	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.009	0.2			
<b>Total VOCs (mg/kg)</b>	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.009	0.2			
Benzonitrile	0.009	0.2			
Benzophenone	0.009	0.2			
Benzofluoranthene	0.009	0.2			
Fluorene	0.009	0.2			
Chrysene	0.009	0.2			
Indeno(1,2,3-cd)pyrene	0.009	0.2			
Phenanthrene	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U			
Methamphetamine-2	0.02 U	0.02 U			
Phenol	0.02 U	0.02 U			
<b>Total PAHs (mg/kg)</b>	0.052	0.01			
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					

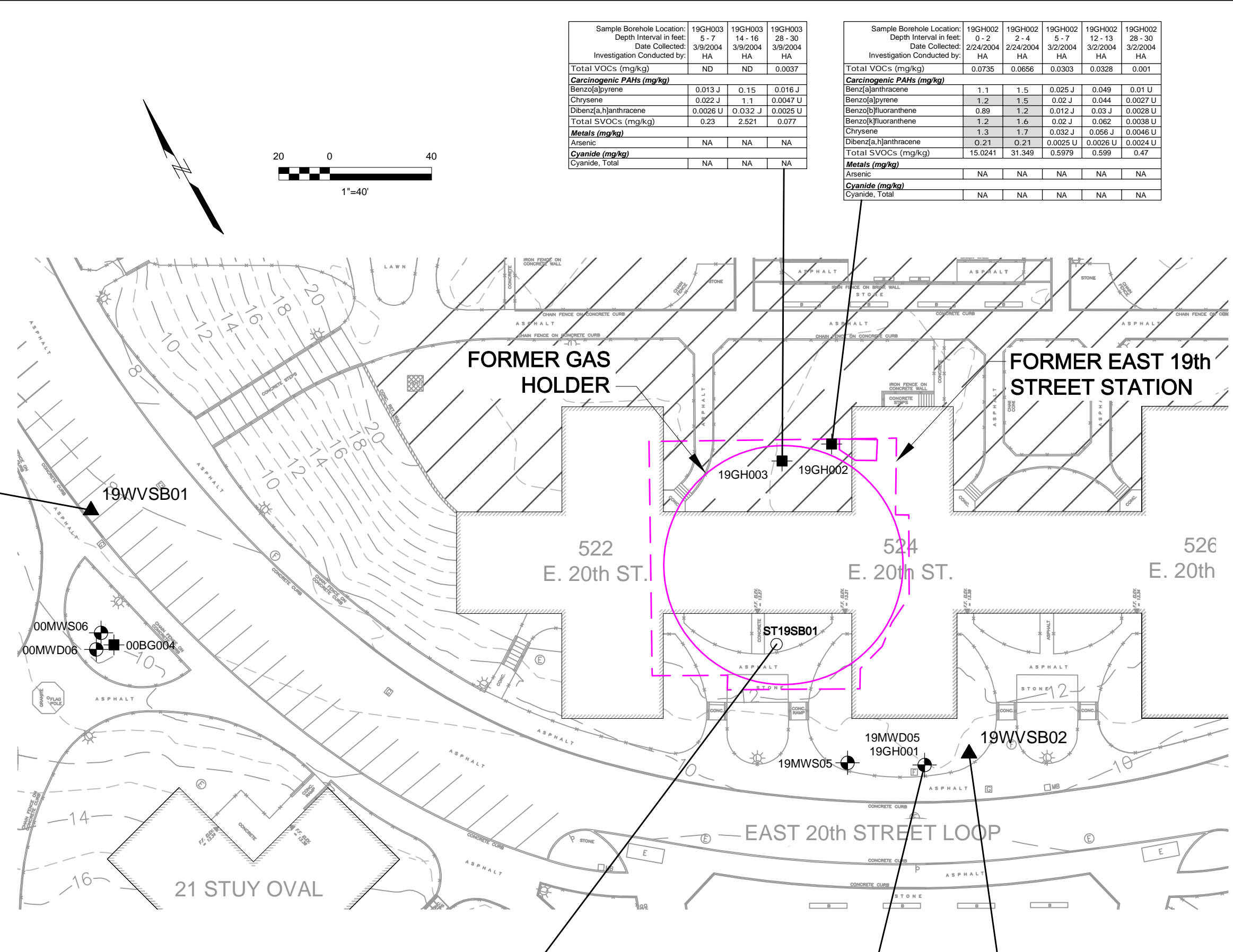
Sample Borehole Location	145825	145826	145827	145828	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.009	0.2			
<b>Total VOCs (mg/kg)</b>	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.009	0.2			
Benzonitrile	0.009	0.2			
Benzophenone	0.009	0.2			
Benzofluoranthene	0.009	0.2			
Fluorene	0.009	0.2			
Chrysene	0.009	0.2			
Indeno(1,2,3-cd)pyrene	0.009	0.2			
Phenanthrene	0.009	0.2			
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U			
Methamphetamine-2	0.02 U	0.02 U			
Phenol	0.02 U	0.02 U			
<b>Total PAHs (mg/kg)</b>	0.052	0.01			
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					



Sample Borehole Location	145829	145830	145831	145832	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/27/04
Investigation Conducted by	HA	HA	HA	HA	HA
<b>BTEX (mg/kg)</b>	0.014	0.017	0.0045	0.002 J	
<b>Total VOCs (mg/kg)</b>	0.008 J	0.012	0.0050	0.003 U	
<b>Other SVOCs (mg/kg)</b>					
Benzene	0.008 J	0.012	0.0050	0.003 U	
Benzonitrile	0.012	0.017	0.0045	0.002 J	
Benzophenone	0.014	0.017	0.0045	0.002 J	
Benzofluoranthene	0.013	0.018	0.0048	0.002 U	
Fluorene	0.008	0.009	0.004	0.002	
Chrysene	0.008	0.009	0.004	0.002	
Indeno(1,2,3-cd)pyrene	0.008	0.009	0.004	0.002	
Phenanthrene	0.008	0.009	0.004	0.002	
<b>Other SVOCs (mg/kg)</b>					
Methamphetamine	0.02 U	0.02 U	0.009 U	0.005 U	
Methamphetamine-2	0.02 U	0.02 U	0.009 U	0.005 U	
Phenol	0.02 U	0.02 U	0.009 U	0.005 U	
<b>Total PAHs (mg/kg)</b>	0.068	0.116	0.02	0.022	
<b>Metals (mg/kg)</b>					
Asenic	NA	NA	NA	NA	
<b>Cyanide (mg/kg)</b>	NA	NA	NA	NA	
Cyanide, Total					

Sample Borehole Location	145833	145834	145835	145836	Duplicate
Depth Interval in feet	5-7	10-12	14-16	24-26	28-30
Date Collected	3/27/04	3/27/04	3/27/04	3/27/04	3/2





Sample Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19GH003 5-7 3/9/2004 HA	19GH003 14-16 3/9/2004 HA	19GH003 28-30 3/9/2004 HA
Total VOCs (mg/kg)	ND	ND	0.0037
<b>Carcinogenic PAHs (mg/kg)</b>			
Benzo(a)pyrene	0.013 J	0.15	0.016 J
Chrysene	0.022 J	1.1	0.0047 U
Dibenz(a,h)anthracene	0.0026 U	0.032 J	0.0025 U
Total SVOCs (mg/kg)	0.23	2.521	0.077
<b>Metals (mg/kg)</b>			
Arsenic	NA	NA	NA
<b>Cyanide (mg/kg)</b>			
Cyanide, Total	NA	NA	NA

Sample Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19GH002 0-2 2/24/2004 HA	19GH002 2-4 2/24/2004 HA	19GH002 5-7 3/2/2004 HA	19GH002 12-13 3/2/2004 HA	19GH002 28-30 3/2/2004 HA
Total VOCs (mg/kg)	0.0735	0.0656	0.0303	0.0328	0.001
<b>Carcinogenic PAHs (mg/kg)</b>					
Benzo(a)anthracene	1.1	1.5	0.025 J	0.049	0.01 U
Benzo(a)pyrene	1.2	1.5	0.02 J	0.044	0.0027 U
Benzo(b)fluoranthene	0.89	1.2	0.012 J	0.03 J	0.0028 U
Benzo(k)fluoranthene	1.2	1.6	0.02 J	0.062	0.0038 U
Chrysene	1.3	1.7	0.032 J	0.056 J	0.0046 U
Dibenz(a,h)anthracene	0.21	0.21	0.0025 U	0.0026 U	0.0024 U
Total SVOCs (mg/kg)	15.0241	31.349	0.5979	0.599	0.47
<b>Metals (mg/kg)</b>					
Arsenic	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>					
Cyanide, Total	NA	NA	NA	NA	NA

Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19WVSB01 4-8 5/13/2008 AECOM	19WVSB01 12-16 5/13/2008 AECOM	19WVSB01 20-26 5/13/2008 AECOM
Total VOCs (mg/kg)	0.0065 U	0.0072 U	0.046
<b>Other VOCs (mg/kg)</b>			
Carbon disulfide	ND	ND	0.046
<b>Noncarcinogenic PAHs (mg/kg)</b>			
Acenaphthene	0.0087 U	0.061 J	0.012 U
Anthracene	0.045 J	0.015 U	0.018 U
Benzo(b)fluoranthene	0.060 J	0.032 U	0.039 U
Benzo(k)fluoranthene	0.300 J	0.011 U	0.013 U
Phenanthrene	0.310 J	0.170 J	0.017 U
Pyrene	0.230 J	0.059 J	0.012 U
Total Carcinogenic PAHs	0.945	0.29	ND
<b>Carcinogenic PAHs (mg/kg)</b>			
Benzo(a)anthracene	0.110 J	0.011 U	0.013 U
Benzo(a)pyrene	0.100 J	0.013 U	0.016 U
Benzo(b)fluoranthene	0.130 J	0.032 U	0.039 U
Benzo(k)fluoranthene	0.051 J	0.020 U	0.025 U
Chrysene	0.100 J	0.082 U	0.010 U
Indeno(1,2,3-cd)pyrene	0.048 J	0.011 U	0.014 U
Total Carcinogenic PAHs	0.539	ND	ND
<b>Total PAHs (mg/kg)</b>			
Total PAHs	1.484	0.29	ND
<b>Other SVOCs (mg/kg)</b>			
Methylphenol, 4-	0.012 U	0.083 J	0.016 U
Total SVOCs	1.484	0.373	ND
<b>Metals (mg/kg)</b>			
Barium	144 J	131 J	36.5 J
Chromium	7.31	8.45	27.5
Lead	230	237	17
Mercury	0.693 J	0.255 J	0.026 J
Aluminum	4700	4000	13700
Antimony	0.869	0.750 J	1.14
Beryllium	0.243 J	0.259 J	0.611
Calcium	33600	14900	2630
Cobalt	2.47	3.99	10.6
Copper	19.3 J	75.3 J	17.4 J
Iron	7030	9840	35300
Magnesium	3150	1730	6280
Manganese	170	243	460
Nickel	5.49	8.6	24.1
Potassium	594	1020	2990
Sodium	230	788	1640
Vanadium	9.25	15	34.8
Zinc	381	42.7	76.1
Arsenic	2.85	5.94	13.8
Cadmium	0.664	0.088 U	0.148 J
Selenium	0.669 U	0.961	0.893 U
Silver	39.1	0.185 U	0.229 U

Sample Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19SB01 2-4 3/14/2006 GEI	19SB01 14-16 3/17/2006 GEI	19SB01 38-40 3/17/2006 GEI
Total VOCs (mg/kg)	ND	ND	ND
<b>Carcinogenic PAHs (mg/kg)</b>			
Benzo(a)pyrene	0.074 J	0.38 U	0.37 U
Total SVOCs (mg/kg)	0.82	0.16	0.461
<b>Metals (mg/kg)</b>			
Arsenic	14.9	2.3 J	1.1 U
Chromium	13.9 J	16.1 J	9.2 J
Mercury	0.551	0.047 J	0.018 J
Aluminum	9500 J	7820 J	2040 J
Beryllium	0.45 J	0.42 J	0.2 J
Copper	30.9 J	30.4 J	6.7 J
Iron	14100 J	13800 J	4310 J
Nickel	10.5 J	13.2	10.5 J
Sodium	568 UJ	591 J	372 J
Zinc	21.4 J	36.5 J	14.1 J
<b>Cyanide (mg/kg)</b>			
Cyanide, Total	0.568 U	0.572 U	0.569 U

Sample Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19GH001 3-3/2004 HA	19GH001 13-15 3/3/2004 HA	Duplicate 19GH001 13-15 3/3/2004 HA	19GH001 29-31 3/4/2004 HA	Duplicate 19GH001 29-31 3/4/2004 HA
Total VOCs (mg/kg)	0.0004	ND	NA	ND	0.0056
<b>Carcinogenic PAHs (mg/kg)</b>					
Benzo(a)anthracene	4.4	0.34	0.04 J	0.011 U	NA
Benzo(a)pyrene	0.027 UJ	0.18	0.021 J	0.0029 U	NA
Chrysene	5.8	0.48	0.062 J	0.0048 U	NA
Dibenz(a,h)anthracene	0.34 J	0.041	0.0026 U	0.0026 U	NA
<b>Other SVOCs (mg/kg)</b>					
Phenol	0.5 U	0.067 J	0.054 U	0.052 U	NA
Total SVOCs (mg/kg)	32.85	9.828	1.7325	ND	NA
<b>Metals (mg/kg)</b>					
Arsenic	NA	NA	NA	NA	NA
<b>Cyanide (mg/kg)</b>					
Cyanide, Total	NA	NA	NA	NA	NA

Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	19WVSB02 8-10 5/14/2008 AECOM	19WVSB02 10-12 5/14/2008 AECOM	19WVSB02 23-24 5/14/2008 AECOM
Total VOCs (mg/kg)	0.083 J	0.180 J	0.011 U
<b>Noncarcinogenic PAHs (mg/kg)</b>			
Acenaphthene	0.210 J	0.41	0.017 U
Anthracene	0.370 J	0.110 J	0.037 U
Benzo(b)fluoranthene	0.92	0.91	0.012 U
Fluoranthene	0.091 J	0.075 J	0.014 U
Phenanthrene	0.62	0.100 J	0.016 U
Pyrene	1.1	1.6	0.011 U
Total Noncarcinogenic PAHs	3.374	3.385	ND
<b>Carcinogenic PAHs (mg/kg)</b>			
Benzo(a)anthracene	0.98	1.7	0.012 U
Benzo(a)pyrene	0.61	0.290 J	0.015 U
Benzo(b)fluoranthene	0.69	0.45	0.037 U
Benzo(k)fluoranthene	0.240 J	0.087 J	0.023 U
Chrysene	1.2	2.3	0.0024 U
Dibenz(a,h)anthracene	0.140 J	0.120 J	0.037 U
Indeno(1,2,3-cd)pyrene	0.41	0.150 J	0.013 U
Total Carcinogenic PAHs	4.27	4.897	ND
<b>Total PAHs (mg/kg)</b>			
Total PAHs	7.644	8.282	ND
<b>Other SVOCs (mg/kg)</b>			
Dibenzofuran	0.042 J	0.110 J	0.016 U
Total SVOCs	7.686	8.392	ND
<b>Metals (mg/kg)</b>			
Barium	54.3 J	39.4 J	31.6 J
Chromium	9.23	7.45	23.6
Lead	124	20.6	12.7
Mercury	0.827 J	0.056 J	0.024 J
Aluminum	4010	5330	11000
Antimony	1.58	0.517 J	0.863 J
Beryllium	0.222 J	0.253	0.588
Calcium	120000	20200	2390
Cobalt	3.24	4.6	9.81
Copper	28.9 J	13.3 J	14.6 J
Iron	9710	10600	27600
Magnesium	37800	8530	6280
Manganese	199	127	492
Nickel	9.44	9.63	21.9
Potassium	581	471	2450
Sodium	246	176	1270
Vanadium	11.6	10.9	29.7
Zinc	56.6	24.1	67
Arsenic	5.87	2.48	8.7
Cadmium	0.215 J	0.081 U	0.103 U

**LEGEND**

- LOW PRESSURE FIRE HYDRANT
- LIGHT POLE
- TRAFFIC BOX
- TRAFFIC POLE
- TRAFFIC SIGN
- ST19SB01 IRI SOIL BORING LOCATION
- 19GH002 SC SOIL BORING LOCATION
- 19MWS05 SC MONITORING WELL LOCATION
- 19MWD05 19GH001 SC COMBINED MONITORING WELL AND SOIL BORING LOCATION
- ST14SB12 SRI SOIL BORING LOCATION
- GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION RECOMMENDED SOIL CLEANUP OBJECTIVES FROM TAGM 4046; VALUES AGAINST WHICH THE DETECTED CONCENTRATIONS ARE COMPARED.

- NA NOT ANALYZED
- ND TOTAL CONCENTRATION IS LISTED AS ND BECAUSE NO COMPOUNDS WERE DETECTED IN THE GROUP.
- NE NOT ESTABLISHED
- J ESTIMATED VALUE
- U INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN
- UJ INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (PPM)  
PAHs POLYCYCLIC AROMATIC HYDROCARBONS (A SUBSET OF SVOCs)  
VOCs VOLATILE ORGANIC COMPOUNDS  
SVOCs SEMIVOLATILE ORGANIC COMPOUNDS

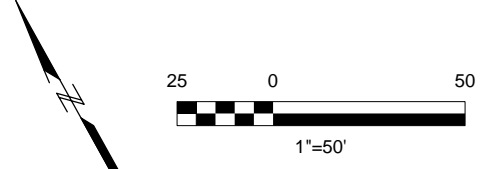
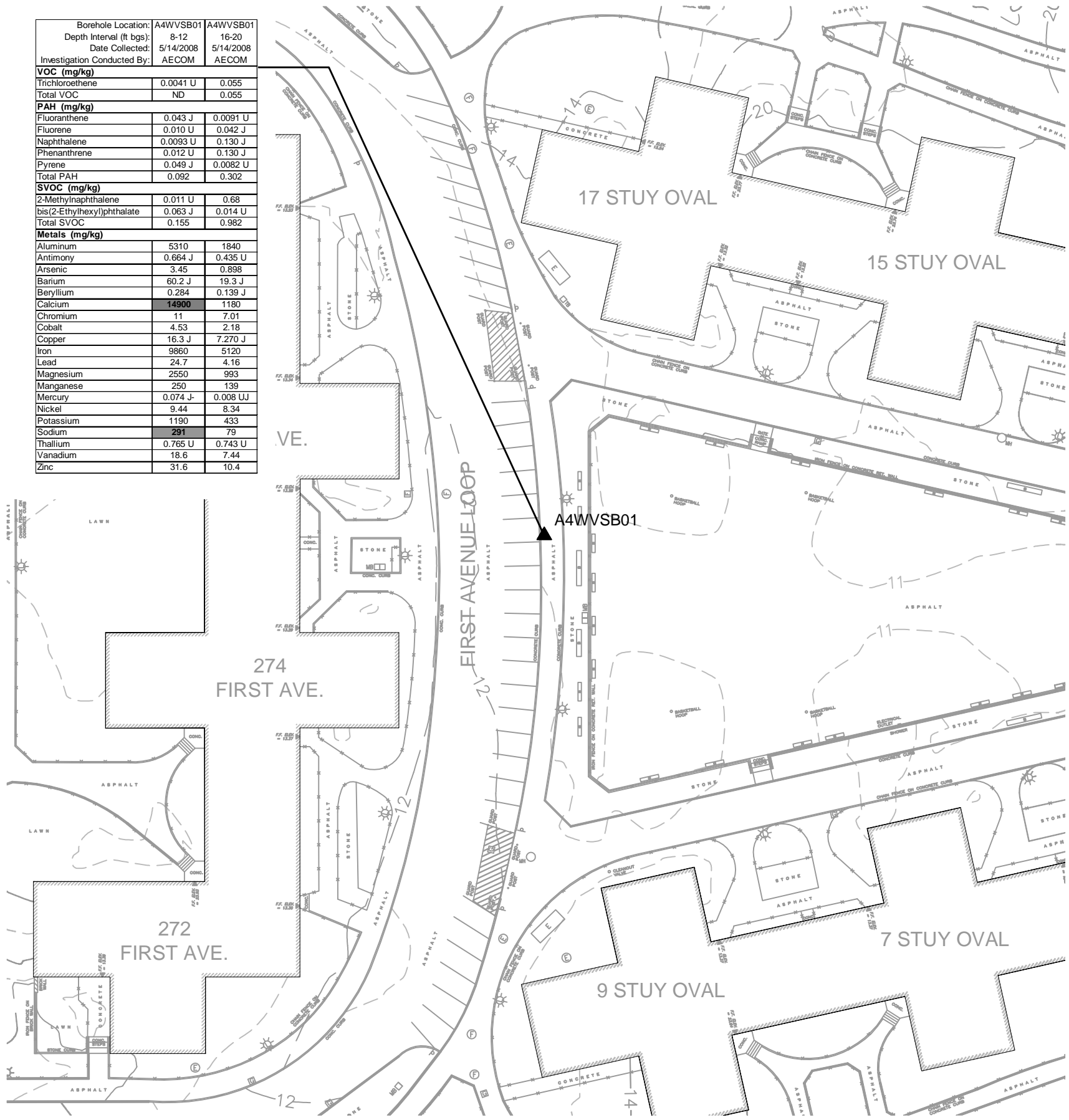
**INDICATES A DETECTED SOIL RESULT VALUE THAT EXCEEDS THE NYSDEC RSC0**  
**INDICATES A DETECTED SOIL RESULT VALUE THAT EXCEEDS THE NYSDEC RSC0 AND ALSO EXCEEDS THE ESTABLISHED SITE BACKGROUND VALUE**

Sample Borehole Location: Depth Interval (ft bgs) Date Collected: Investigation Conducted by:	Site Background (from HA)	NYS DEC RSC0
Total VOCs (mg/kg)	NE	10
<b>Carcinogenic PAHs (mg/kg)</b>		
Benzo(a)anthracene	2.599	0.224
Benzo(a)pyrene	1.046	0.061
Benzo(b)fluoranthene	0.728	1.1
Benzo(k)fluoranthene	0.996	1.1
Chrysene	1.267	0.4
Dibenz(a,h)anthracene	0.162	0.014
<b>Other SVOCs (mg/kg)</b>		
Phenol	0.042	0.03
Total SVOCs (mg/kg)	NE	500
<b>Metals (mg/kg)</b>		
Arsenic	13.63	7.5
Chromium	36.69	10
Mercury	1.305	0.1
Aluminum	7860	7960
Beryllium	0.463	0.16
Copper	35.84	25
Iron	14369	2000
Nickel	15.3	13
Sodium	214.8	214.8
Zinc	81.77	20
<b>Cyanide (mg/kg)</b>		
Cyanide, Total	0.705	NE

- NOTES:**
- CONCENTRATIONS EXCEEDING NYSDEC RSC0s ALSO COMPARED TO ESTABLISHED SITE BACKGROUND CONCENTRATIONS IN SOIL REPORTED IN THE HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
  - EXISTING SOIL BORINGS AND WELL LOCATIONS FROM HALEY & ALDRICH 2004 SITE CHARACTERIZATION WORK. SOIL SAMPLING INFORMATION AND ANALYTICAL RESULTS FROM HALEY & ALDRICH INVESTIGATION WORK REPORTED IN THEIR 2004 CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
  - TABLES LIST FOLLOWING DATA: TOTAL VOC AND SVOC CONCENTRATIONS COMPARED TO TECHNICAL ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) 10/500 ppm VALUES RESPECTIVELY. INDIVIDUAL COMPOUND VALUES EXCEEDING THE NYSDEC RSC0s AND ARSENIC AND TOTAL CYANIDE RESULTS. NOTE THAT TOTAL VOCs AND SVOCs MAY INCLUDE INDIVIDUAL COMPOUNDS THAT WERE DETECTED BUT DID NOT EXCEED NYSDEC RSC0s AND THEREFORE ARE NOT LISTED IN FIGURE TABLES.

- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
  - SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8/06. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146, HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

Borehole Location:	A4WVSB01	A4WVSB01
Depth Interval (ft bgs):	8-12	16-20
Date Collected:	5/14/2008	5/14/2008
Investigation Conducted By:	AECOM	AECOM
<b>VOC (mg/kg)</b>		
Trichloroethene	0.0041 U	0.055
Total VOC	ND	0.055
<b>PAH (mg/kg)</b>		
Fluoranthene	0.043 J	0.0091 U
Fluorene	0.010 U	0.042 J
Naphthalene	0.0093 U	0.130 J
Phenanthrene	0.012 U	0.130 J
Pyrene	0.049 J	0.0082 U
Total PAH	0.092	0.302
<b>SVOC (mg/kg)</b>		
2-Methylnaphthalene	0.011 U	0.68
bis(2-Ethylhexyl)phthalate	0.063 J	0.014 U
Total SVOC	0.155	0.982
<b>Metals (mg/kg)</b>		
Aluminum	5310	1840
Antimony	0.664 J	0.435 U
Arsenic	3.45	0.898
Barium	60.2 J	19.3 J
Beryllium	0.284	0.139 J
Calcium	<b>14900</b>	1180
Chromium	11	7.01
Cobalt	4.53	2.18
Copper	16.3 J	7.270 J
Iron	9860	5120
Lead	24.7	4.16
Magnesium	2550	993
Manganese	250	139
Mercury	0.074 J	0.008 UJ
Nickel	9.44	8.34
Potassium	1190	433
Sodium	<b>291</b>	79
Thallium	0.765 U	0.743 U
Vanadium	18.6	7.44
Zinc	31.6	10.4



Sample Borehole Location: Depth Interval in feet: Date Collected: Investigation Conducted by:	Site Back-ground (from HA)	NYS DEC RSCO
Total VOCs (mg/kg)	NE	10
<b>Carcinogenic PAHs (mg/kg)</b>		
Benz[a]anthracene	2.599	0.224
Benzo[a]pyrene	1.046	0.061
Benzo[b]fluoranthene	0.728	1.1
Benzo[k]fluoranthene	0.996	1.1
Chrysene	1.267	0.4
Dibenz[a,h]anthracene	0.162	0.014
<b>Other SVOCs (mg/kg)</b>		
Phenol	0.042	0.03
Total SVOCs (mg/kg)	NE	500
<b>Metals (mg/kg)</b>		
Arsenic	13.63	7.5
Chromium	36.69	10
Mercury	1.305	0.1
Aluminum	7960	7960
Beryllium	0.463	0.16
Copper	35.84	25
Iron	14369	2000
Nickel	15.3	13
Sodium	214.8	214.8
Zinc	81.77	20
<b>Cyanide (mg/kg)</b>		
Cyanide, Total	0.705	NE

**LEGEND**

- LOW PRESSURE FIRE HYDRANT
- LIGHT POLE
- TRAFFIC BOX
- TRAFFIC POLE
- TRAFFIC SIGN
- ▲** ST14SB12 SRI SOIL BORING LOCATION
- GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE

NYSDEC RSCO

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION RECOMMENDED SOIL CLEANUP OBJECTIVES FROM TAGM 4046; VALUES AGAINST WHICH THE DETECTED CONCENTRATIONS ARE COMPARED.

- NA NOT ANALYZED
- ND TOTAL CONCENTRATION IS LISTED AS ND BECAUSE NO COMPOUNDS WERE DETECTED IN THE GROUP.
- NE NOT ESTABLISHED
- J ESTIMATED VALUE
- U INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN
- UJ INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED

mg/kg MILLIGRAMS/KILOGRAM OR PARTS PER MILLION (PPM)

PAHs POLYCYCLIC AROMATIC HYDROCARBONS (A SUBSET OF SVOCs)

VOCs VOLATILE ORGANIC COMPOUNDS

SVOCs SEMIVOLATILE ORGANIC COMPOUNDS

**BOLD** INDICATES A DETECTED SOIL RESULT VALUE THAT EXCEEDS THE NYSDEC RSCO

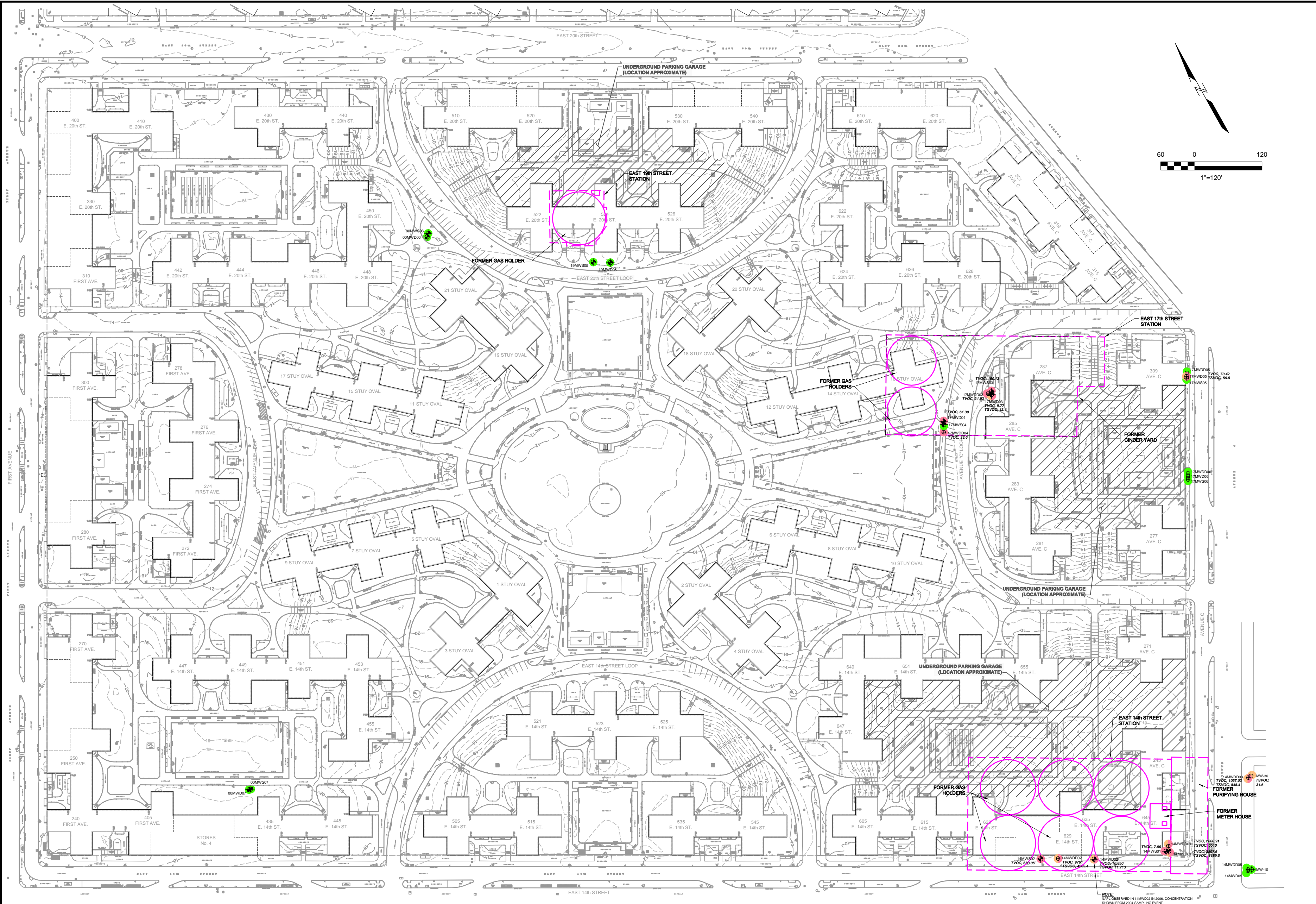
**BOLD** INDICATES A DETECTED SOIL RESULT VALUE THAT EXCEEDS THE NYSDEC RSCO AND ALSO EXCEEDS THE ESTABLISHED SITE BACKGROUND VALUE

- NOTES:**
- CONCENTRATIONS EXCEEDING NYSDEC RSCOs ALSO COMPARED TO ESTABLISHED SITE BACKGROUND CONCENTRATIONS IN SOIL REPORTED IN THE HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
  - EXISTING SOIL BORINGS AND WELL LOCATIONS FROM HALEY & ALDRICH 2004 SITE CHARACTERIZATION WORK. SOIL SAMPLING INFORMATION AND ANALYTICAL RESULTS FROM HALEY & ALDRICH INVESTIGATION WORK REPORTED IN THEIR 2004 CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
  - TABLES LIST FOLLOWING DATA: TOTAL VOC AND SVOC CONCENTRATIONS COMPARED TO TECHNICAL ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) 10/500 ppm VALUES RESPECTIVELY, INDIVIDUAL COMPOUNDS EXCEEDING THE NYSDEC RSCOs, AND ARSENIC AND TOTAL CYANIDE RESULTS. NOTE THAT TOTAL VOCs AND SVOCs MAY INCLUDE INDIVIDUAL COMPOUNDS THAT WERE DETECTED BUT DID NOT EXCEED NYSDEC RSCOs AND THEREFORE ARE NOT LISTED IN FIGURE TABLES.
- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
  - SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8-9/06. SURVEYED BY NEW YORK STATE-LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

**AECOM**

CONSOLIDATED EDISON OF NEW YORK INC. STUYVESANT TOWN FORMER MGP SITES 01869-164-270		FIRST AVENUE LOOP SUBSURFACE SOIL ANALYTICAL EXCEEDANCE SUMMARY	
DATE: 01/15/09	DRWN: RCW/WFD	FIGURE 5-3D	

File: F:\PROJECTS\Consolidated Edison NY\StuyTown\171869-164-270-S-03.dwg Layout: Target Compnd Exc Summ 2006 User: Warren Plotted: Feb 11, 2009 - 2:18pm Xref's:



- NOTES:**
1. CONCENTRATIONS SHOWN ARE FROM THE JUNE 2006 GROUNDWATER SAMPLING EVENT CONDUCTED BY GEI.
  2. UNLESS NOTED OTHERWISE, EXISTING WELLS INSTALLED BY HALEY & ALDRICH AS PART OF THEIR 2004 SITE CHARACTERIZATION SCOPE OF WORK. HALEY & ALDRICH WELL CONSTRUCTION DATA AND GROUNDWATER DATA OBTAINED FROM ASSOCIATED REPORT DATED OCTOBER 2004, REVISED APRIL 2005.
  3. ALL LISTED CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).
  4. IF A DUPLICATE SAMPLE WAS COLLECTED, THE SAMPLE SHOWING HIGHEST EXCEEDANCE IS LISTED.

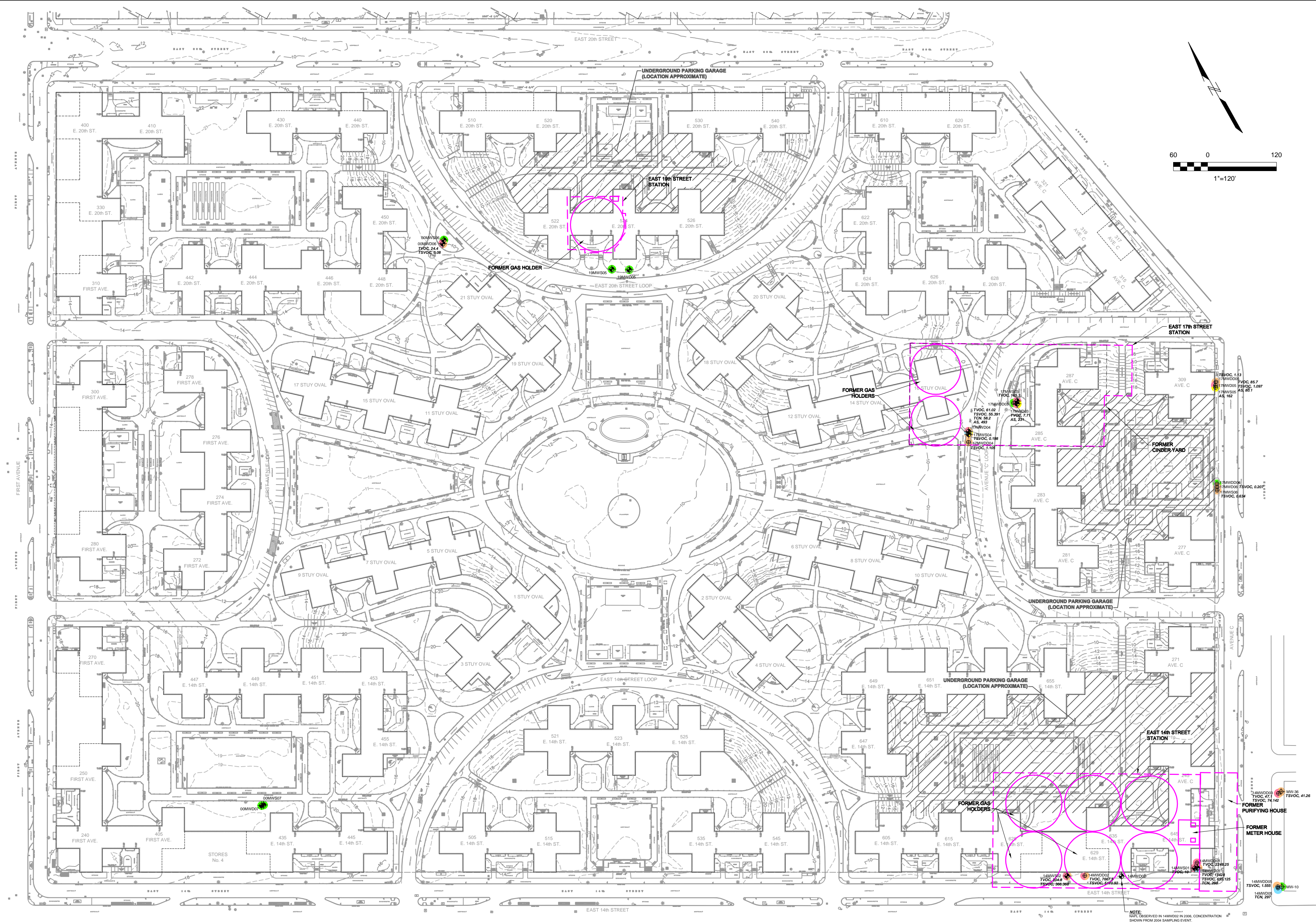
- SOURCES:**
1. FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
  2. SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8/06. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

- LEGEND**
- ⊕ 17MW004 IRI MONITORING WELL LOCATION
  - ⊕ 17MW003 SC MONITORING WELL LOCATION
  - 20' GROUND SURFACE TOPOGRAPHY CONTOURS
  - BOUNDARY OF FORMER MGP SITE
  - TVOC, 70.42 TARGET COMPOUND(S), CONCENTRATION IN ug/L

- ANALYTICAL SUMMARY**
- NO TARGET COMPOUND CONCENTRATIONS ABOVE THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AMBIENT WATER QUALITY STANDARDS (NYSDEC AWQS)
  - AT LEAST 1 BTEX CONCENTRATION ABOVE THE NYSDEC AWQS. BTEX COMPOUNDS (BENZENE, TOLUENE, ETHYLBENZENE AND XYLENES) ARE A SUBSET OF THE TOTAL VOLATILE ORGANIC COMPOUNDS (TVOC) SHOWN.
  - AT LEAST 1 PAH CONCENTRATION ABOVE THE NYSDEC AWQS. PAHS (POLYCYCLIC AROMATIC HYDROCARBONS) ARE A SUBSET OF THE TOTAL SEMIVOLATILE ORGANIC COMPOUNDS (TSVOC) SHOWN.
  - ARSENIC (AS) CONCENTRATION ABOVE THE NYSDEC AWQS (25 ug/L)
  - TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE NYSDEC AWQS (200 ug/L)

NOTE: SAMPLE OBSERVED IN 14MW002 IN 2006. CONCENTRATION SHOWN FROM 2004 SAMPLING EVENT.





**NOTES:**

1. CONCENTRATIONS SHOWN ARE FROM THE ---- 2008 GROUNDWATER SAMPLING EVENT CONDUCTED BY ENSR/AECOM.
2. UNLESS NOTED OTHERWISE, EXISTING WELLS INSTALLED BY HALEY & ALDRICH AS PART OF THEIR 2004 SITE CHARACTERIZATION SCOPE OF WORK. HALEY & ALDRICH WELL CONSTRUCTION DATA AND GROUNDWATER DATA OBTAINED FROM ASSOCIATED REPORT DATED OCTOBER 2004, REVISED APRIL 2005.
3. ALL LISTED CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L).
4. IF A DUPLICATE SAMPLE WAS COLLECTED, THE SAMPLE SHOWING HIGHEST EXCEEDANCE IS LISTED.

**SOURCES:**

1. FIGURE 2: SITE PLAN AND MGP FACILITIES, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.
2. SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 88-906. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.

**LEGEND**

- ⊕ 17MWDD04 IRI MONITORING WELL LOCATION
- ⊕ 17MWS03 SC MONITORING WELL LOCATION
- ~ 20' GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- TVOC, 70.42 TARGET COMPOUND(S), CONCENTRATION IN µg/L

**ANALYTICAL SUMMARY**

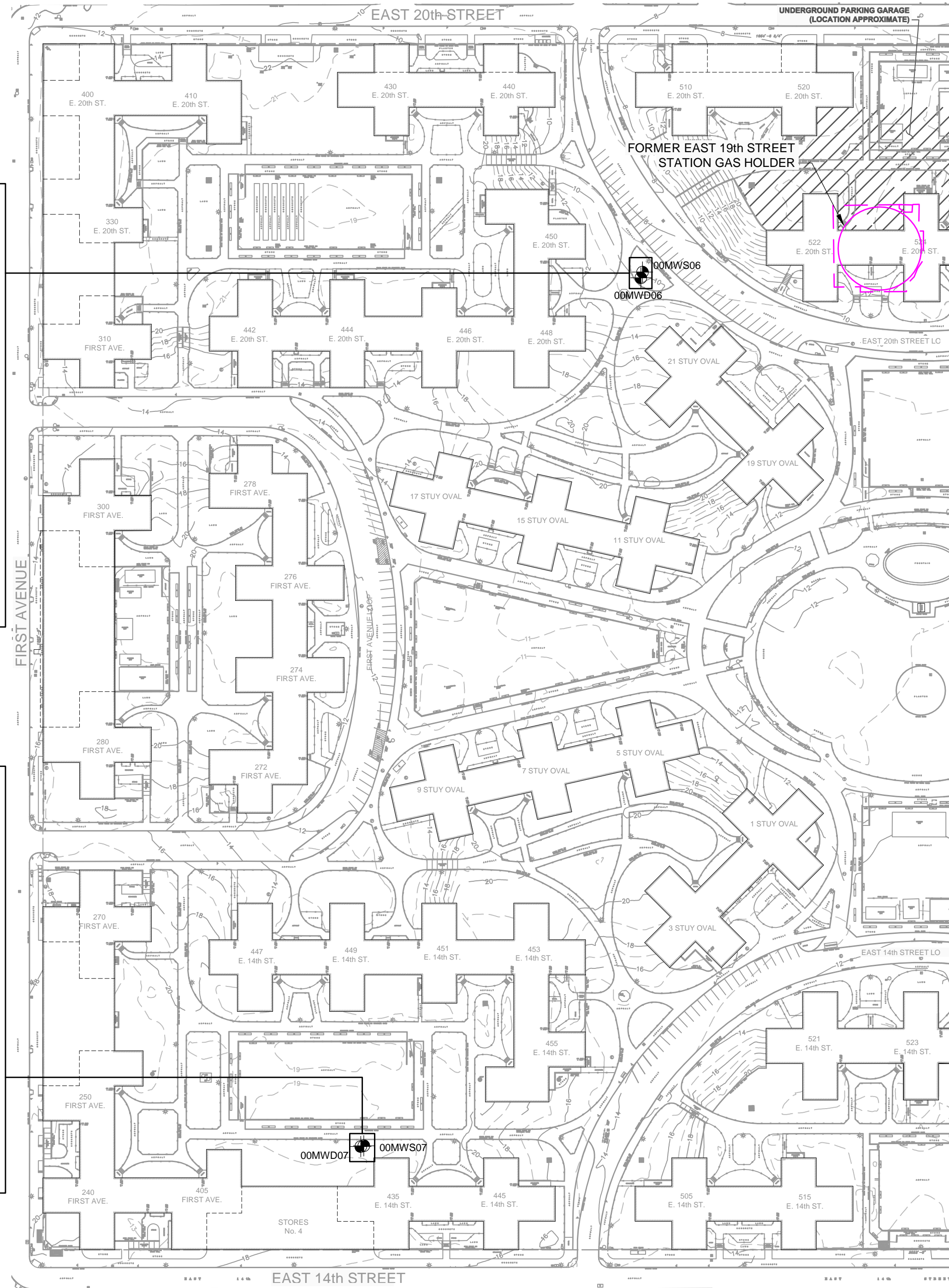
- NO TARGET COMPOUND CONCENTRATIONS ABOVE THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AMBIENT WATER QUALITY STANDARDS (NYSDEC AWQS)
- AT LEAST 1 BTEX CONCENTRATION ABOVE THE NYSDEC AWQS. BTEX COMPOUNDS (BENZENE, TOLUENE, ETHYLBENZENE AND XYLENES) ARE A SUBSET OF THE TOTAL VOLATILE ORGANIC COMPOUNDS (TVOC) SHOWN.
- AT LEAST 1 PAH CONCENTRATION ABOVE THE NYSDEC AWQS. PAHS (POLYCYCLIC AROMATIC HYDROCARBONS) ARE A SUBSET OF THE TOTAL SEMIVOLATILE ORGANIC COMPOUNDS (TSVOC) SHOWN.
- ARSENIC (AS) CONCENTRATION ABOVE THE NYSDEC AWQS (25 µg/L)
- TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE NYSDEC AWQS (200 µg/L)

**NOTE:** MAX OBSERVED IN 14MWDD02 IN 2008, CONCENTRATION SHOWN FROM 2008 SAMPLING EVENT.

Sample Location	00MWS06	00MWS06	00MWS06	00MWS06
Screened Interval (ft bgs)	7.2-17.2	7.2-17.2	7.2-17.2	7.2-17.2
Sample Date	4/19/2004	8/19/2008	8/19/2008	4/19/2004
Investigation Conducted by	H&A	GEI	AECOM	H&A
<b>BTEX (ug/L)</b>	0.3 U	1 U	0.52 U	2
Benzene	ND	ND	ND	2
Total BTEX	ND	ND	ND	2
<b>Inorganics VOC (ug/L)</b>				
Chloroform	0.2 U	1 U	14	0.2 U
Dichloroethene, cis-1,2-	0.2 U	1 U	0.33 U	5.4
Tetrachloroethene	0.3 U	1 U	0.68 U	3.3
Trichloroethene	0.2 U	1 U	0.56 U	2.6
Vinyl chloride	0.5 U	1 U	0.46 U	0.5
Total VOCs	ND	ND	14	13.8
<b>Noncarcinogenic PAHs (ug/L)</b>				
Fluoranthene	0.053 U	10 U	0.022 J	0.050 U
Phenanthrene	0.1 U	10 U	0.033 J	0.1 U
Total Noncarcinogenic PAHs	ND	ND	0.055	ND
<b>Total PAHs (ug/L)</b>	ND	ND	0.055	ND
Total PAHs	ND	ND	0.055	ND
<b>SVOC TICs (ug/L)</b>	NA	39	NA	NA
Total SVOC TICs	NA	39	NA	NA
<b>Dissolved Metals (ug/L)</b>				
Barium	NA	139 J	NA	NA
Calcium	NA	272000 J	NA	NA
Chromium	NA	0.82 J	NA	NA
Copper	NA	197	NA	NA
Magnesium	NA	48700 J	NA	NA
Manganese	NA	977 J	NA	NA
Potassium	NA	87000 NA	NA	NA
Sodium	NA	654000 NA	NA	NA
Zinc	NA	255 J	NA	NA
<b>Total Metals (ug/l)</b>				
Aluminum	62.6 U	200 U	28.3 J	62.6 U
Barium	137	188 J	35.3 J	96
Calcium	39800	281000 J	39700	73500
Chromium	1.6 U	12.1 J	1.400 U	1.6 U
Copper	3.7 U	4.88 J	5.670 J	3.7 U
Iron	811	3080	811	307
Lead	2.1 U	5.1 U	5.890 J	2.1 U
Magnesium	58300	50300	3370 J	28800
Manganese	452	1040 J	240	202
Nickel	4.1 U	4.18 J	4.900 U	2.6 U
Potassium	55100	89400 J	5000 J	18800
Sodium	47400	678000 J	17200	105000
Zinc	364	319 J	39.1	5.8 U
<b>Inorganics (mg/L)</b>				
Fluoride	0.31	NA	NA	0.2
Chloride	862	NA	NA	145
Sulfate	211	NA	NA	68.7
Nitrogen, Ammonia	4.4	NA	NA	1.7
Nitrogen, Nitrate	2.7	NA	NA	0.7

Sample Location	00MWS07	00MWS07	00MWS07
Screened Interval (ft bgs)	15-25	15-25	15-25
Sample Date	4/16/2004	6/9/2006	9/29/2008
Investigation Conducted by	H&A	GEI	AECOM
<b>Noncarcinogenic PAHs (ug/L)</b>			
Fluoranthene	0.050 U	10 U	0.031 J
Naphthalene	0.3	10 U	0.016 U
Phenanthrene	0.3	10 U	0.013 U
Pyrene	0.070 U	10 U	0.031 J
Total Noncarcinogenic PAHs	0.6	ND	0.062
<b>Total PAHs (ug/L)</b>	0.6	ND	0.062
Total PAHs	0.6	ND	0.062
<b>SVOC TICs (ug/L)</b>	NA	53.3	NA
Total SVOC TICs	NA	53.3	NA
<b>Total Metals (ug/l)</b>			
Aluminum	1050	200 U	19.3 UJ
Arsenic	7.8	10 U	5.400 U
Barium	107	200 U	62.2
Calcium	172000	156000 J	155000
Chromium	2.4	10 U	1.400 U
Iron	11700	1230	671 J
Lead	5.3	5 UJ	3.230 J
Magnesium	36500	27000 J	26100
Manganese	1610	796	809
Nickel	3.5	40 U	4.900 U
Potassium	16700	23100	22900
Selenium	4.2 U	10 U	4.650 J
Sodium	36000	44400	41500
Zinc	18.9	20 UJ	5.430 J
<b>Inorganics (mg/L)</b>			
Cyanide, Total	0.013	0.017	19
Chloride	67.5	NA	NA
Sulfate	104	NA	NA
Nitrogen, Ammonia	2.2	NA	NA

Sample Location	00MWD07	00MWD07	00MWD07	00MWD07	DUP
Screened Interval (ft bgs)	30.6-40.6	30.6-40.6	30.6-40.6	30.6-40.6	30.6-40.6
Sample Date	4/16/2004	6/9/2006	9/29/2008	9/29/2008	9/29/2008
Investigation Conducted by	H&A	GEI	AECOM	AECOM	AECOM
<b>Noncarcinogenic PAHs (ug/L)</b>					
Acenaphthylene	0.070 U	12 U	0.020 J	0.013 U	
Anthracene	0.080 U	12 U	0.020 J	0.020 J	
Fluoranthene	0.050 U	12 U	0.026 U	0.041 J	
Naphthalene	0.2	12 U	0.016 U	0.016 U	
Pyrene	0.070 U	12 U	0.020 J	0.031 J	
Total Noncarcinogenic PAHs	0.2	ND	0.06	0.092	
<b>Total PAHs (ug/L)</b>	0.2	ND	0.06	0.092	
Total PAHs	0.2	ND	0.06	0.092	
<b>SVOC TICs (ug/L)</b>	NA	54	NA	NA	
Total SVOC TICs	NA	54	NA	NA	
<b>Dissolved Metals (ug/L)</b>					
Calcium	NA	67800 J	NA	NA	
Copper	NA	5.44 J	NA	NA	
Magnesium	NA	27300 J	NA	NA	
Manganese	NA	151	NA	NA	
Potassium	NA	8260 J	NA	NA	
Sodium	NA	67300	NA	NA	
Zinc	NA	30.8 J	NA	NA	
<b>Total Metals (ug/l)</b>					
Aluminum	1290	200 U	711 J	19.3 UJ	
Barium	60.7	200 U	58.9	49.4 J	
Calcium	67200	62700 J	56100	149000	
Copper	3.7 U	3.89 J	7.620 J	3.700 U	
Iron	1770	137	883 J	953 J	
Lead	2.3 U	5 UJ	6.860 J	3.330 J	
Magnesium	29500	25100 J	20000	26400	
Manganese	418	188	613	838	
Nickel	2.4	40 U	4.900 U	4.900 U	
Potassium	4270 U	7400 J	10300	22500	
Selenium	4.5	10 U	4.500 U	5.890 J	
Sodium	65200	61200	59500	41600	
Vanadium	1.8 U	50 U	10.0 J	4.100 U	
Zinc	7.3	20 UJ	17.1 J	6.500 J	
<b>Inorganics (mg/L)</b>					
Cyanide, Total	0.01 U	0.01 U	10	10	
Fluoride	0.1 U	NA	NA	NA	
Chloride	95.9	NA	NA	NA	
Sulfate	128	NA	NA	NA	
Nitrogen, Ammonia	1.0 U	NA	NA	NA	
Nitrogen, Nitrate	0.1 U	NA	NA	NA	



**LEGEND**

- LOW PRESSURE FIRE HYDRANT
- LIGHT POLE
- TRAFFIC BOX
- TRAFFIC POLE
- TRAFFIC SIGN
- SC MONITORING WELL LOCATION
- GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE

**NYSDEC AWQS**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AMBIENT WATER QUALITY STANDARDS (JUNE 1988).

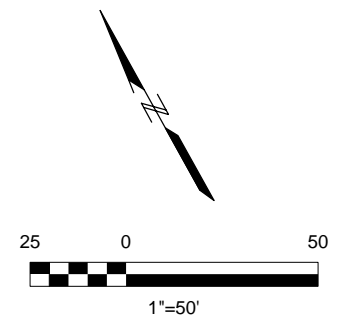
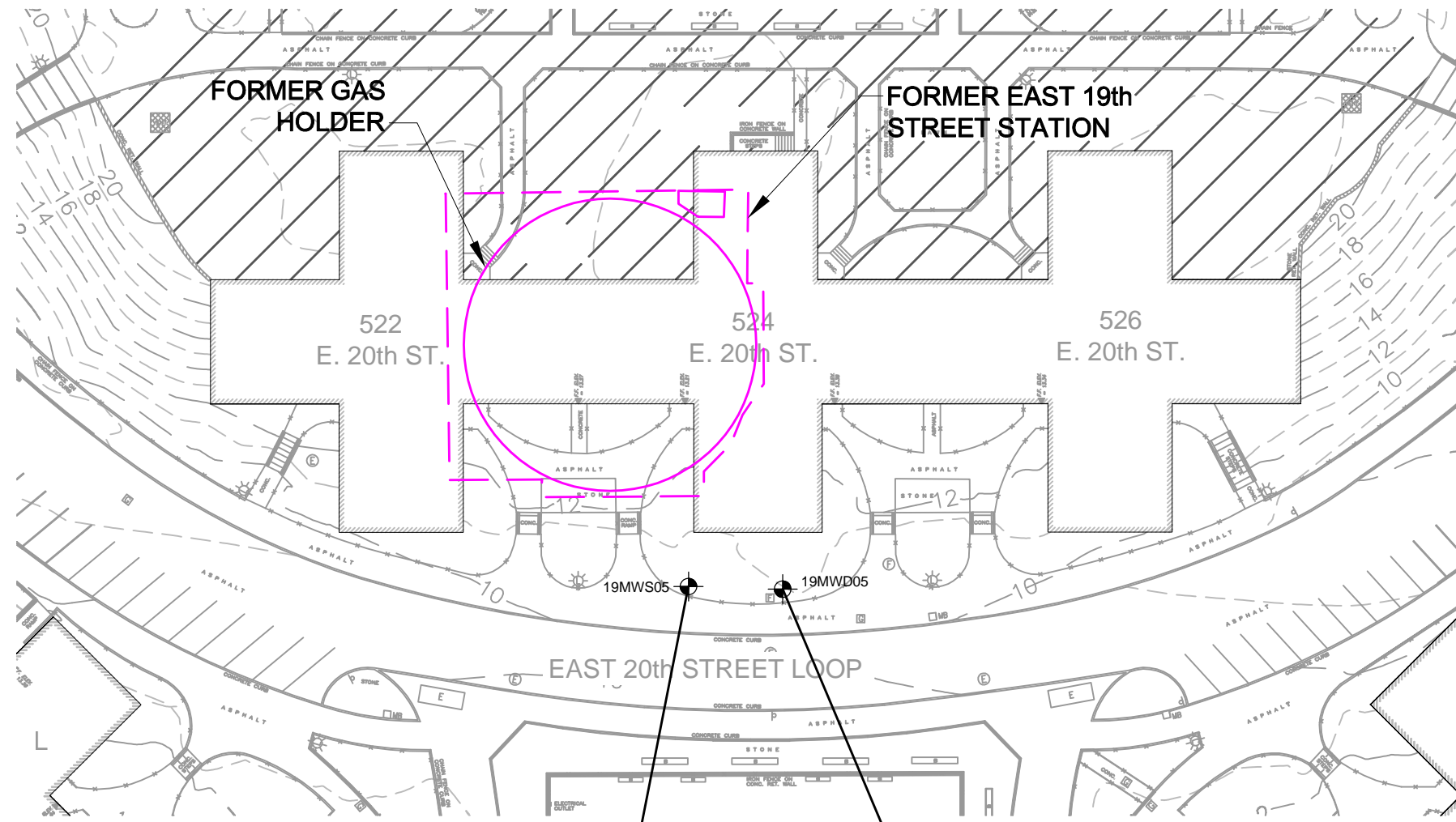
NA NOT ANALYZED  
 ND NOT DETECTED  
 NE NOT ESTABLISHED  
 J ESTIMATED VALUE  
 U INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN  
 UU INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED  
 ug/L MICROGRAMS/LITER OR PARTS PER BILLION (PPB)  
 mg/L MILLIGRAMS/LITER OR PARTS PER MILLION (PPM)  
 BTEX BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE (A SUBSET OF VOCs)  
 VOCs VOLATILE ORGANIC COMPOUNDS  
 SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS  
**BOLD** INDICATES A DETECTED GROUNDWATER RESULT VALUE THAT EXCEEDS THE NYSDEC AWQS  
 INDICATES THAT VALUE IS A GUIDANCE VALUE AND NOT A STANDARD

Sample Location:	00MWS06	NYSDEC
Screened Interval in feet:	7.2-17.2	AWQS
Date Collected:	4/19/2004	
<b>BTEX (ug/L)</b>		1
Benzene	ND	
<b>Other VOCs (ug/L)</b>		5
Dichloroethene, cis-1,2-	0.33	
<b>Total VOCs (ug/L)</b>	14	NE
<b>Total SVOCs (ug/L)</b>	39	NE
<b>Dissolved Metals (ug/L)</b>		
Arsenic	NA	25
Iron	NA	300
Magnesium	NA	35000
Manganese	NA	300
Sodium	NA	20000
<b>Total Metals (ug/l)</b>		
Arsenic	NA	25
Iron	NA	300
Magnesium	NA	35000
Manganese	NA	300
Sodium	NA	20000
<b>Cyanide (mg/L)</b>		
Cyanide, Total	0.013	200

- NOTES:**
- THE APRIL 2004 GROUNDWATER SAMPLING EVENT WAS CONDUCTED BY HALEY & ALDRICH AND DOCUMENTED IN THE SITE CHARACTERIZATION REPORT (2004, REVISED 2005). THE JUNE 2006 GROUNDWATER SAMPLING EVENT WAS CONDUCTED BY GEI. THE 2008 GROUNDWATER SAMPLING EVENT WAS CONDUCTED BY ENS/AECOM.
  - ONLY COMPOUNDS WHICH EXCEED THE NYSDEC AWQS ARE LISTED.
  - UNLESS NOTED OTHERWISE, EXISTING WELLS INSTALLED BY HALEY & ALDRICH AS PART OF THEIR 2004 SITE CHARACTERIZATION SCOPE OF WORK. HALEY & ALDRICH WELL CONSTRUCTION DATA AND GROUNDWATER DATA OBTAINED FROM ASSOCIATED REPORT DATED OCTOBER 2004, REVISED APRIL 2005.
  - GEI ANALYZED SAMPLES FOR DISSOLVED METALS ONLY IF FIELD READINGS ABOVE 50 NEPHALOMETRIC UNITS FOR TURBIDITY.
  - SITE BACKGROUND CONCENTRATIONS NOT ESTABLISHED FOR COMPARISON OF GROUNDWATER RESULTS FROM STATION WELLS.
- SOURCES:**
- FIGURE 2: SITE PLAN AND MGP FACILITIES. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK. PREPARED BY HALEY & ALDRICH. SCALE: 1" = 60'. DATED OCTOBER, 2004.
  - SURVEY OF MONITORING WELLS AND GEI SAMPLE LOCATIONS CONDUCTED BY GEI CONSULTANTS, INC. ON 6/8/06. SURVEYED BY NEW YORK STATE LICENSED LAND SURVEYOR NO. 050146. HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM (LONG ISLAND LAMBERT, NORTH AMERICAN DATUM (NAD) 83). VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD) 88.







LEGEND	
	LOW PRESSURE FIRE HYDRANT
	LIGHT POLE
	TRAFFIC BOX
	TRAFFIC POLE
	TRAFFIC SIGN
	SC MONITORING WELL LOCATION
	GROUND SURFACE TOPOGRAPHY CONTOURS
	BOUNDARY OF FORMER MGP SITE
NYSDEC AWQS	
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AMBIENT WATER QUALITY STANDARDS (JUNE 1998).	
NA	NOT ANALYZED
ND	TOTAL CONCENTRATION IS LISTED AS ND BECAUSE NO COMPOUNDS WERE DETECTED IN THE GROUP.
NE	NOT ESTABLISHED
J	ESTIMATED VALUE
U	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN
UU	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED
ug/L	MICROGRAMS/LITER OR PARTS PER BILLION (PPB)
mg/L	MILLIGRAMS/LITER OR PARTS PER MILLION (PPM)
VOCs	VOLATILE ORGANIC COMPOUNDS
SVOCs	SEMIVOLATILE ORGANIC COMPOUNDS
<b>BOLD</b>	INDICATES A DETECTED GROUNDWATER RESULT VALUE THAT EXCEEDS THE NYSDEC AWQS
*	INDICATES THAT VALUE IS A GUIDANCE VALUE AND NOT A STANDARD

Sample Location:	NYSDEC
Screened Interval (ft bgs):	AWQS
Date Collected:	
<b>VOCs (ug/L)</b>	
Dichloroethene, cis-1,2-	5
<b>Total VOCs (ug/L)</b>	NE
<b>Total SVOCs (ug/L)</b>	NE
<b>Dissolved Metals (ug/L)</b>	
Arsenic	25
<b>Total Metals (ug/L)</b>	
Arsenic	25
Iron	300
Lead	25
Magnesium	35000*
Manganese	300
Sodium	20000
<b>Cyanide (mg/L)</b>	
Cyanide, Total	200

Sample Location:	19MWS05	19MWS05 DUP	19MWS05	19MWS05
Screened Interval (ft bgs):	5.5-15.5	5.5-15.5	5.5-15.5	5.5-15.5
Date Collected:	4/19/2004	4/19/2004	6/7/2006	8/19/2008
Investigation Conducted By:	H&A	H&A	GEI	AECOM
<b>BTEX (ug/L)</b>				
Benzene	0.6	1.3U	1U	0.52 U
Toluene	4.6	4.4	1U	0.51 U
Ethylbenzene	0.6	1.8 U	1 U	0.50 U
Total BTEX	5.8	4.4	ND	ND
<b>Other VOCs (ug/L)</b>				
Acetone	34	38 J	5 UU	2.7 U
Styrene	1.1	1.4 U	1 U	0.48 U
Total VOCs	40.9	42.4	ND	ND
<b>VOC TICs (ug/L)</b>				
Total VOC TICs	226	192	NA	NA
<b>Noncarcinogenic PAHs (ug/L)</b>				
Acenaphthene	0.1 U	0.1 U	10 U	0.015 U
Phenanthrene	1.1	0.8	10 U	0.034 J
Total Noncarcinogenic PAHs	1.1	0.8	ND	0.34
<b>Total PAHs (ug/L)</b>				
Total PAHs	1.1	0.8	ND	0.034
<b>Other SVOCs (ug/L)</b>				
Diethyl phthalate	0.3 U	0.3 U	10U	0.370 U
Methylphenol, 4-	12	0.5 U	10 U	0.450 U
Total SVOCs	13.1	0.8	ND	0.034
<b>SVOC TICs (ug/L)</b>				
Total SVOC TICs	1952	2014.2	21.9	NA
<b>Total Metals (ug/L)</b>				
Aluminum	1870	1940	200U	685
Arsenic	7.4	7.3	10 UU	5.400 U
Barium	122	124	107 J	109
Calcium	177000	176000	155000 J	124000
Copper	6	7.5	25 UJ	3.700 U
Iron	<b>14600</b>	<b>14700</b>	<b>472</b>	<b>1470</b>
Lead	<b>50.1</b>	<b>55.2</b>	5 U	15
Magnesium	<b>40100</b>	<b>40200</b>	<b>39900</b>	22700 J
Manganese	<b>542</b>	<b>542</b>	202 J	112
Mercury	0.12	0.13	0.20 UJ	0.06 UJ
Potassium	20600	20400	30400 J	22000 J
Sodium	<b>69600</b>	<b>69000</b>	<b>115000 J</b>	<b>67900</b>
Vanadium	7.4	5.4	50 UJ	4.100 U
Zinc	20.4 U	23.0 U	26.3 J	41.4
<b>Inorganics (mg/L)</b>				
Chloride	146	148	NA	NA
Fluoride	0.11	0.12	NA	NA
Sulfate	49.8	52.2	NA	NA
Nitrogen, Ammonia	5.6	5.5	NA	NA

Sample Location:	19MWD05	19MWD05	19MWD05
Screened Interval (ft bgs):	20.5-30.5	20.5-30.5	20.5-30.5
Date Collected:	4/19/2004	6/9/2006	8/19/2008
Investigation Conducted By:	H&A	GEI	AECOM
<b>Other VOCs (ug/L)</b>			
Dichloroethene, cis-1,2-	2.2	<b>7.1</b>	<b>10</b>
Tetrachloroethene	0.7	1 U	0.68 U
Trans-1,2-dichloroethene	0.2 U	0.52 J	0.57 UU
Trichloroethene	1.2	1.3	0.56 U
Vinyl chloride	0.5 U	0.44 J	0.46 U
Total VOCs	4.1	9.36	10
<b>Noncarcinogenic PAHs (ug/L)</b>			
Acenaphthene	0.4	10 U	0.014 U
Phenanthrene	0.4	10 U	0.160 J
Total Noncarcinogenic PAHs	0.8	ND	0.16
<b>Total PAHs (ug/L)</b>			
Total PAHs	0.8	ND	0.16
<b>Other SVOCs (ug/L)</b>			
Diethyl phthalate	4.9	10U	0.360 U
Phenol	1.3	10 U	0.610 U
Total SVOCs	7	ND	0.16
<b>SVOC TICs (ug/L)</b>			
Total SVOC TICs	NA	68.7	NA
<b>Total Metals (ug/L)</b>			
Aluminum	223	200U	358
Barium	259	262	271
Calcium	48700	43300 J	50700
Chromium	NA	NA	1.560 J
Iron	<b>14500</b>	<b>14300</b>	<b>13800</b>
Lead	2.9 U	5 UU	7.760 J
Magnesium	<b>58700</b>	<b>61100 J</b>	<b>69800 J</b>
Manganese	<b>723</b>	286	<b>334</b>
Mercury	0.20 U	0.2 J	0.06 UU
Nickel	NA	NA	12.0 J
Potassium	39800	83700	65800 J
Sodium	<b>47300</b>	<b>758000</b>	<b>496000</b>
Zinc	6.0 U	20 UU	34.2
<b>Inorganics (mg/L)</b>			
Chloride	629	NA	NA
Fluoride	0.37	NA	NA
Sulfate	46	NA	NA
Nitrogen, Ammonia	31.6	NA	NA

**NOTES:**

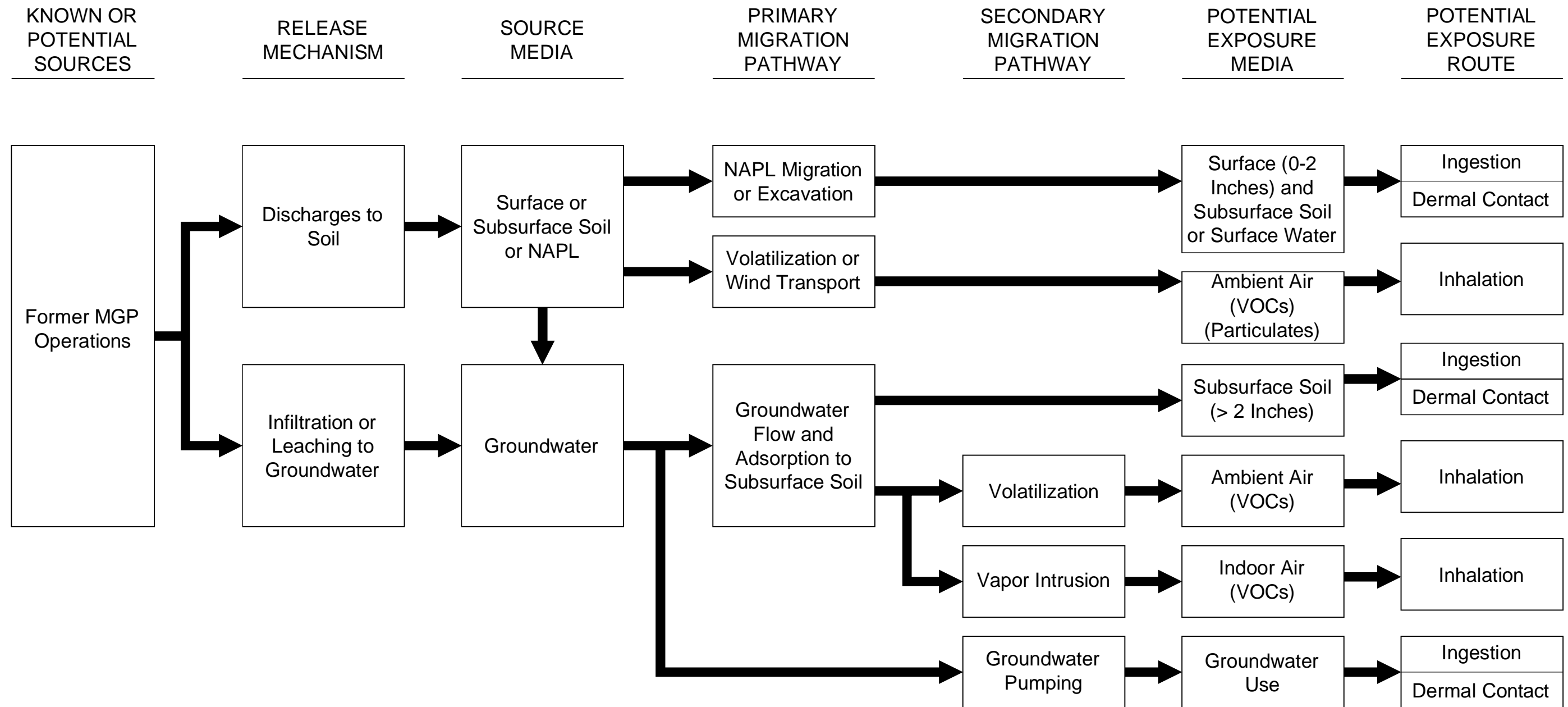
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<b>CONSOLIDATED EDISON OF NEW YORK INC.</b> <b>STUYVESANT TOWN FORMER MGP SITES</b> 01869-164-270		<b>EAST 19th STREET STATION</b> <b>GROUNDWATER ANALYTICAL</b> <b>EXCEEDANCE SUMMARY</b>
DATE: 01/15/09	DRWN: RCW/WFD	<b>FIGURE 5-5D</b>



Note:  
Table 6-1 provides summary information regarding the potential receptor groups identified for Stuyvesant Town.