**FORMER WEST 45TH STREET GAS WORKS SITE**

**NEW YORK COUNTY**

**NEW YORK, NEW YORK**

# INTERIM SITE MANAGEMENT PLAN

**NYSDEC Site Number:231109**

**Prepared for:**

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

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**Revisions to Final Approved Interim Site Management Plan:**

| Revision No. | Date Submitted | Summary of Revision | NYSDEC Approval Date |
|---|---|---|---|
| | | | |
| | | | |
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| | | | |

**AUGUST 2023**

## CERTIFICATION STATEMENT

I _____certify that I am currently a NYS registered professional engineer and that this Interim Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

_____ P.E.

_____DATE

# FORMER WEST 45TH STREET GAS WORKS SITE
# NEW YORK COUNTY
# NEW YORK, NEW YORK

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## List of Acronyms

| | |
|---|---|
| AMSL | Above mean sea level |
| AWQSGV | Ambient water quality standard and guidance value |
| bgs | Below ground surface |
| BTEX | Benzene, toluene, ethylbenzene and xylene |
| CAMP | Community Air Monitoring Plan |
| C & D | Construction and Demolition |
| COC | Certificate of Completion |
| Con Edison | Consolidated Edison Company of New York, Inc. |
| CFR | Code of Federal Regulation |
| CP | Commissioner Policy |
| CSCO | Commercial Soil Cleanup Objective |
| DER | Division of Environmental Remediation |
| DNAPL | Dense non-aqueous phase liquid |
| DSR | Data Summary Report |
| DUSR | Data Usability Summary Report |
| EC | Engineering Control |
| ECL | Environmental Conservation Law |
| EDR | Environmental Data Resources, Inc. |
| ELAP | Environmental Laboratory Approval Program |
| EPA | Environmental Protection Agency |
| EWP | Excavation Work Plan |
| HASP | Health and Safety Plan |
| IC | Institutional Control |
| ISMP | Interim Site Management Plan |
| µg/m3 | Microgram(s) per cubic meter |
| µg/L | Microgram(s) per liter |
| MGP | Manufactured gas plant |
| MTBE | Methyl tert-butyl ether |
| MW | Monitoring well |
| NAPL | Non-aqueous phase liquid |
| NYS | New York State |
| NYCRR | New York Codes, Rules and Regulations |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOH | New York State Department of Health |
| OSHA | Occupational Safety and Health Administration OU Operable Unit |
| PAHs | Polycyclic aromatic hydrocarbons |
| PDI | Pre-design investigation |
| P.E. or PE | Professional Engineer |
| PFAS | Per- and Polyfluoroalkyl Substances |
| PID | Photoionization Detector |
| ppm | Part(s) per million |
| PRR | Periodic Review Report |
| RAO | Remedial Action Objective |
| RAWP | Remedial Action Work Plan |
| RI/FS | Remedial Investigation/Feasibility Study |
| RIWP | Remedial Investigation Work Plan |

| | |
|---|---|
| ROD | Record of Decision |
| RP | Remedial Party |
| RSCO | Restricted Soil Cleanup Objective |
| SB | Soil boring |
| SC | Site characterization |
| SCG | Standards, Criteria and Guidelines |
| SCR | Soil Characterization Report |
| SCWP | Site Characterization Work Plan |
| SVOC | Semi-volatile organic compound |
| TAL | Target Analyte List |
| TCL | Target Compound List |
| TCLP | Toxicity Characteristic Leachate Procedure |
| UPS | United Parcel Service |
| USCO | Unrestricted Soil Cleanup Objective |
| USCS | Unified Soil Classification System |
| UST | Underground Storage Tank |
| VCP | Voluntary Cleanup Program |
| VOC | Volatile organic compound |

## ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Interim Site Management Plan (ISMP):

Site Identification: Site No. 231109 – West 45th St. Former Gas Works, New York, NY

| | |
|---|---|
| Institutional Controls: | 1. The property may be used for commercial or industrial use. |
| | 2. All engineering controls (ECs) must be operated and maintained as specified in this ISMP. |
| | 3. All ECs must be inspected at a frequency and in a manner defined in the ISMP. |
| | 4. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the New York State Department of Health or New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the New York State Department of Environmental Conservation (NYSDEC). |
| | 5. Groundwater monitoring must be performed as defined in this ISMP. |
| | 6. Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this ISMP. |
| | 7. All future activities that will disturb remaining contaminated material must be conducted in accordance with this ISMP. |
| | 8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this ISMP. |
| | 9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this ISMP. |

| | | |
|---|---|---|
| Institutional Controls (cont.) | 10. Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement[1](s). | |
| | 11. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the Institutional Control boundaries as described below, and any potential impacts that are identified must be monitored or mitigated. | |
| Engineering Controls: | 1. Cover system | |
| | 2. Groundwater Monitoring Wells. | |
| Inspections: | | Frequency |
| 1. Cover inspection | | Annually |
| Monitoring: | | |
| 1. Groundwater Monitoring Program | | Annually |
| Reporting: | | |
| 1. Groundwater Data | | Annually |
| 2. Inspection Report | | Annually |
| 3. Periodic Review Report | | Annually, or as otherwise determined by the NYSDEC |

Further descriptions of the above requirements are provided in detail in the latter sections of this ISMP.

[1] The Environmental Easement(s) will be appended to Appendix A of the ISMP once recorded.

# 1.0 INTRODUCTION

## 1.1 General

This Interim Site Management Plan (ISMP) is a required element of the remedial program for the West 45th Street Former Gas Works Site located in New York, New York (hereinafter referred to as the "Site") (see Figure 1). The Site is composed of two Operable Units (OU-1 and OU-2), as detailed on Figure 2. The final selected remedy for OU-1 was accepted by the NYSDEC in the Decision Document dated September 2016, which includes Long-term Site Management and Monitoring. The final selected remedy for OU-2 was accepted by the NYSDEC in a Decision Document dated July 2021, which includes Excavation, In-Situ Soil Stabilization, Institutional Controls, and Site Management. This ISMP includes the elements of Site Management and Monitoring required for OU-1. However, since the final remedy has not been completed for OU-2, this plan is considered interim.

The Site was formerly in the New York State (NYS) Voluntary Cleanup Program (VCP) as Site No. V00532, which was administered by New York State Department of Environmental Conservation (NYSDEC or Department). Upon NYSDEC's decision to terminate the VCP statewide in 2018, the Site was incorporated into an Order on Consent and Administrative Settlement, Index No. CO 0-20180516-519, effective July 23, 2018 (the Order on Consent), as Site No. 231109.

Figure 2 shows the location and boundaries of this Site. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement(s) provided in Appendix A.

At the time of the development of this ISMP, some contaminated material remains at the Site, which is hereafter referred to as "remaining contamination." Institutional and engineering controls (ICs and ECs) have been incorporated into the interim Site remedy to control exposure to remaining contamination to help ensure protection of public health and the environment (Figure 3). Environmental Easement(s) granted to the NYSDEC and recorded with the New York County Clerk require compliance with this ISMP and all ECs and ICs placed on the Site.

This ISMP was prepared to manage remaining contamination at the Site until remedial action at OU-2 has been completed, and the development of the final Site Management Plan

(SMP) is warranted, or the Environmental Easement(s) are extinguished in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. The Environmental Easement(s), which will be included in Appendix A upon execution will only apply to on-site OU-1 properties during this interim stage and will not apply to off-site OU-1 properties or to the OU-2 property. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor(s) of the Environmental Easement(s) and the grantors' successors and assigns. This ISMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This ISMP details the Site-specific implementation procedures that are required by the Environmental Easement(s). Failure to properly implement the ISMP is a violation of the Environmental Easement(s), which is grounds for revocation of the Certificate of Completion (COC).
- Failure to comply with this ISMP is also a violation of ECL, 6 New York Codes, Rules and Regulations (NYCRR) Part 375 (NYSDEC 2006), and the Order on Consent for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in NYS. A list of contacts for persons involved with the Site is provided in Appendix B.

Parsons has prepared this ISMP on behalf of Consolidated Edison Company of New York, Inc. (Con Edison) and in accordance with the requirements of the NYSDEC's Division of Environmental Remediation (DER)-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, the NYSDEC SMP Template, dated December 2020, and guidelines provided by the NYSDEC. This ISMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement(s) for the Site.

## 1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the ISMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change in Site conditions. In accordance with the Environmental Easement(s) for the Site, the NYSDEC project manager will provide a

notice of any approved changes to the ISMP and append these notices to the ISMP that is retained in its files.

### 1.3 Notifications

Notifications will be submitted to the NYSDEC by property owner(s) for the on-site OU-1 properties in accordance with NYSDEC's DER–10 as agreed to in the Environmental Easements(s). Notifications by the property owner(s) for the off-site OU-1 and OU-2 properties are not required at this interim stage.

The following list includes reasons for notification to the NYSDEC:

1. 60-day advance notice of any proposed changes in Site use that are required under the terms of the Order on Consent, 6 NYCRR Part 375 and/or ECL.

2. 7-day advance notice of any field activity associated with the remedial program.

3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.

4. Notice within 48 hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

5. Notice within 48 hours of any non-routine maintenance activities.

6. Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

7. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days and describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this ISMP will include the following notifications:

1. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Order on Consent and all approved work plans and reports, including this ISMP.

2. Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B.

**Table 1: Notifications***

| **Name** | **Contact Information** | **Required Notification**** |
|---|---|---|
| NYSDEC Project Manager<br>Greta White | 518-402-2029<br>greta.white@dec.ny.gov | All Notifications |
| NYSDEC Project Manager Supervisor<br>Amen Omorogbe | 518-402-9662<br>amen.omorogbe@dec.ny.gov | All Notifications |
| NYSDEC Site Control | TBD | Notifications 1 and 8 |
| NYSDOH Project Manager<br>Anthony Perretta | 518-402-7860<br>anthony.perretta@health.ny.gov | Notifications 4, 6, and 7 |

* Notifications are subject to change and will be updated as necessary.

** Numbers in this column reference the numbered bullets in the notification list in this section.

# 2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

## 2.1 Site Location and Description

The Site is located in New York, New York County, New York, and occupies portions of Blocks 1091, 1092, 1093, and 1107 on the Manhattan Tax Map (see Figure 2). The Site is an approximately 6-acre area and is bounded by West 46th Street to the north, West 44th Street to the south, 11th Avenue to the east, and the Hudson River to the west. The boundaries of the Site are more fully described in Appendix A – Environmental Easement(s).

The owner(s) of the Site parcel(s) related to on-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1092, Lot 16)

Manhattan Mini Storage, LLC (Block 1092, Lot 7R)

Hudson River Park Trust (Block 1107, Lot 30)

NYS Department of Transportation (Block 1107, Lot 21)

The operator(s) of the Site parcel(s) related to on-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1092, Lot 16)

Manhattan Mini Storage, LLC. (Block 1092, Lot 7R)

Intrepid Museum Foundation (Block 1107, Lot 21 and 30)

The owner(s) of the Site parcel(s) related to off-site OU-1 at the time of issuance of this ISMP is/are:

Nubee Corp. (Block 1091, Lot 1)

589 11th Management Corp. (Block 1092, Lot 29)

Carroll L. Cartwright, Georgette Nichols (Block 1092, Lot 30)

599 11th Ave. LLC (Block 1092, Lot 36R)

The operator(s) of the Site parcel(s) related to off-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1091, Lot 1)

589 11th Management Corp. (Block 1092, Lot 29)

Carroll L. Cartwright, Georgette Nichols (Block 1092, Lot 30)

599 11th Ave. LLC (Block 1092, Lot 36R)

The owner(s) of the Site parcel(s) related to OU-2 at the time of issuance of this ISMP is/are:

NYS Department of Transportation (Block 1093, Lot 9R)

The operator(s) of the Site parcel(s) related to OU-2 at the time of issuance of this ISMP is/are:

Intrepid Foundation (Block 1093, Lot 9R)

## 2.2 Physical Setting

### 2.2.1 Land Use

The former West 45th Street Gas Works Site occupies portions of Tax Blocks 1091, 1092, 1093, and 1107 from West 44th to West 46th Street, between 11th Avenue and the Hudson River in New York, New York. The Site has been divided into two operable units, OU-1 and OU-2. OU-1 is composed of the Tax Block 1091 Lot 1, Tax Block 1092 Lots 7R , 16, 29, 30, and 36R, and Tax Block 1107 Lots 21 and 30. OU-2 is composed of Tax Block 1093 Lot 9R.

Within the on-site OU-1, Tax Block 1092 Lot 7R consists of a multiple-story (with basement) concrete building used primarily as warehouses or storage. Based on a review of New York City building records, the buildings on Lot 7R have basements that are used on a limited basis as a boiler room and book vault. United Parcel Service (UPS) currently operates Tax Block 1092 Lot 16, which is covered with asphalt and used for truck parking and fueling. UPS

currently maintains gasoline and diesel fuel pumps and underground storage tanks (USTs) on the lot. Tax Block 1107 is a portion of the existing waterfront located west of Blocks 1092 and 1093. The area is currently occupied by the West Side Highway and piers along the Hudson River. The Intrepid Sea, Air, and Space Museum visitors' center is located to the north.

Based on a review of New York City building records, within the off-site OU-1, Tax Block 1091 Lot 1 consists of a multiple-story concrete building used primarily as warehouses operated by UPS and owned by Nubee Corp. The multi-story brick buildings located on Block 1092, Lots 29, 30, and 36R are operated by a pub and other commercial businesses.

Within OU-2, Tax Block 1093 Lot 9R contains a parking area and pedestrian bridge associated with the Intrepid Sea, Air, and Space Museum. The Site is zoned industrial.

### 2.2.2 Geology

The bedrock underlying the Site is the Manhattan Formation, composed of gray to black mica schist that has been intensely folded and deformed by two major geologic episodes of mountain building during the Paleozoic Era, more than 200 million years ago. The depth of the bedrock surface in the mid to lower west Manhattan area varies from more than 150 feet below ground level in the Chelsea section to near the surface in the Clinton area (AKRF 1994).

These original sedimentary deposits that underlie the Site and much of the rest of the region include poorly sorted glacial deposits (till); ancient beach sand; organic materials, such as peat, wood fragments, and shells; and riverine silt and clay. Since the settlement of the metropolitan area, these natural deposits under the Site have been covered with miscellaneous fill up to 45 feet thick, primarily comprised of ash, excavated soils, refuse, and general debris. Based on historical knowledge of construction methods for this area, the shoreline was built out into the Hudson River in stages along much of the Route 9A corridor. Relieving platforms or bulkheads were constructed, and fill was placed behind them to stabilize the shoreline. As the bulkheads deteriorated over time, new bulkhead structures were constructed water-ward of the existing structures, and fill was again placed behind the new bulkhead structures. This process resulted in the shoreline gradually stepping out further into the Hudson River, which has left some of the relieving platforms and bulkheads remaining under existing roadways.

**Operable Unit 1**

Based on soil borings advanced during the OU-1 site characterization (SC), the OU-1 portion of the Site is underlain by approximately 3 to 12 feet of fill material consisting of sand, gravel and silt with cobbles, cement and brick fragments. In general, deposits of fine to medium grained sand, silt and some gravel underlie the fill. A peat layer was observed ranging from 1 to 4 feet thick in soil borings advanced in the vicinity of the off-site UPS building (Block 1091, Lot 1), which is located between West 43rd and West 44th Streets. Bedrock elevations for the Site following completion of initial site investigation activities is shown on **Figure 4**. A north-south cross-section of the Site is shown on **Figure 5-1** (cross section A-A'), and two east-west cross sections (B-B' and C-C', respectively) are shown on **Figures 5-2** and **5-3**.

Suspected bedrock was encountered at depths between 25 and 34 feet below ground surface (bgs) within the UPS parking lot (Block 1092, Lot 16), which is elevated in relation to the surrounding areas. Bedrock was generally shallower (between 2 and 23.5 feet bgs) along the 43rd Street, 44th Street, 45th Street, 46th Street, 11th Ave and Route 9A sidewalks. Inferred bedrock elevations under the Manhattan Mini Storage and Time Moving & Storage Warehouse buildings (Block 1092, Lot 7R) are significantly shallower than bedrock elevations where the former gas holders were located. A bedrock trough appears to be present in the vicinity of monitoring well MW-20 and soil boring SB-48. The bedrock trough appears to start in the general vicinity of the former gas holders and terminates under the UPS building (Block 1091, Lot 1) prior to West 43rd Street. Sharp variations in bedrock depths may be due to the extreme folding in the natural bedrock that is known to underlie Manhattan. These variations may also be attributed to man-made alterations to bedrock during construction (e.g., streets/utility corridors, subsurface structures, and building foundations).

**Operable Unit 2**

Soil borings were advanced within the OU-2 portion of the Site during the OU-2 SC and pre-design investigation (PDI) fieldwork to characterize subsurface conditions. Bedrock, identified as gneissic schist to schist, was encountered at significantly varying depths during the SC and PDI. Bedrock elevations determined during the PDI were used to refine the bedrock surface discerned during the previous SC activities. Table 2 and Figure 6 detail bedrock elevations based on soil boring and test pit locations. Bedrock highs above 15 feet bgs were

observed in the northwestern, northeastern, and southwestern corners of the Site. A bedrock high is observed between 12.5 and 16 feet bgs in the center of the Site, directly below the interior portion of the former large gas holder. The bottom of the large gasholder appears to be a combination of concrete and bedrock. Bedrock depths encountered within the large gasholder appear to be deeper along the perimeter of the holder (between 35 and 45 feet bgs), forming a bedrock trough in a ring shape around the entirety of the bedrock high. Cross sections which transverse the Site from east to west and from north to south are shown on **Figures 7-1** through **7-4**.

Site specific boring logs generated following investigations at both OU-1 and OU-2 are provided in Appendix C.

### 2.2.3 Hydrogeology

The groundwater of Manhattan is closely connected with the water bodies that surround the island. Although many factors affect the movement of groundwater through soil, gradients within the subsurface material are generally the most important of these. The permeability of soils and fill vary widely over a small distance in the Site; moreover, the abandoned bulkheads and subsurface structures also affect water movement. Increasing distance inland from the Hudson River decreases the influence of the river on groundwater. The exact groundwater flow conditions existing at any given place in the project corridor depend on the subsurface conditions at that location.

Manhattan's drinking water is obtained from reservoirs located greater than 25 miles north of the city. No drinking water supply wells were identified in the vicinity of the Site. Local groundwater use is not likely since the public water supply is readily available. Groundwater along the Route 9A corridor is highly variable, but is generally brackish to saline. Salinity has been recorded to be as low as 62 parts per million (ppm) chloride near West 26th Street and as high as 9,700 ppm chloride near the former World Trade Center, which is approximately two miles south of the Site. NYSDEC regulations define saline groundwater as having a chloride concentration of more than 250 ppm or a total dissolved solids concentration of more than 1,000 ppm.

Groundwater levels were measured at the Site in 2003, 2006, 2007, and 2012 via gauging events and tidal studies. **Table 3-1** summarizes representative data from events associated with

investigations completed for OU-1. **Table 3-2** summarizes representative data from events associated with investigations completed for OU-2. Data from the 2003, 2006, and 2007 events were similar and indicate groundwater flow beneath the Site is to the west towards the Hudson River. Overall, groundwater maintains a general flow towards the west. The mounding effect observed within the footprint of the large gasholder increased from 2003 to 2012. A sitewide groundwater contour map based on the 2007 gauging event is presented on **Figure 8**.

Artesian conditions were encountered within OU-2 during 2012 PDI activities at borings advanced within and adjacent to the southern and southwestern portions of the former large gas holder. Specifically, these conditions were observed during and subsequent to boring advancement at CONT-5, CONT-7, PDI-18, PDI-21, PDI-22, PDI-26, MW-23, MW-24, and PW-1. Additionally, former MW-5, located in the southwestern portion of the former large gas holder, became artesian subsequent to its redevelopment. As presented in **Table 3-2**, groundwater levels measured in MW-5, MW-24, and PW-1 were above grade. A groundwater contour map for OU-2 based on the 2012 gauging event is presented on **Figure 9**.

Hydraulic conductivity testing in the form of slug tests, step drawdown, and constant rate pumping tests were performed in April and June 2012 to further characterize hydrogeologic conditions within OU-2. The aquifer testing data obtained during the PDI indicate that the aquifer at the Site is heterogeneous and anisotropic in terms of hydraulic properties. Transmissivity values derived from the constant rate pumping test at PW-1 range from 122 to 239 feet squared per day, with PW-1 recovery data yielding a value of 523 feet squared per day. Dividing this range in transmissivity values by saturated thicknesses ranging from 10 to 30 feet yields average hydraulic conductivity of 3 to 20 feet per day. The slug test and step drawdown test performed in well MW-22, and the slug test performed in MW-23, indicate that the hydraulic conductivity in the immediate vicinities of these wells is substantially higher than PW-1, perhaps by one or two orders of magnitude. Conversely, the slug test results for other wells indicate lower conductivities in some areas, which could be associated with the presence of non-aqueous phase liquid (NAPL).

The unconfined specific yield of the saturated fill material is estimated to range from approximately 0.02 to 0.31 based on pumping tests results, with NAPL-impacted portions expected to have lower specific yields than unimpacted areas. The wide range of storage term values derived from the constant rate pumping tests may be due to the presence or absence of

NAPL in the pore spaces, the variable nature of the fill material in the large gas holder, the presence of locally confined or semiconfined conditions within a primary unconfined water bearing zone, and/or the relatively short duration of the constant rate pumping test.

A tidal survey was conducted in March 2006 as part of the OU-1 SC to evaluate the effects that tidal fluctuations in the Hudson River have on the groundwater elevations and flow direction at the Site (Parsons 2006). Groundwater levels were observed over a 3-day period in three OU-2 monitoring wells and three OU-1 monitoring wells. The data, when compared to tidal fluctuations in the Hudson River, show that Site monitoring wells are not influenced by tides. The tidal survey data is summarized in **Table 4**.

Groundwater monitoring well construction logs are provided in Appendix C.

## 2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

Previous investigations conducted at the Site include historical research to evaluate ownership, occupancy, use, and operations over time (including pre-gas works use, use during gas works operation, and post-gas works use). The West 45th Street Gas Works, a manufactured gas plant (MGP), operated from 1877 to 1913. Gas was manufactured using the coal gas process from 1877 to the mid–1890s prior to switching to a carbureted gas process. A complete history of the former MGP site is presented in a report titled *West 45th Street Gas Works, Site History Report* (Parsons 2002). The approximate locations of the former MGP structures are shown on **Figure 2**.

Former MGP structures located on OU-1 included a retort house, a generator house, a purifying house, and five gasholders and associated structures. Four of the gasholders each had a capacity of 375,000 cubic feet, and one holder had a capacity of approximately 184,000 cubic feet. Most buildings and structures associated with the former MGP facility were removed in 1913. Following demolition of the MGP structures, portions of the property were sold to other owners.

Former MGP structures located on OU-2 included two gasholders and associated structures, and a purifying house. The plant operated from 1877 to the mid–1890s using the coal

gas process prior to switching to a carbureted gas process. Although most of the buildings and structures associated with the MGP facility were removed in 1913, the large tar-sealed gasholder located at OU-2 was used until 1965. The height of the large gasholder appears to have increased from 90 feet in 1911 to 276 feet in 1930, expanding the holder's capacity from 2,000,000 cubic feet to 7,000,000 cubic feet before it was decommissioned and demolished in the mid-1960s. The subsurface remnants of the gasholders are still believed to be present. Following demolition of the aboveground structures, Con Edison used the Site for heavy equipment storage and a parking lot. In 1995, Con Edison constructed a natural gas refueling station on the northeast corner of OU-2 which is no longer present today. In 2000, the New York State Department of Transportation (NYSDOT) acquired the OU-2 portion of the Site from Con Edison.

A Site reconnaissance was conducted in April 2002 to ascertain current conditions and neighboring property use. Federal, state, and local databases were reviewed to assess other sites in the vicinity that may be impacting the former gas works Site and neighboring properties. Research undertaken included review of in-house documents and photographs provided by Con Edison as well as materials gathered at the Municipal Archives of the City of New York, Municipal Reference and Research Center of the City of New York, New York City Recorder of Deeds office, New York City Department of Buildings, New York Public Library, Library of Congress, NYSDEC, the Environmental Protection Agency (EPA), and various web sites that post historical maps and journal articles. Environmental Data Resources, Inc. (EDR) compiled the radius search data for the Site (2002). Results of these efforts are documented in a report titled *West 45th Street Gas Works, Site History Report* (Parsons 2002).

### 2.3.1 Operable Unit 1

Field investigations at OU-1 were conducted in accordance with the NYSDEC and New York State Department of Health (NYSDOH)-approved *Site Characterization Work Plan (SCWP) for the Former West 45th Street Works Site* (Parsons 2005) and the *Remedial Investigation Work Plan* (RIWP) (Parsons 2006). Field investigation activities completed during SC and remedial investigation (RI) activities included soil, soil gas, groundwater, and free product sampling via soil boring and monitoring well installation and test pitting. The *Remedial Investigation Report* (Parsons 2011) summarizing the field investigation results was submitted to NYSDEC, which approved it on February 4, 2011. The information gathered during the field

investigation activities at OU-1 is summarized in the *Remedial Action Work Plan* (RAWP) submitted in May 2015 (Parsons). Soil boring, soil gas, and groundwater monitoring well locations completed at OU-1 as part of the OU 1 investigations are presented on Figure 4.

During SC and RI field activities, a total of three test pits and 27 soil borings were installed at OU-1. Two soil samples were collected from each soil boring location and submitted for laboratory analysis of target compound list (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), cyanide, and target analyte list (TAL) metals. Ninety soil samples were submitted for laboratory analysis.

Nine groundwater monitoring wells were installed in soil boring locations. Two groundwater sampling events were conducted during SC and RI activities. Groundwater sampling associated with the SC was completed in March 2006, and groundwater sampling associated with the RI was completed in May 2007. Groundwater samples were submitted for laboratory analysis of TCL VOCs, TCL SVOCs, cyanide, and TAL metals. Laboratory analytical results for inorganics detected in soil samples collected during OU-1 investigation activities are presented in Table 5.

Soil gas samples were collected from five locations in OU-1 during SC and RI field activities and submitted for laboratory analysis of VOCs.

A tidal study was completed during SC field activities to assess the effect of tidal fluctuations on groundwater levels at OU-1. Pressure transducers were placed in six Site groundwater monitoring wells for a period of 72 hours and continuously collected data. No tidal influences were detected in five of the monitoring wells, and a minor (0.1 to 0.2 foot) tidal oscillation was detected in one monitoring wells (MW-9).

Based on the results of the SC and RI activities completed at OU-1, the following conclusions were noted:

- Subsurface soil at OU-1 is impacted by former MGP operations, primarily with benzene, toluene, ethylbenzene, and xylenes (BTEX) and polyaromatic hydrocarbons (PAHs). The greatest impacts to soil were found in areas where visible NAPL was encountered in the subsurface.

- Remnants of former gasholder structures are present within the UPS parking lot. Most impacted soils at OU-1 were encountered outside and along the perimeter of the

former gasholders, especially the small gasholder, and within an isolated area extending south of the small gasholder.

- Impacted soils encountered at OU-1 appear to be limited to depths greater than 9 feet bgs, except for solidified coal tar observed in an isolated area along the northern sidewalk of West 44th Street. Solidified coal tar was observed in this area at depths of between 3 and 5 feet bgs.

- Groundwater at OU-1 appears to be impacted primarily with BTEX and PAHs, with the highest concentrations encountered near the former gasholders.

- There is no current pathway for human exposure to impacted soils or groundwater at OU-1 during day-to-day operations. However, exposure to impacted soils or groundwater may be possible during intrusive activities (e.g., repair of underground utilities or structures, potential future construction).

- Further investigation of potential soil vapor intrusion within the UPS building is not warranted since (1) MGP source materials were not encountered in soil borings conducted within the building basement, (2) the area of the building located nearest to NAPL-impacted soils associated with OU-1 is operated primarily as a parking garage and does not contain offices, and (3) results indicate that the western portion of the UPS building where offices are present has not been impacted by former MGP operations at OU-1.

### 2.3.2 Operable Unit 2

Investigations have been conducted at OU-2 to characterize MGP-related impacts in soil, groundwater and soil gas media. These investigations included SC activities in 2003, in 2006 as a component of work conducted at OU-1, and during the PDI conducted in 2012. Soil boring, soil vapor, test pit and groundwater MW locations completed at the Site as part of the PDI and prior SC are presented on **Figure 10**. The data collected during these investigations are presented in the *Site Characterization Report* (SCR), *Data Summary Report* (DSR), and *PDI Summary Report* (respectively, Parsons 2003, 2006, and 2012).

During SC and PDI field activities, 13 test pits and 63 soil borings were installed at OU-2. One to two soil samples were collected from each soil boring location and submitted for laboratory analysis of TCL VOCs, TCL SVOCs, cyanide, and TAL metals. A total of 91 soil samples were submitted for laboratory analysis.

A total of 13 groundwater monitoring wells were installed in soil boring locations. Groundwater sampling associated with SC and PDI activities was completed in May 2003, May 2007, and June 2012. Groundwater samples were submitted for laboratory analysis of TCL

VOCs, TCL SVOCs, cyanide, and TAL metals. Artesian conditions were encountered during installation of monitoring wells during PDI field activities. As part of the scope of work completed during the PDI, a series of slug tests, step drawdown, and constant rate pumping tests were performed. Several monitoring wells, as indicated in **Table 3-2**, were abandoned following investigation activities.

Soil gas samples were collected from three locations at OU-2 during PDI field activities and submitted for laboratory analysis of VOCs.

During soil boring activities completed during implementation of the PDI, select soil samples were submitted for geotechnical analysis. Completed geotechnical analyses included soil classification via Unified Soil Classification System (USCS), moisture content, sieve analysis (with and without hydrometer), Atterberg limits, specific gravity, organic content, and soil pH.

Based on the results of SC field activities, the following conclusions were noted:

- VOCs (primarily BTEX), SVOCs (primarily PAHs), and metals were detected in site soils and groundwater at concentrations exceeding applicable soil cleanup objectives. Elevated VOC and SVOC concentrations generally coincided with detections of visual NAPL in the subsurface along the perimeters of the former gas holders and in the vicinity of the former tar tank/skimmer pump structures.

- VOCs (primarily BTEX), SVOCs (primarily PAHs), and metals were detected in Site groundwater at concentrations exceeding groundwater quality standards and guidance values.

- Two soil samples exhibited hazardous characteristic of toxicity due to lead. One soil sample collected from beneath a NAPL seam in test a pit (TP-2) exhibited the hazardous characteristic of toxicity due to benzene.

- NAPL was observed in the subsurface throughout OU-2 in non-continuous intervals at depths ranging from 1 to 35 feet bgs. In general, NAPL was observed along the outside perimeter of the gasholders in the vicinity of the former tar tanks/skimmer pumps. NAPL was detected in six of 16 soil boring/test pit locations conducted within the former gasholders and was limited to the outside edge of the structures. At four of the six locations inside the gasholders, NAPL was encountered at depths greater than 23 feet bgs.

- Approximately 3.6 feet of dense non-aqueous phase liquid (DNAPL) was encountered at the bottom of monitoring MW-6 during groundwater sampling activities. NAPL was not encountered in the remaining five monitoring wells. The

shallowest occurrence of NAPL was in the MW-1 and TP-1 area. This area was disturbed during the construction of the pedestrian bridge, and this disturbance is likely the reason for the shallow NAPL observations.

- Fingerprint results of a NAPL-saturated soil sample and of a DNAPL sample collected from the bottom of monitoring well MW-6 indicated the material is probable residue from a former MGP operating the carbureted water gas process.

- Based on the results of PDI field activities, the following conclusions were noted:

- MGP-related impacts were observed from 3.5 to 41 feet bgs, primarily along and adjacent to the perimeter of the former gasholder foundation walls.

- Remnants of the former MGP structures and associated equipment are present on the property as observed during test pitting and boring advancement.

- The overburden in the subsurface of OU-2 generally consists of fill ranging from 0 to 41 feet thick. Competent bedrock was encountered at depths ranging from approximately 8 to 60 feet bgs. Generally, it appears that some bedrock was removed to facilitate the construction of the large gasholder foundation wall; however, the depth of bedrock removal is not consistent across OU-2.

- Groundwater was encountered beneath OU-2 at elevations ranging from 3.36 feet above mean sea level (AMSL) on the west side of OU-2 to 11.59 feet in the center and north side of OU-2. Although groundwater flow is generally toward the Hudson River, mounding effects and some artesian conditions have been observed inside of the former large gasholder. Due to the varied fill material within and adjacent to the former large gasholder, anisotropic (directionally dependent) hydraulic properties are prevalent across OU-2.

- NAPL was encountered at test pit TP-PDI-9 and 30 boring/well locations during implementation of the PDI. Additionally, NAPL accumulation was observed in monitoring wells MW-3, MW-4, and MW-6.

- VOCs were detected at concentrations exceeding their Commercial Soil Cleanup Objectives (CSCOs) in three of 54 soil samples collected during the PDI.

- SVOCs were detected at concentrations exceeding their CSCOs in seven of 54 soil samples collected.

- Ten VOCs and seven SVOCs potentially related to former MGP activities were detected in groundwater at concentrations exceeding their respective Class GA ambient water quality standards and guidance values (AWQSGVs).

- Cyanide was not detected above its CSCO in any of the 54 soil samples collected during the PDI. Cyanide was detected at concentrations exceeding its AWQSGV in MW-21 and MW-23.

- The liquid waste characterization sample and one of the 10 soil waste characterization samples exhibited benzene and Toxicity Characteristic Leaching Procedure (TCLP) benzene concentrations that exceeded the regulatory limit for a hazardous waste.

### 2.3.3 Emerging Contaminant Sampling in Groundwater

In February 2020, groundwater samples were collected from two Site monitoring wells for laboratory analysis of emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). Groundwater monitoring wells MW-11 (upgradient) and MW-16 (downgradient) were selected for sampling. The conclusions from emerging contaminant sampling are summarized below:

- There are no known historical Site operations that have used or could have generated these contaminants.
- The highest concentrations of PFAS compounds were found in the monitoring well upgradient of the Site.
- Perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) at these concentrations are commonly encountered in mixed industrial and commercial use areas such as this. The Site is located within an area of commercial use with the presence of off-site locations (e.g., truck repair and document shredding facilities on West 45th Street) that are potential sources for the detected PFAS in the area of the Site.

Emerging contaminant sampling results are documented in the *West 45th Street Former Gas Works Site – Emerging Contaminants Sampling Summary Letter Report* (Parsons 2020).

## 2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the OU-1 Decision Document dated September 2016 and OU-2 Decision Document dated July 2021 are as follows:

**Groundwater**

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water (OU-1), and remove the source of ground- or surface water contamination (OU-2).

**Soil**

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

**Soil Vapor**

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings.

## 2.5 Remaining Contamination

### 2.5.1 Operable Unit 1 - Soil

During the test pit excavations at OU-1, below grade remains of brick walls were observed to be present at all five former gasholders. Soil borings installed within the former gasholders identified potential steel-lined bottoms in the larger gasholders. However, based on field observations at soil boring SB-33, a holder bottom may not be present in the small gasholder. NAPL was observed near the former small gasholder.

NAPL was encountered outside of the gasholders immediately north of West 44th Street and appears to extend south beneath West 44th Street, generally consistent with the apparent

bedrock trough in this area. However, NAPL was not observed further to the south beneath the UPS building located between West 44th and West 43rd Streets. NAPL was also observed in MW-9, but its source is unclear. Solidified coal tar material was noted in soil borings SB-43 and SB-44, which are located along West 44th Street and adjacent to two of the larger gasholders (Figure 4). Forensic hydrocarbon fingerprinting of both the solidified coal tar and NAPL materials observed at soil borings SB-39, SB-43 and MW-9 were similar in nature to carbureted water gas tar, suggesting that they originated from former MGP operations. Other than the gasholders, no other remnants of former MGP structures were encountered during the field investigation.

VOCs and SVOCs, respectively, detected in soil samples collected during the field investigation activities is shown on Figure 11 and Figure 12. Laboratory analytical results for VOCs, SVOCs, and inorganics detected in soil samples collected during OU-1 investigation activities are presented in Table 5. Total VOC concentrations in all subsurface soil samples ranged from non-detect to 5,771 ppm. Total SVOC concentrations in all subsurface soil samples ranged from non-detect to 2,867 ppm. The highest total VOC and SVOC concentrations were typically detected in soil samples collected in the vicinity of the former gasholders and an apparent bedrock trough that extends south of the Site across West 44th Street. The three highest total VOC concentrations and three of the four highest total SVOC concentrations were detected at soil boring locations SB-30, SB-39 and SB 48. These locations are near the former gasholders or are located within the apparent bedrock trough. Soil samples collected from within the former large gasholders generally did not exceed the Unrestricted Soil Cleanup Objectives (USCOs) or Restricted Soil Cleanup Objectives (RSCOs) for commercial use for VOCs or SVOCs. However, several USCOs for VOCs and SVOCs and a couple of RSCOs for commercial use for SVOCs were exceeded in a soil sample collected from the former small gasholder. Outside of the soil samples that are located within close proximity to the former gasholders at OU-1 and the bedrock trough, two other locations (MW 19 and MW-7) contained more than one VOC concentration above the USCOs. However, these locations did not exceed the RSCOs for commercial use. Monitoring well MW-19 is situated immediately adjacent to the former gasholder at OU-2. Monitoring well MW-7 is situated in the vicinity of the former retort house, generator house, and condenser based on information from the Site History Report (Parsons 2002).

Metals were detected throughout OU-1 in soil at concentrations exceeding CSCOs. Analytical results for metals in soil indicated six metals (arsenic, barium, copper, lead, mercury and cyanide) were detected at concentrations exceeding the CSCOs. The exceedances were present throughout the Site with no discernable pattern and are consistent with urban fill materials.

### 2.5.2 Operable Unit 1 – Groundwater

Laboratory analytical results for VOCs, SVOCs, and metals detected in groundwater samples collected during the May 2007 sampling event are presented on Table 6-1. Thirteen VOCs, 20 SVOCs, and 21 metals were detected in the groundwater samples collected during this sampling event.

BTEX compounds, plus isopropylbenzene, were detected at concentrations exceeding their applicable AWQSGVs in six of the 11 monitoring wells (MW-5, MW-7, MW-8, MW-9, MW-19 and MW-20) sampled during the May 2007 sampling event. Concentrations exceeding AWQSGVs for SVOCs were detected in eight of the 11 monitoring wells sampled during the May 2007 event. No SVOCs were detected above AWQSGVs in monitoring wells MW 11, MW-16, and MW-55 during the May 2007 sampling event. Five of the 21 detected metals (i.e., antimony, iron, magnesium, manganese and sodium) were detected at concentrations exceeding AWQSGVs. The presence of these metals can be attributed to urban fill that was used at OU-1.

In general, groundwater impacts are primarily limited to the east of 12$^{th}$ Avenue, and the highest VOC and SVOC concentrations are detected in monitoring wells MW-9 and MW-19. VOC and SVOC concentrations for the May 2007, March 2006, and May 2003 sampling event are presented on Figure 13. Laboratory analytical results for groundwater samples collected during the March 2006 and May 2003 sampling events are presented on **Table 6-2** and **6-3**, respectively. Monitoring well MW-9 is located in the vicinity of the UPS refueling area and former gasholders at OU-1, while MW-10 is located near the large gasholder at OU-2. Methyl tert-butyl ether (MTBE) was detected in monitoring wells MW-5, MW-9 and MW-10 during the May 2007 monitoring event. Two of these monitoring wells, MW-9 and MW-10, are downgradient of the UPS refueling area based on groundwater contours generated during the May 2007 gauging event (**Figure 8**).

### 2.5.3 Operable Unit 1 – Soil Vapor

Soil gas analytical results collected as part of OU-1 Investigation Activities are presented on **Table 7**. Thirty-seven compounds were detected in the soil gas samples at concentrations ranging from 0.33 micrograms per cubic meter (µg/m3) to 610 µg/m3. The highest total concentration of VOCs was detected in the sample collected at 1 foot bgs at location MW-9. Additionally, this is the only soil gas sample in which MTBE was detected. As previously noted, monitoring well MW-9 is located in the vicinity of the UPS fueling area. VOCs including non-MGP related compounds (Freon®, chlorinated compounds or MTBE) were detected in each of the soil gas samples collected. In general, VOC concentrations were higher in the shallow soil gas sample (1 foot bgs) at soil gas locations SB-27 and SG 2, while higher VOC concentrations were detected in the deeper samples at SG-3 and MW-9.

### 2.5.4 Operable Unit 2 – Soil

The following descriptions of remaining contamination describe pre-remediation conditions for OU-2. These conditions will change once the final remedy has been completed for OU-2.

**Photoionization Detector Readings**

Photoionization detector (PID) readings for soil samples collected during SC and PDI soil boring and monitoring well installation activities ranged from 0.0 to 9,999 ppm. PID readings above 1,000 ppm (0.1%), indicating the presence of impacted materials, were detected at the following SC boring locations and intervals:

- SB-5 (7-12 feet bgs; 15-16 feet bgs)
- SB-10 (33-34 feet bgs)
- SB-20 (34-35 feet bgs)
- SB-21 (20-21 feet bgs)
- SB-22 (16-17 feet bgs)
- MW-3 (23-24 feet bgs)

PID readings above 1,000 ppm (0.1%), indicating impacted materials, were detected at the following PDI boring locations and intervals:

- PDI-2 (5-30 feet bgs)
- PDI-3 (7-9 feet bgs)

- PDI-5 (35-40 feet bgs)
- PDI-7 (13-19, 25-27, 29-31, 33-35, and 37-41.5 feet bgs)
- PDI-15 (10-12 feet bgs)
- PDI-17 (37-37.5 feet bgs)
- PDI-21 (20-40 feet bgs)
- PDI-22 (20-25 and 30-35 feet bgs)
- PDI-23 (15-20 feet bgs)
- PDI-24 (17-19 and 21-25 feet bgs)
- PDI-29 (24-27 and 29-31 feet bgs)
- MW-24 (5-7 feet bgs)
- PW-1 (5-10 feet bgs)

The maximum PID readings (9,999 ppm) were detected at PDI-2 (5-20 feet bgs), PDI-7 (41-41.5 feet bgs), and PDI-21 (25-30 feet bgs).

**Soil Grab Samples**

Two grab samples of visibly impacted materials, TAR DRIP and PUR-1, were collected during SC activities. Four VOCs were detected in TAR DRIP, three of which (ethylbenzene, m,p-xylene, and o-xylene) were found in exceedance of USCOs. No VOCs were found in exceedance of CSCOs. No VOCs were detected in PUR-1. Thirteen SVOCs, all of which were PAHs, were detected in PUR-1. Five PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene) were detected in exceedance of their respective CSCOs. Laboratory analytical results associated with grab samples collected as part of OU-2 SC field activities are presented on Table 8 (VOCs and SVOCs) and Table 9 (inorganics).

**VOCs in Soils**

Seven individual VOCs were detected in the soil boring samples collected during SC activities. At least one BTEX compound was detected above CSCOs in three soil samples. Maximum total VOC concentrations were detected in soil collected from SB-20 at a depth of 34 to 35 feet bgs. In general, the BTEX concentrations exceeded CSCOs in the soil samples where visual NAPL was observed in the subsurface along the perimeters of the former gasholders and in the vicinity of the former tar tank/skimmer pump structures.

Twenty-one individual VOCs were detected as least once in soil samples collected during PDI activities. Five VOCs (benzene, ethylbenzene, toluene, 1,2,4-trimethylbenzene, and m-p-xylene) were detected at concentrations exceeding their respective CSCOs. Exceedance of

CSCOs were found in three samples (PDI-3 [7 to 9 feet bgs], PDI-17 [37 to 37.5 feet bgs], and PDI 24 [23 to 25 feet bgs]). Maximum total VOC concentrations were detected in soil collected from PDI-3, at a depth of 7 to 9 feet bgs. VOC analytical results exceeding CSCOs for the soil samples collected during SC and PDI activities are presented in **Table 8** and on **Figure 14**.

**SVOCs in Soils**

A total of 23 SVOCs were detected at least once in soil boring samples collected during SC activities. Eight PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene) were detected at concentrations exceeding their respective CSCOs in at least one soil sample. No SVOCs were found in exceedance of CSCOs. Maximum total SVOC concentrations were detected in soil collected from SB-22 at a depth of 16 to 18 feet bgs. In general, PAH concentrations were found in exceedance of CSCOs in locations where NAPL was observed in the subsurface, primarily along the perimeters of the former gasholders and in the vicinity of the former tar tank/skimmer pump structures.

A total of 23 SVOCs were detected at least once in soil boring samples collected during PDI activities. Six PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and naphthalene) were detected at concentrations exceeding their respective CSCOs in at least one soil sample. Maximum total SVOC concentrations were detected in soil collected from PDI-24 at a depth of 23 to 25 feet bgs. Consistent with prior observations, PAH concentrations found in exceedance of CSCOs are generally observed near the estimated locations of former gasholder walls. SVOC analytical results exceeding CSCOs for soil samples collected during the SC and PDI activities are presented on **Table 8** and **Figure 15**.

**Inorganics in Soils**

A total of 23 metals were detected in the soil samples collected during SC activities. Four metals (arsenic, barium, copper and lead) exceeded their respective CSCOs in three soil samples. Cyanide was detected above CSCOs in two soil samples (PUR-1 [40 ppm] and SB-20 [93 ppm]). TCLP lead exceeded the regulatory level of 5,000 micrograms per liter (µg/L) for toxicity characteristic hazardous waste in two soil samples, SB-8 (25 to 27 feet bgs) and SB-10 (33 to 35

feet bgs). Analytical results for metals and TCLP lead detected during SC activities are presented on **Table 9**.

### 2.5.5 Operable Unit 2 – Groundwater

Laboratory analytical results for VOCs, SVOCs, and metals detected in groundwater samples collected during the OU-2 groundwater sampling events are presented on **Table 10** and **Figure 16**.

**NAPL at the Time of Sampling**

During groundwater sampling activities at OU-2, each monitoring well was monitored for the presence of NAPL. As per the SC and PDI work plans, groundwater was not sampled if NAPL was observed. During SC activities, NAPL was observed in monitoring well MW-6. During PDI activities, NAPL was detected in monitoring wells MW-1, MW-3, MW-4, MW-6, and MW-24.

**VOCs in Groundwater**

Seven VOCs were detected at least once in groundwater samples during SC activities. Groundwater from each of the five wells sampled exceeded AWQSGVs for BTEX. Styrene was detected in exceedance of AWQSGVs in four wells (MW-1, MW-3, MW-4 and MW-5). Maximum total VOC concentrations were detected adjacent to the large gasholder, co-located with subsurface NAPL observations.

During the 2007 sampling event, BTEX and isopropylbenzene were detected in exceedance of AWQGSVs in monitoring well MW-5.

Eighteen VOCs were detected at least once in groundwater samples collected during 2012 PDI activities. Of these, 10 VOCs (isopropylbenzene, n-propylbenzene, styrene, 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, benzene, ethyl benzene, toluene, m/p-xylene, and o-xylene) were detected at concentrations exceeding their respective AWQSGVs. Isopropylbenzene, 1,2,4 trimethylbenzene, ethyl benzene, toluene, o-xylene, and total xylenes were detected above their respective AWQSGVs in six monitoring wells (MW-2, MW-5, MW-19, MW-21, MW-22, and MW-23). N-propylbenzene, 1,3,5 trimethylbenzene, styrene, toluene, and m/p-xylene were detected above their AWQSGVs in five monitoring wells (MW-5, MW-19,

MW-21, MW-22, and MW-23). Similar to SC activity groundwater observations, maximum concentrations occurred adjacent to the large gasholder, co-located with subsurface NAPL observations, while the lowest concentrations are observed at the most downgradient well (MW-2).

**SVOCs in Groundwater**

Fourteen SVOCs were detected at least once in groundwater samples collected during SC activities. Four PAHs (acenaphthene, fluorene, naphthalene, and phenanthrene) were detected at concentrations exceeding their respective AWQSGVs in each monitoring well sampled. Two non-PAH SVOCs (2-methylphenol [MW-1 and MW-3], 3+4-methylphenols [MW-3 and MW-4]) were detected at concentrations exceeding their respective AWQSGVs in three samples. Maximum total SVOC concentrations occurred adjacent to the large gasholder (at MW-4).

Nine SVOCs were detected at least once in groundwater samples collected during the 2007 groundwater sampling event. Two PAHs (acenaphthene in MW-2 and naphthalene in MW-5) were detected above their respective AWQSGVs.

Sixteen SVOCs were detected at least once in groundwater samples collected during PDI activities. Four PAHs (acenaphthene, fluorene, naphthalene, and phenanthrene) were detected in exceedance of their respective AWQSGVs. Two non-PAHs (2-methylphenol and 3+4-methylphenols) were detected above their respective AWQSGVs in MW-19 and MW-21. Generally consistent with previous investigations, more impacted groundwater may be found adjacent to the large gasholder, co-located with subsurface NAPL observations.

**Inorganics in Groundwater**

During SC activities, cyanide was detected at a concentration of 569 µg/L in MW-1, exceeding the AWQSGV. Cyanide was detected at concentrations exceeding AWQSGVs in two monitoring wells during PDI activities.

Eighteen metals were detected in groundwater samples collected during SC activities. Five metals (antimony, iron, manganese, sodium, and thallium) were detected in concentrations exceeding AWQSGVs. The presence of these metals can be attributed to urban fill that was used at OU-2.

Fourteen metals were detected in groundwater collected during 2007 sampling. Three metals (iron, manganese, and sodium) were detected in concentrations exceeding AWQSGVs.

No metals were found in exceedance of AWQSGVs during PDI sampling activities, and MW-5 was the only monitoring well in which any detections were observed.

### 2.5.6 Operable Unit 2 – NAPL Observations

During SC and PDI activities, soil samples were visually characterized for the presence of potential impacts (NAPL, sheen, odor, staining). During SC activities, NAPL was observed in eight test pit locations and 14 soil boring/monitoring well locations throughout OU-2. NAPL was observed at these locations in non-continuous intervals at depths ranging from 1 to 35 feet bgs.

During PDI activities, NAPL was observed in test pit location TP-PDI-9 and 30 soil boring/monitoring well locations throughout OU-2. In some instances, NAPL was not observed within extracted soil samples, but in washwater from specific intervals. Similar to SC observations, NAPL was observed at depths ranging from 3.5 to 41 feet bgs. In general, NAPL was observed along the perimeter of the gasholders in the vicinity of the former tar tanks/skimmer pumps. NAPL detected within the former gasholders was limited to the outside edge of the structures. NAPL was not observed at locations near the center of the large gasholder. NAPL was detected during SC activities at or near the bedrock surface in the southern portion of OU-2 at soil borings SB-18, SB-20 and SB-21. NAPL was detected during PDI activities at or near the bedrock surface in the southern portion of OU-2 at soil borings PDI-31, PDI-21, PDI-20, PDI-17, PDI-16, PDI-15, and CONT-4. Visual NAPL observations are summarized on **Figure 17**.

On May 13, 2003, approximately 3.6 feet of DNAPL was encountered at the bottom of monitoring well MW-6 during groundwater sampling activities. NAPL was not observed in any of the remaining wells on May 13, 2003. On October 16, 2003, small amounts of DNAPL (between 0.03 and 0.20 foot) were encountered in monitoring wells MW-4, MW-5 and MW-6. NAPL was observed in monitoring wells MW-4 and MW-6 at OU-2 prior to implementation of the tidal study in 2006.

Where encountered, NAPL samples were collected from wells during PDI sampling activities and submitted to Chemtech for NAPL physical characteristics analysis. Approximately one liter of highly weathered and viscous NAPL was removed from both MW-4 and MW-6. The results of NAPL analysis are summarized in **Table 11**.

# 3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

## 3.1 General

Since remaining contamination exists at the Site, ICs and ECs are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at OU-1 and OU-2. The IC/EC Plan is one component of the ISMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement(s);
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix D) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the Site remedy, as determined by the NYSDEC project manager.

## 3.2 Institutional Controls

A series of ICs is required by the OU-1 and OU-2 Decision Documents to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to commercial or industrial uses only. Adherence to these ICs for OU-1 and OU-2 is required by the Environmental Easement(s) and will be implemented under this ISMP. ICs identified in the Environmental Easement(s) may not be discontinued without an amendment to or extinguishment of the Environmental Easement(s). The IC are listed below (all ICs apply to the OU-1 and OU-2 on-site parcels, except for implementation of the OU-2 remedy, and only apply to the OU-1 off-site affected parcels where explicitly noted):

- The property may be used for commercial or industrial use.

- All ECs must be operated and maintained as specified in this ISMP.
- All ECs must be inspected at a frequency and in a manner defined in the ISMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater monitoring must be performed as defined in this ISMP.
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this ISMP.
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this ISMP.
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this ISMP.
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this ISMP.
- Access to the Site must be provided to agents, employees or other representatives of NYS with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement(s).
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on **Figure 3**, and any potential impacts that are identified must be monitored or mitigated (including OU-1 off-site affected parcels).
- Vegetable gardens and farming on the Site are prohibited.
- The need for further investigation and remediation shall be evaluated and determined should large-scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible (including OU-1 off-site affected parcels).

## 3.3 Engineering Controls

### 3.3.1 Cover

Exposure to remaining contamination and/or in-situ stabilization material at the Site is prevented by a cover system placed over the Site. This cover system is comprised of a combination of asphalt pavement, concrete-covered sidewalks, and/or concrete building slabs.

The EWP provided in Appendix D outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and a flowchart for intrusive activity decision making is provided in **Figure 18**. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this ISMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendix E. Any disturbance of the Site's cover system must be overseen by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in NYS, or a qualified person who directly reports to a PE who is licensed and registered in NYS.

### 3.3.2 Groundwater Monitoring Wells

Groundwater monitoring activities will be completed annually to assess potential contaminant migration by using the existing monitoring well network for the Site. Groundwater sampling procedures are outlined in Appendix F – Field Sampling Plan. If deemed appropriate based on the data obtained, site conditions, and site use, Con Edison may request from the NYSDEC and NYSDOH that the monitoring frequency and/or parameters be modified.

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC project manager in consultation with NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the Site Standards, Criteria and Guidelines (SCGs), or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the monitoring will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC project manager. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

### 3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the RAOs identified by the Decision Document. The framework for

determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating any remedial actions at the Site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

**Cover**

The Site cover system is a permanent control. The quality and integrity of this system will be inspected annually in perpetuity and in accordance with this ISMP.

**Groundwater Monitoring Wells**

Groundwater monitoring wells will be inspected during each groundwater sampling event and repaired as necessary to continue completion of the groundwater monitoring program. Inspections will be performed at the frequency defined in the monitoring schedule, initially to be performed on an annual basis.

# 4.0 MONITORING AND SAMPLING PLAN

## 4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC project manager. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix G.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of groundwater for OU-1 and OU-2;
- Evaluating the potential for soil vapor intrusion for any buildings developed within the OU-1 area of site management, or if the current use of the on-site building changes, or if existing off-site buildings to the east within in the area of Site management change, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion, if required;
- Assessing compliance with applicable NYSDEC groundwater SCGs (NYSDEC 1998)
- Evaluating Site information periodically for OU-1, including the cover system, to confirm that the final remedy continues to be effective in protecting public health and the environment; and
- Evaluating information periodically for OU-2 to confirm that the interim remedy continues to be effective in protecting public health and the environment.

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency
- Information on all designed monitoring systems
- Analytical sampling program requirements
- Inspection and maintenance requirements for monitoring wells
- Monitoring well decommissioning procedures

- Annual inspection and periodic certification

Reporting requirements are provided in Section 7.0 of this SMP.

## 4.2 Site-Wide Inspection

Site-wide inspections will be performed annually for OU-1 and OU-2. These periodic inspections must be conducted when the ground surface is visible (i.e., no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in NYS, or a qualified person who directly reports to a PE who is licensed and registered in NYS. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. During these inspections, an inspection form will be completed as provided in Appendix H – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage
- An evaluation of the condition and continued effectiveness of ECs
- General Site conditions at the time of the inspection
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection
- Confirm that Site records are up to date

Inspections will be conducted of all remedial components installed at the Site. A comprehensive site-wide inspection will be conducted and documented according to the ISMP schedule, regardless of the frequency of submitting a Periodic Review Report (PRR). The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment
- Compliance with requirements of this ISMP and the Environmental Easement(s)
- Achievement of remedial performance criteria
- If Site records are complete and up to date

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, verbal notice to the NYSDEC project manager must be given by noon of the following day. In addition, the Site will be inspected by a qualified environmental professional, as defined in 6 NYCCR Part 375 within 5 days of the event to verify the effectiveness of the ICs/ECs implemented at the Site. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the ECs.

### 4.2.1 Cover System Monitoring

The Site cover system will be inspected annually, including the asphalt surfaces and exposed concrete slabs. Defects in the asphalt surfaces and exposed concrete slabs (e.g., cracks, holes) will be noted, and necessary repairs will be completed by the property owner. Cover system inspection procedures and a documentation form are included in Appendix F – Field Sampling Plan.

Non-routine inspections may take place when a breach in the cap system has been reported or an emergency occurs that is deemed likely to affect the integrity of the system. Monitoring deliverables for the Site cap system are specified later in Section 6.1.

## 4.3 Groundwater Monitoring and Sampling

Groundwater monitoring will be performed annually as part of the final remedy at OU-1 and to document the subsurface conditions during the pre-design and design phases at OU-2. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager. Most of the monitoring locations for OU-2 will be abandoned as part of the final remedy. New monitoring wells will be installed after the final remedy is implemented at OU-2 and will be incorporated into this plan.

Sampling locations, required analytical parameters, and schedule are provided in **Table 12**. Detailed sample collection and analytical procedures and protocols are provided in **Appendix F – Field Sampling Plan** and **Appendix G – Quality Assurance Project Plan**.

**Table 12 – Groundwater Monitoring Requirements and Schedule**

| Sampling Location | | Analytical Parameters | | Schedule |
|---|---|---|---|---|
| | | VOCs (EPA Method 8260) | SVOCs (EPA Method 8270) | |
| Operable Unit-1 | MW-7 | X | X | Annually |
| | MW-8 | X | X | Annually |
| | MW-9 | X | X | Annually |
| | MW-10 | X | X | Annually |
| | MW-11 | X | X | Annually |
| | MW-16 | X | X | Annually |
| | MW-20 | X | X | Annually |
| Operable Unit-2 | MW-1 | X | X | Annually |
| | MW-2 | X | X | Annually |
| | MW-3 | X | X | Annually |
| | MW-4 | X | X | Annually |
| | MW-6 | X | X | Annually |
| | MW-19 | X | X | Annually |
| | MW-21 | X | X | Annually |
| | MW-22 | X | X | Annually |

Table 13 summarizes each well's identification number, purpose, location, depths, diameter and screened interval. As part of the groundwater monitoring, five upgradient, two side gradient, and eight downgradient wells are sampled to evaluate the effectiveness of the remedial system. The remedial party will measure depth to the water table for each monitoring well in the network before sampling.

## Table 13 – Monitoring Well Construction Details

| Operable Unit | Monitoring Well ID | Well Location | Coordinates (longitude/ latitude) | Well Diameter (inches) | Elevation (AMSL) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Casing | Surface | Screen Top | Screen Bottom |
| Operable Unit 1 | MW-9 | Upgradient | 40.762624° N, 73.997468° W | 2 | 16.24 | 17.06 | 1.24 | -8.76 |
| | MW-10 | Upgradient | 40.762319° N, 73.997682° W | 2 | 12.36 | 12.6 | 7.36 | -2.64 |
| | MW-7 | Downgradient | 40.763261° N, 73.999174° W | 2 | 9.9 | 10.15 | 6.1 | -3.9 |
| | MW-8 | Downgradient | 40.762958° N, 73.998584° W | 2 | 18.12 | 18.6 | -3.38 | -13.38 |
| Operable nit 1 *(continued)* | MW-11 | Downgradient | 40.763023° N, 73.997740° W | 2 | 12.76 | 13.39 | 3.26 | -6.74 |
| | MW-16 | Downgradient | 40.763518° N, 73.999556° W | 2 | 7.91 | 8.01 | 0.91 | -9.09 |
| | MW-20 | Downgradient | 40.762384° N, 73.998143° W | 2 | 11.35 | 11.8 | 0.85 | -9.15 |
| Operable Unit 2 | MW-1 | Side gradient | 40.763935° N, 73.998106° W | 2 | 12.7 | 13.5 | 12.5 | 1.5 |
| | MW-2 | Downgradient | 40.763903° N, 73.998532° W | 2 | 10.7 | 11.1 | 8.1 | -1.9 |
| | MW-3 | Upgradient | 40.763661° N, 73.997767° W | 2 | 13.6 | 14.1 | 10.1 | 0.1 |
| | MW-4 | Downgradient | 40.763615° N, 73.998509° W | 2 | 10.3 | 10.6 | 8.6 | -1.4 |
| | MW-6 | Upgradient | 40.763405° N, 73.998043° W | 2 | 12.2 | 12.2 | 10.2 | 0.2 |
| | MW-19 | Side gradient | 40.763918° N, 73.997884° W | 2 | 14.2 | 14.5 | 9.2 | 0.2 |
| | MW-21 | Downgradient | 40.763600° N, 73.998663° W | 2 | 9.7 | 10.4 | -4.3 | -14.3 |
| | MW-22 | Upgradient | 40.763908° N, 73.998092° W | 2 | 13.0 | 13.4 | 8.0 | -2.0 |

Monitoring well construction logs are included in **Appendix C** of this document.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC project manager will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent PRR. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC project manager. Well abandonment will be performed in accordance with NYSDEC's guidance titled "CP-43: Groundwater Monitoring Well Decommissioning Procedures" (2009). Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC project manager.

The data will be evaluated following four groundwater sampling events. If appropriate based on the data obtained, Site conditions, and Site use, Con Edison may request from the NYSDEC and NYSDOH that the monitoring frequency and/or parameters be modified. The sampling frequency may only be modified with the approval of the NYSDEC project manager. This ISMP will be modified to reflect changes in the sampling plans approved by the NYSDEC project manager.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

### 4.3.1 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix H - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Site-specific Field Activities Plan provided as Appendix F of this document.

# 5.0 OPERATION AND MAINTENANCE PLAN

## 5.1 General

The site remedy for OU-1 and the interim remedy for OU-2 does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this ISMP.

# 6.0 PERIODIC ASSESSMENTS/EVALUATIONS

## 6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

Given the urban nature of the Site and surrounding area, the presence of sufficient municipal stormwater collection infrastructure, and the lack of active remedial systems, vulnerability assessments are not warranted.

## 6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the ISMP summarizes green remediation evaluations to be completed for the Site during site management and reported in the PRR submittals.

### 6.2.1 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site, use of consumables in relation to visiting the Site in order to conduct system checks and/or collect samples, and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

# 7.0 REPORTING REQUIREMENTS

## 7.1 Site Management Reports

All Site management inspection, maintenance and monitoring events will be recorded on the appropriate Site management forms provided in Appendix H. These forms are subject to NYSDEC revision. All Site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in NYS, or a qualified person who directly reports to a PE who is licensed and registered in NYS.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of **Table 14** and summarized in the PRR.

**Table 14: Schedule of Interim Monitoring/Inspection Reports**

| Task/Report | Reporting Frequency* |
|---|---|
| Inspection Report | Annually |
| Groundwater Monitoring Report | Annually |
| Periodic Review Report | Annually, or as otherwise determined by the NYSDEC |

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC project manager.

Annual monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period
- Name, company, and position of person(s) conducting monitoring/inspection activities
- Description of the activities performed
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet)

- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air)
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation)
- Sampling results in comparison to appropriate standards/criteria
- A figure illustrating sample type and sampling locations
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format)
- Any observations, conclusions, or recommendations
- A determination as to whether contaminant conditions have changed since the last reporting event

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event
- Name, company, and position of person(s) conducting maintenance activities
- Description of maintenance activities performed
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the form or on an attached sheet)
- Other documentation such as copies of invoices for repair work or receipts for replacement equipment (attached to the checklist/form)

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

### 7.2 Periodic Review Report

A PRR will be submitted to the NYSDEC project manager beginning 16 months after this ISMP is approved. After submittal of the initial PRR, the next PRR shall be submitted annually to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site described in Appendix A -

Environmental Easement(s). The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the PRR. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual Site inspections, fire inspections and severe condition inspections, if applicable.
- All applicable Site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These tables and figures will include a presentation of past data as part of an evaluation of contaminant concentration trends, including but not limited to:
    - Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data
    - Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis
    - Operations and maintenance data summary tables
    - A current plume map for Sites with remaining groundwater contamination
    - A groundwater elevation contour map for each gauging event
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the Site-specific Remedial Action Work Plan (RAWP), ROD or Decision Document
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan
    - An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the RAWP, Record of Decision (ROD), or Decision Document
    - The overall performance and effectiveness of the remedy

### 7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional as defined in 6 NYCRR Part 375 will prepare and include in the PRR the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:*

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any Site management plan for this control;*
- *Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the Site is compliant with the Environmental Easement(s);*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Site remedial program; and*
- *The information presented in this report is accurate and complete.*

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

The signed certification will be included in the PRR.

The PRR will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The PRR may also need to be submitted in hard-copy format if requested by the NYSDEC project manager.

### 7.3 Corrective Measures Work Plan

If any component of the final remedy for OU-1 or the interim remedy for OU-2 is found to have failed, or if the periodic certification cannot be provided due to the failure of an IC or EC, or failure to conduct Site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

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# TABLES

Table 2
OU-2 Bedrock Depths and Elevations Summary
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Boring | Ground Surface Elevation (ft NAVD88) | Depth to Bedrock (ft bgs) | Bedrock Elevation (ft NAVD88) |
|---|---|---|---|
| PDI-1/MW-22 | 13.4 | 37.5* | -24.1 |
| PDI-2 | 14.2 | 43 | -28.8 |
| PDI-3 | 14.3 | 17 | -2.7 |
| PDI-4 | 14 | 39.5* | -25.5 |
| PDI-5 | 13.9 | 47.5 | -33.6 |
| PDI-6 | 14.2 | 13 | 1.2 |
| PDI-7 | 14.2 | 41.5* | -27.3 |
| PDI-9 | 14.4 | 36 | -21.6 |
| PDI-10 | 12.7 | 32 | -19.3 |
| PDI-11 | 13.2 | 41 | -27.8 |
| PDI-12 | 13.4 | 12.5 | 0.9 |
| PDI-13 | 12.5 | 40 | -27.5 |
| PDI-15 | 12.2 | 11 | 1.2 |
| PDI-16 | 11.8 | 30 | -18.2 |
| PDI-17 | 11.8 | 39 | -27.2 |
| PDI-18/MW-23 | 11.6 | 25 | -13.4 |
| PDI-19 | 11.3 | 33 | -21.7 |
| PDI-20 | 11 | 23.5 | -12.5 |
| PDI-21 | 11 | 40* | -29 |
| PDI-22 | 10.7 | 30.5* | -19.8 |
| PDI-23 | 10.5 | 20* | -9.5 |
| PDI-24/MW-21 | 10.4 | 27 | -16.6 |
| PDI-25 | 10.3 | 25 | -14.7 |
| PDI-26 | 11 | 22* | -11 |
| PDI-27 | 11 | 37 | -26 |
| PDI-28 | 10.9 | 9 | 1.9 |
| PDI-29 | 10.7 | 35 | -24.3 |
| PDI-30 | 10.8 | 27 | -16.2 |
| PDI-31 | 10 | 15 | -5 |
| PDI-32 | 13.6 | 15 | -1.4 |
| PDI-33 | 12.6 | 30 | -17.4 |
| PDI-34 | 12 | 7 | 5 |
| CONT-1 | 13.8 | 30 | -16.2 |
| CONT-2 | 13.3 | 30 | -16.7 |
| CONT-3 | 12.5 | 35 | -22.5 |
| CONT-4 | 12.6 | 8 | 4.6 |
| CONT-5 | 11.2 | 16* | -4.8 |
| CONT-7 | 11.9 | 15* | -3.1 |
| CONT-8 | 12.2 | 24.5* | -12.3 |
| PW-1 | 11.2 | 12.5* | -1.3 |
| PW-2 | 14.6 | 45* | -30.4 |

Table 2
OU-2 Bedrock Depths and Elevations Summary
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Boring | Ground Surface Elevation (ft NAVD88) | Depth to Bedrock (ft bgs) | Bedrock Elevation (ft NAVD88) |
|---|---|---|---|
| MW-24 | 11.2 | 13* | -1.8 |

**Notes:**

(1) * = An NX rock core was not collected at this boring location because of drilling issues (e.g., artesian conditions, presence of debris) or proximity to a location where an NX rock core was taken.

(2) Borings were not drilled at PDI-8 and PDI-14 because of field observations during drilling at PDI-7 and PDI-15, respectively. Drilling was not performed at CONT-6 because of issues with water entering the hand clearance.

Table 3-1
OU-1 Investigations - Summary of Groundwater Elevations
Former West 45th Street Gas Works Site
Interim Site Management Plan

**Tidal Study - March 2006**

| Well ID | Highest Groundwater Elevation (feet AMSL) | Lowest Groundwater Elevation (feet AMSL) | Average Groundwater Elevation (feet AMSL) | Range of Groundwater Elevations (feet) |
|---|---|---|---|---|
| MW-2 | 0.57 | 0.32 | 0.39 | 0.25 |
| MW-3 | 6.88 | 6.2 | 6.37 | 0.68 |
| MW-4 | 7.48 | 7.05 | 7.24 | 0.43 |
| MW-5 | 8.59 | 8.28 | 8.44 | 0.31 |
| MW-6 | 7.37 | 6.77 | 7.12 | 0.6 |
| MW-7 | 2.21 | 1.83 | 1.94 | 0.38 |
| MW-8 | 9.33 | 9.11 | 9.32 | 0.22 |
| MW-9 | 5.41 | 4.71 | 4.76 | 0.7 |

**Groundwater Gauging Event - May 2007**

| Well ID | Depth to Water (1) (feet) | Top of Casing Elevation (feet AMSL) | Groundwater Elevation (feet AMSL) |
|---|---|---|---|
| MW-2 | 8.29 | 9.07 | 0.78 |
| MW-3 | See Note 2 | 12.03 | NA |
| MW-4 | 2.71 | 9.9 | 7.19 |
| MW-5 | 1.64 | 10.68 | 9.04 |
| MW-6 | 4.1 | 10.78 | 6.68 |
| MW-7 | 7.61 | 9.9 | 2.29 |
| MW-8 | 8.7 | 18.12 | 9.42 |
| MW-9 | 10.49 | 16.24 | 5.75 |
| MW-10 | 9.23 | 12.36 | 3.13 |
| MW-11 | 6.46 | 12.76 | 6.30 |
| MW-16 | 10.45 | 7.91 | -2.54 |
| MW-19 | 6.22 | 14.3 | 8.08 |
| MW-20 | 10.8 | 11.35 | 0.55 |
| MW-55 | 9.89 | 11.35 | 1.46 |

Notes:
(1) Measured from top of PVC well casing on May 22, 2007.
(2) Well not accessible. Covered by construction trailer.
AMSL = Above Mean Sea Level
NA = Not Available
Elevations are based on the North American Vertical Datum of 1988 (NAVD88).

Table 3-2
OU-2 Investigations - Summary of Groundwater Elevations
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Date | Depth to Water (ft)[1] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 | MW-19 | MW-21 | MW-22 | MW-23 | MW-24 | PW-1 | PW-2 |
| 5/13/2003 | 5.58 | 8.12 | 4.99 | 3.72 | 3.61 bgs[7] | 4.11 | Monitoring well not present. | Monitoring well not present. | Monitoring well not present. | Monitoring well not present. | Monitoring well not present. | Monitoring well not present. | Monitoring well not present. |
| 10/16/2003 am | NA[2] | 8.31 | 5.40 | 3.86 | 3.31 bgs[7] | 3.95 | | | | | | | |
| 10/16/2003 pm | | 8.37 | 5.21 | 3.80 | 3.33 bgs[7] | 4.00 | | | | | | | |
| 3/13/2006 | | --[3] | --[3] | 2.42 | --[3] | 3.62 | | | | | | | |
| 3/30/2006 | | --[3] | --[3] | 3.14 | --[3] | 4.45 | | | | | | | |
| 4/27/2006 | | --[3] | --[3] | 2.8 | --[3] | 3.95 | | | | | | | |
| 5/22/2007 | | 8.29 | --[3] | 2.71 | 1.84 bgs[7] | 4.1 | 6.22 | | | | | | |
| 4/6/2012 | | 7.32 | 2.8 | 1 | 0.3 bgs[7] | 3.34 | 5.55 | 1.86 | 1.45 | 0.78 bgs[7] | | | |
| 4/10/2012 | | 7.44 | 3.55 | --[3] | --[3] | --[3] | 5.5 | 0.95 | 1.52 | 0.7 bgs[7] | | | |
| 5/8/2012 | | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | ~0 | | | |
| 5/9/2012 | | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | Artesian[8] | | | |
| 5/10/2012 | | --[3] | --[3] | ~0.13 | Artesian[4] | --[3] | --[3] | ~1.5 | --[3] | Artesian[8] | | | |
| 5/11/2012 | | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | ~0.08 bgs[7] | | | |
| 5/14/2012 | | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | --[3] | Artesian[8] | | | |
| 5/15/2012 am | | --[3] | --[3] | --[3] | Artesian[4] | --[3] | --[3] | --[3] | --[3] | ~0.17 bgs[7] | | | |
| 5/15/2012 pm | | --[3] | --[3] | --[3] | | --[3] | --[3] | --[3] | --[3] | ~0.04 bgs[7] | | | |
| 6/4/2012 | | 7.17 | 2.90 | 0.45 | Artesian[4] | 3.15 | 5.25 | 1.72 | 1.3 | 0.2 bgs[7] | | | |
| 6/18/2012 | | 7.33 | 2.99 | 0.96 | 0.79 ags[5] | 3.44 | 5.37 | 1.82 | 1.37 | 0.24 bgs[7] | | | |
| 6/27/2012 | | 7.29 | 3.26 | 0.73 | 0.66 ags[5] | 3.47 | 5.31 | 1.82 | 1.39 | 0.29 bgs[7] | 0.42 ags[5] | 0.38 ags[5] | 4.46 |
| 6/28/2012 | | 7.3 | 3.29 | --[3] | --[3] | --[3] | 5.33 | --[3] | 1.51 | --[3] | --[3] | --[3] | 4.53 |
| 6/29/2012 | | --[3] | --[3] | 0.78 | 0.65 ags[5] | --[3] | --[3] | --[3] | 1.47 | 0.25 bgs[7] | 0.36 ags[5] | 0.25 ags[5] | --[3] |
| 7/12/2012 | | 7.41 | 3.12 | 1.18 | NA[6] | 3.55 | 5.32 | 1.89 | 1.37 | NA[6] | NA[6] | NA[6] | --[3] |
| 7/18/2012 | | 7.44 | 3.08 | 1.08 | NA[6] | 3.54 | 5.32 | 1.87 | 1.35 | NA[6] | NA[6] | NA[6] | 4.46 |
| **Overall Average** | 5.58 | 7.65 | 3.69 | 1.92 | 1.29 bgs[7] | 3.74 | 5.46 | 1.68 | 1.41 | 0.28 bgs[8] | 0.39 ags[5] | 0.32 ags[5] | 4.48 |
| **2012 Average** | NA[2] | 7.34 | 3.12 | 0.79 | 0.45 ags[5] | 3.42 | 5.37 | 1.68 | 1.41 | 0.28 bgs[8] | 0.39 ags[5] | 0.32 ags[5] | 4.48 |
| **Top of PVC Elevation[9]** | 12.72 | 10.70 | 13.60 | 10.30 | 10.6 | 12.20 | 14.20 | 9.70 | 13.00 | 11.1 | 12.9 | 12.30 | 14.40 |
| **Ground Surface Elevation[9]** | 13.5 | 11.10 | 14.10 | 10.60 | 10.8 | 12.20 | 14.50 | 10.40 | 13.40 | 11.6 | 11.2 | 11.20 | 14.60 |
| **Overall Average Groundwater Elevation[9]** | 7.14 | 3.05 | 9.91 | 8.38 | 9.51 | 8.46 | 8.74 | Same as 2012 Average | Same as 2012 Average | Same as 2012 Average | Same as 2012 Average | Same as 2012 Average | Same as 2012 Average |
| **2012 Average Groundwater Elevation[9]** | NA[2] | 3.36 | 10.48 | 9.51 | 11.25 | 8.79 | 8.83 | 8.02 | 11.59 | 11.32 | 11.59 | 11.52 | 9.92 |

Notes:

(1) Measured from top of PVC, unless otherwise noted. Depths noted for MW-2 and MW-3 on 5/13/03 have been adjusted to account for conversion of these wells to flush-mounted wells in June 2003.

(2) MW-1 was damaged between May 13, 2003, when it was installed, and October 16, 2003. There is an obstruction present at approximately 3 ft below ground surface. A depth to water of 3.51 ft below ground surface was noted during the 2012 pre-design investigation.

(3) A water level measurement was not taken at this well on the date shown.

(4) At MW-5, the artesian flow rate was estimated visually based on the amount of water exiting the top of casing after the watertight plug was removed. On 5/10/12 and 5/15/12, the flow was approximately 0.25 gpm. On 6/4/12, the flow was less than 0.25 gpm.

(5) "ags" indicates that measurement is the number of feet above ground surface in a temporary riser, as compared to the majority of the other wells where measurements are from the top of PVC (i.e., approximately ground surface because the wells are flush mounted). At PW-1 and MW-24, it is assumed that the points of measurement (top of steel casing) were 1.85 ft and 2.6 ft, respectively, above ground surface.

(6) Measurements are not available because this well was abandoned on July 5, 2012.

(7) "bgs" indicates that measurement is the number of feet below ground surface, as compared to the majority of the other wells where measurements are from the top of PVC (i.e., approximately ground surface because the wells are flush mounted). For MW-5, the pre-2012 water depths were adjusted from the water depth readings that were taken from the top of PVC by adding 0.2 ft (i.e., the distance between the top of well or ground surface and the top of casing).

(8) At MW-23, the artesian flow rate was estimated visually based on the amount of water exiting the top of casing after the watertight plug was removed. On 5/9/12, the flow was approximately 3 gpm. On 5/10/12 and 5/14/12, the flow was approximately 10 gpm.

(9) Elevations are based on the North American Vertical Datum of 1988 (NAVD88). Survey measurements are from the 2012 Pre-Design Investigation, 2011 OU-1 Remedial Investigation, 2006 Data Summary for Additional Site Characterization, and 2003 OU-2 Site Characterization.

Table 4
2006 Tidal Study
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Well ID | Highest Groundwater Elevation (feet AMSL) | Lowest Groundwater Elevation (feet AMSL) | Average Groundwater Elevation (feet AMSL) | Range of Groundwater Elevations (feet) |
|---|---|---|---|---|
| MW-2 | 0.57 | 0.32 | 0.39 | 0.25 |
| MW-3 | 6.88 | 6.2 | 6.37 | 0.68 |
| MW-4 | 7.48 | 7.05 | 7.24 | 0.43 |
| MW-5 | 8.59 | 8.28 | 8.44 | 0.31 |
| MW-6 | 7.37 | 6.77 | 7.12 | 0.6 |
| MW-7 | 2.21 | 1.83 | 1.94 | 0.38 |
| MW-8 | 9.33 | 9.11 | 9.32 | 0.22 |
| MW-9 | 5.41 | 4.71 | 4.76 | 0.7 |

Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 7( 9-11)<br>X1835-02<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/4/2006<br>5/15/2006 | MW- 8( 9-11)<br>X1835-09<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 8(31-33)<br>X1835-10<br>31-33'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 9(21-23)<br>X1508-14<br>21-23'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW- 9(25-27)<br>X1508-15<br>25-27'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW-11( 3.5-4.0')<br>010700779-1<br>3.5-4.0'<br>EMSL Analytical<br>10700779<br>Soil<br>2/19/2007<br>6/6/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | 44 J | 4.4 J | 3.8 J | ND | ND | 0.64 J |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 1.4 J | ND | 0.18 J | 2.6 J | 0.019 J | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | 16 J | 1.6 J | 1.5 J | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | R |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 88 | 0.083 J | 0.95 | 43 | 0.013 J | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 17 | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | 0.19 J | ND | ND | NA |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | R |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | 0.25 J | 0.23 J | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 9.5 | ND | 0.28 J | 6.8 | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 47 | 0.18 J | 0.91 J | 30 | 0.0098 J | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 51 | 0.12 J | 0.41 J | 17 | 0.0071 J | ND |
| | **Total VOCs** | | | | **273.9** | **6.633** | **8.45** | **99.4** | **0.0489** | **0.64** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
(6) R indicates a rejected value.
(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(8) **Bold** and boxed values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 7( 9-11)<br>X1835-02<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/4/2006<br>5/15/2006 | MW- 8( 9-11)<br>X1835-09<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 8(31-33)<br>X1835-10<br>31-33'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 9(21-23)<br>X1508-14<br>21-23'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW- 9(25-27)<br>X1508-15<br>25-27'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW-11( 3.5-4.0')<br>010700779-1<br>3.5-4.0'<br>EMSL Analytical<br>10700779<br>Soil<br>2/19/2007<br>6/6/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | 0.7 J | NA | 35 | ND | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | 0.022 |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | NA | ND | NA | ND | ND | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | NA | ND | NA | 5.4 | ND | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | NA | ND | NA | ND | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | 0.016 |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | NA | ND | NA | ND | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | NA | ND | NA | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | NA | 0.41 J | NA | 110 J | 0.12 J | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | NA | ND | NA | 15 | ND | 0.077 |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | NA | ND | NA | 58 | 0.15 J | 0.025 |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | NA | ND | NA | **33 J** | 0.12 J | 0.11 |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | NA | ND | NA | **22 J** | 0.077 J | 0.15 |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | NA | ND | NA | **15** | 0.049 J | 0.13 |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | NA | ND | NA | 3.7 | ND | 0.15 |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | NA | ND | NA | 6.2 | ND | 0.1 |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | NA | ND | NA | 31 | 0.12 J | 0.13 |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | NA | ND | NA | **0.57 J** | ND | 0.032 |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | NA | ND | NA | 66 | 0.17 J | 0.16 |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | NA | 0.53 J | NA | 72 | 0.14 J | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | NA | ND | NA | 4.4 | ND | 0.11 |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | NA | 6.6 | NA | 320 | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | 2.1 | NA | **770** | ND | 0.031 |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | NA | 1.4 J | NA | 170 | 0.63 | 0.073 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | NA | ND | NA | 69 J | 0.32 J | 0.15 |
| | **Total PAHs** | -- | -- | **mg/Kg** | | **11.04** | | **1765.87** | **1.896** | **1.428** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | | **11.74** | | **1806.27** | **1.896** | **1.466** |

Notes:
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 7( 9-11)<br>X1835-02<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/4/2006<br>5/15/2006 | MW- 8( 9-11)<br>X1835-09<br>9-11'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 8(31-33)<br>X1835-10<br>31-33'<br>Chemtech<br>X1835<br>SOIL<br>3/7/2006<br>5/15/2006 | MW- 9(21-23)<br>X1508-14<br>21-23'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW- 9(25-27)<br>X1508-15<br>25-27'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | MW-11( 3.5-4.0')<br>010700779-1<br>3.5-4.0'<br>EMSL Analytical<br>10700779<br>Soil<br>2/19/2007<br>6/6/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | NA | 4570 | NA | 3060 J | 4770 J | 4600 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | NA | ND | NA | ND | ND | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | NA | 6.29 | NA | 0.987 J | 0.78 J | 3 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | NA | 265 J | NA | 56.8 | 85.1 J | 47 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | NA | 0.3 J | NA | 0.263 J | 0.325 J | ND |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | NA | 0.231 J | NA | ND | ND | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | NA | 7710 | NA | 1470 J | 3280 J | 2600 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | NA | 11.2 | NA | 10.6 | 14.2 J | 8.7 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | NA | 6.19 | NA | 4.46 J | 5.73 J | 4.3 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | NA | 49.6 | NA | 13.7 | 15.5 J | 41 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | NA | 10400 | NA | 7040 J | 9850 J | 14000 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | NA | 113 | NA | 3.58 | 4.42 J | 75 J |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | NA | 3200 | NA | 1330 J | 3280 J | 1500 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | NA | 95.7 | NA | 723 J | 720 J | 110 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | NA | 0.095 | NA | 0.012 | ND | 0.15 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | NA | 14.6 | NA | 8.14 | 10.1 J | 9.5 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | NA | 2200 | NA | 767 J | 2270 J | 740 |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | NA | ND | NA | 0.454 J | 0.692 J | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | NA | R | NA | 0.89 J | 1.11 J | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | NA | 676 | NA | 183 J | 137 J | ND |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | NA | ND | NA | ND | 1.56 | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | NA | 27.2 J | NA | 13.3 J | 21.1 J | 12 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | NA | 181 | NA | 16.9 J | 24.7 J | 77 |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | NA | 1.29 | NA | ND | ND | ND |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | 0.0029 J | ND | ND | 0.034 J | 0.076 J |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.003 | ND | ND | ND | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | R | R | R | R | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | ND | ND | ND | ND | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | ND | ND | ND | ND | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | 0.0012 | ND | ND | ND | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | ND | 0.0069 J |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | ND | ND | ND | ND | ND | 0.021 J |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 0.0014 | ND | ND | ND | ND | 0.0094 J |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | 0.0018 J | 0.0013 J | 0.0074 J | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 0.028 J | 0.0024 | ND | ND | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | 0.0015 J | ND | ND | ND | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | ND | ND | ND | ND | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.0078 J |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | ND | ND | ND | ND | ND | 0.012 J |
| | **Total VOCs** | | | | **0.0369** | **0.0066** | **0.0074** | **ND** | **0.034** | **0.1331** |

Notes:
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Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | NA | NA | NA | NA | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | NA | NA | NA | NA | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | 0.25 J | 0.062 | 0.24 | ND | NA | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | 0.084 | ND | ND | ND | NA | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | 0.11 | 0.12 | 0.089 | 0.15 | NA | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 0.25 | ND | ND | 0.013 | NA | ND |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 0.14 J | ND | ND | 0.046 | NA | 0.14 J |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | 0.13 | ND | ND | 0.031 | NA | 0.18 J |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.12 | ND | ND | 0.021 | NA | 0.17 J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 0.029 | ND | ND | 0.027 | NA | 0.11 J |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 0.11 | ND | ND | 0.029 | NA | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 0.19 J | ND | ND | 0.049 | NA | 0.15 J |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 0.32 | ND | ND | 0.081 | NA | 0.26 J |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 0.026 | ND | ND | 0.021 | NA | 0.089 J |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 4.9 | ND | ND | ND | NA | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 1 | ND | ND | ND | NA | ND |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 1.5 | ND | ND | 0.056 | NA | 0.2 J |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 0.31 J | ND | ND | 0.088 | NA | 0.35 J |
| | **Total PAHs** | **--** | **--** | **mg/Kg** | **9.025** | **ND** | **ND** | **0.462** | | **1.649** |
| | **Total SVOCs** | **--** | **--** | **mg/Kg** | **9.469** | **0.182** | **0.329** | **0.612** | | **1.649** |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 3600 J | 2900 J | 8500 J | 6200 J | NA | 10100 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | ND | ND | NA | 26.2 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 1.6 J | 1 J | 2 J | 2.2 J | NA | 5.51 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 28 | 26 | 41 | 95 J | NA | 85 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | ND | ND | ND | ND | NA | 0.45 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | ND | NA | 1.28 |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 1700 J | 950 J | 1000 J | 1300 J | NA | 60700 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 6.2 | 10 | 14 | 13 J | NA | 21.9 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 2.6 J | 3 J | 5 J | 4.6 J | NA | 7.38 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 6.7 J | 6.4 J | 12 J | 16 J | NA | 18.4 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 5700 J | 6100 J | 13000 J | 19000 J | NA | 11900 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 15 J | 2.4 J | 5.8 J | 8.8 J | NA | 123 J |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 1000 | 1100 | 2500 | 2500 J | NA | 14300 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 61 J | 53 J | 120 J | R | NA | 465 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.042 | ND | ND | 0.034 J | NA | 0.3 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 4.4 J | 6.3 J | 10 J | 11 J | NA | 16.1 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 290 J | 520 J | 890 J | 730 J | NA | 3300 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | 2 J | NA | 0.404 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | ND | ND | 330 J | ND | NA | 1310 |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 7.6 J | 13 J | 20 J | 13 J | NA | 29.9 |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 18 J | 11 J | 30 J | 25 J | NA | 112 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | NA | ND |

Notes:
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-16(17-19)<br>Y2518-05<br>17-19'<br>Chemtech<br>Y2518<br>SOIL<br>4/27/2007<br>6/21/2007 | MW-17( 5-7')<br>010700970-1<br>5-7'<br>EMSL Analytical<br>10700970<br>Soil<br>3/1/2007<br>6/19/2007 | MW-18( 5-7)<br>Y2633-05<br>5-7'<br>Chemtech<br>Y2633<br>SOIL<br>5/7/2007<br>6/24/2007 | Dup of MW-18( 5-7)<br>MW-18( 500-700)<br>Y2633-06<br>5-7'<br>Chemtech<br>Y2633<br>SOIL<br>5/7/2007<br>6/24/2007 | MW-19( 9-11)<br>Y2633-01<br>9-11'<br>Chemtech<br>Y2633<br>SOIL<br>5/7/2007<br>6/24/2007 | MW-19(13-15)<br>Y2633-04<br>13-15'<br>Chemtech<br>Y2633<br>SOIL<br>5/7/2007<br>6/24/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | 0.065 J | ND | ND | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.0074 J | ND | ND | ND | 12 | 2 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | R | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | 0.0044 | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | 0.0017 | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | ND | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | 0.011 J | NA | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.019 J | ND | ND | ND | 46 | 3.7 J |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | 0.0012 | ND | ND | 1.8 | 0.2 |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | 0.063 | NA | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | 0.016 J | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | 0.0067 | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | 0.25 J | 0.094 |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | ND | 2.1 | 2.1 J |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | 0.015 | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | 0.0054 | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.0073 J | ND | ND | ND | 51 | 4.6 J |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.0088 J | ND | ND | ND | 22 | 2 J |
| | **Total VOCs** | | | | **0.1815** | **0.0504** | **ND** | **ND** | **135.15** | **14.694** |

Notes:
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Former West 45th Street Gas Works Site
Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | NA | ND | ND | ND | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | NA | ND | ND | 0.43 | 0.083 J |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | NA | ND | ND | ND | ND | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | NA | ND | ND | ND | 0.14 J | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | NA | ND | ND | ND | 0.26 J | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | NA | ND | ND | ND | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | NA | ND | ND | ND | ND | 0.064 J |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | NA | ND | ND | ND | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | NA | ND | ND | ND | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | NA | ND | ND | ND | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | NA | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | NA | ND | ND | ND | 0.76 | 0.18 J |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | NA | ND | ND | ND | 0.66 | 0.12 J |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | NA | 0.029 | ND | ND | 1.1 | 0.25 J |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | NA | 0.014 | ND | ND | 1.3 | 0.25 J |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | NA | ND | ND | ND | 0.95 | 0.19 J |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | NA | ND | ND | ND | 0.76 | 0.16 J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | NA | ND | ND | ND | 0.27 J | ND |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | NA | ND | ND | ND | 0.25 J | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | NA | 0.026 | ND | ND | 1.1 | 0.24 J |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | NA | ND | ND | ND | ND | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | NA | 0.035 | ND | 0.11 J | 2.6 | 0.59 |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | NA | 0.064 | ND | ND | 2.9 | 0.66 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | NA | ND | ND | ND | 0.2 J | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | NA | 0.36 | ND | ND | 1.7 | 0.46 |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | 0.033 | ND | ND | 5.6 J | 1.4 |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | NA | 0.18 | ND | 0.21 J | 9.6 J | 1.7 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | NA | 0.051 | ND | 0.13 J | 3.9 J | 0.81 |
| | **Total PAHs** | -- | -- | **mg/Kg** | | **0.792** | **ND** | **0.45** | **33.65** | **7.01** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | | **0.792** | **ND** | **0.45** | **34.48** | **7.157** |

Notes:
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Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | NA | 3200 | 28900 | 10400 | 6690 | 4000 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | NA | ND | 15.8 J | ND | ND | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | NA | ND | ND | 0.735 J | 1.21 | 1.24 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | NA | 28 | 375 J | 130 J | 46.5 J | 36.4 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | NA | ND | 0.315 J | 0.234 J | 0.346 | 0.372 |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | NA | ND | 0.475 J | ND | ND | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | NA | 7300 J | 4210 | 2860 | 4100 | 4840 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | NA | 13 | 75.4 J | 26.5 J | 13.5 J | 10.8 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | NA | 2.8 | 30.5 J | 10.3 J | 5.29 | 4.23 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | NA | 7 | 55.1 | 27.1 | 14 | 9.48 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | NA | 9900 J | 49200 | 21500 | 12400 | 8070 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | NA | 7.6 | 6.63 | 14.8 | 14 | 5.4 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | NA | 6800 J | 14800 J | 4840 J | 2780 | 2330 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | NA | 160 J | 298 | 202 | 224 | 604 |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | NA | ND | 0.054 | 0.044 | 0.016 | 0.014 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | NA | 5.4 J | 35 | 13.2 | 10.4 | 9.61 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | NA | 740 J | 13500 J | 3790 J | 1100 | 987 |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | NA | ND | ND | 0.198 J | ND | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | NA | ND | ND | ND | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | NA | 160 | 1320 J | 371 J | 394 J | 351 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | NA | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | NA | 15 J | 166 J | 55.8 J | 18.9 | 20.7 |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | NA | 11 J | 103 | 57.1 | 33.1 | ND |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | NA | ND | ND | ND | ND | ND |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | 0.035 J | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.016 J | 0.98 | 0.23 | ND | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.02 J |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.08 | 0.15 | 0.77 J | ND | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 0.016 J | 0.0058 J | 0.11 | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | 0.0042 J | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | 0.53 | 0.13 | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.027 J | 0.24 | 0.62 | ND | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.033 | 0.13 | 0.36 | ND | ND | ND |
| | **Total VOCs** | | | | **0.172** | **2.04** | **2.22** | **ND** | **0.035** | **0.02** |

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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-20(15-17)<br>Y2633-11<br>15-17'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-20(21-23)<br>Y2633-12<br>21-23'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-20(23-25)<br>Y2633-13<br>23-25'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-55( 7-9)<br>Y2518-02<br>7-9'<br>Chemtech<br>Y2518<br>SOIL<br>4/27/2007<br>6/21/2007 | MW-55(11-15)<br>Y2518-03<br>11-15'<br>Chemtech<br>Y2518<br>SOIL<br>4/27/2007<br>6/21/2007 | SB-26( 5-7)<br>X1835-03<br>5-7'<br>Chemtech<br>X1835<br>SOIL<br>3/6/2006<br>5/15/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 0.94 | 6.1 | 0.17 J | ND | NA | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | 0.34 J | 0.11 J | ND | 0.22 J | NA | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | 0.3 J | ND | ND | NA | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | 0.17 J | 0.92 | ND | ND | NA | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | 0.076 J | ND | NA | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 1.1 | 16 | 0.53 | ND | NA | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 1.6 | 7.7 | 0.19 J | 0.11 J | NA | ND |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 1.4 | 9.2 | 0.29 J | 0.13 J | NA | ND |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 1.3 | **8.2** | 0.22 J | 0.59 | NA | 0.098 J |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | 0.96 | **5.6 J** | 0.15 J | 0.56 | NA | 0.074 J |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.62 | 4.1 J | 0.093 J | 0.68 | NA | 0.094 J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 0.44 J | 1.8 J | ND | 0.22 J | NA | ND |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 0.24 J | 1.5 J | ND | 0.21 J | NA | R |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 1.2 | 7.2 | 0.21 J | 0.63 | NA | 0.11 J |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | 0.26 J | ND | ND | NA | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 1.8 | 10 | 0.34 J | 1 | NA | 0.16 J |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 1.8 | 13 | 0.37 J | ND | NA | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 0.34 J | 1.2 J | ND | 0.19 J | NA | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 7.4 J | 65 | 1.3 | ND | NA | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 16 J | 110 | 2.6 | ND | NA | ND |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 6.5 J | 30 | 0.95 | 0.45 | NA | 0.1 J |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 2.5 | 18 | 0.46 | 1.1 | NA | 0.22 J |
| | **Total PAHs** | -- | -- | **mg/Kg** | **45.2** | **308.76** | **7.703** | **5.87** | | **0.856** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **46.65** | **316.19** | **7.949** | **6.09** | | **0.856** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
(6) R indicates a rejected value.
(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
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Table 5
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Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-20(15-17)<br>Y2633-11<br>15-17'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-20(21-23)<br>Y2633-12<br>21-23'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-20(23-25)<br>Y2633-13<br>23-25'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | MW-55( 7-9)<br>Y2518-02<br>7-9'<br>Chemtech<br>Y2518<br>SOIL<br>4/27/2007<br>6/21/2007 | MW-55(11-15)<br>Y2518-03<br>11-15'<br>Chemtech<br>Y2518<br>SOIL<br>4/27/2007<br>6/21/2007 | SB-26( 5-7)<br>X1835-03<br>5-7'<br>Chemtech<br>X1835<br>SOIL<br>3/6/2006<br>5/15/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 9790 | 4060 | 4360 | 25100 | NA | 7620 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 1.71 | ND | ND | **32.7** | NA | 3.65 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 82.8 J | 65 J | 58 J | **544 J** | NA | 68 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.552 | 0.268 J | 0.216 J | 0.932 J | NA | 0.458 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | 3.97 | NA | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 1180 | 815 | 772 | 2450 J | NA | 1760 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 19.7 J | 10.7 J | 9.11 J | 71.2 J | NA | 17.4 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 7.61 | 4.66 | 3.93 | 30.8 J | NA | 8.88 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 16.7 | 9.81 | 7.59 | 72 | NA | 21.5 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 17700 | 9970 | 8230 | 52700 J | NA | 18000 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 7.24 | 3.17 | 3.79 | 223 J | NA | 11.3 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 3310 | 1670 | 1600 | 15000 | NA | 2900 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 446 | 419 | 332 | 508 J | NA | 137 |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.014 | ND | 0.013 | 0.55 J | NA | 0.042 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 16.7 | 12.1 | 8.77 | 27 | NA | 16.3 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 2190 | 785 | 881 | 2020 J | NA | 1220 |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | 0.8 J | NA | R |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 412 J | 312 J | 322 J | 614 | NA | 433 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 27 | 18.1 | 13.1 | 138 | NA | 21.1 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 39.4 | ND | ND | 476 J | NA | 46 |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | NA | ND |

Notes:
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(5) J indicates an estimated concentration.
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | ND | ND | ND | 0.19 | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | 0.0032 J | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | 0.0033 J | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | ND | ND | ND | 0.016 | ND | 0.007 J |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND | 0.00064 J | 0.011 | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | 0.011 | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | 0.0024 J | ND | ND | 0.01 J |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | 0.011 | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | 0.16 | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | ND | ND | ND | 0.06 | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | ND | ND | 0.002 J | 0.028 | ND | 0.0066 J |
| | **Total VOCs** | | | | **ND** | **ND** | **0.00504** | **0.4935** | **ND** | **0.0236** |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | NA | ND | NA | ND | ND | NA |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | NA | 0.42 J | NA | ND | ND | NA |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | NA | 0.49 J | NA | 0.06 J | ND | NA |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | NA | 1 J | NA | 0.092 J | ND | NA |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | NA | ND | NA | 0.4 J | ND | NA |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | ND | NA | 0.34 J | ND | NA |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | NA | 0.75 J | NA | 0.12 J | ND | NA |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | NA | 0.83 J | NA | 0.1 J | ND | NA |
| | **Total PAHs** | -- | -- | **mg/Kg** | | **3.49** | | **1.112** | **ND** | |
| | **Total SVOCs** | -- | -- | **mg/Kg** | | **3.49** | | **1.112** | **ND** | |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | NA | 13400 J | NA | 9920 J | 13700 J | NA |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | NA | R | NA | R | 14 J | NA |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | NA | 1.05 J | NA | 2.17 | 4.78 | NA |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | NA | 167 J | NA | 224 J | **1050 J** | NA |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | NA | 0.397 J | NA | 0.394 J | 0.192 J | NA |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | NA | ND | NA | ND | 0.113 J | NA |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | NA | 11800 J | NA | 12800 J | 32400 J | NA |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | NA | 38.7 J | NA | 15.7 J | 41.7 J | NA |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | NA | 16.3 | NA | 12.6 | 17.5 | NA |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | NA | 40.5 J | NA | 40.5 J | 50.5 J | NA |
| 7439-89-6 | Iron | -- | -- | mg/Kg | NA | 22400 J | NA | 13500 J | 31800 J | NA |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | NA | 38.9 J | NA | 123 J | 647 J | NA |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | NA | 8240 J | NA | 8560 J | 7600 J | NA |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | NA | 163 J | NA | 238 J | 290 J | NA |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | NA | 0.115 J | NA | 0.414 J | 0.093 J | NA |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | NA | 30.3 | NA | 22.8 | 27 | NA |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | NA | 8270 J | NA | 5590 J | 13400 J | NA |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | NA | 1.24 J | NA | 1.07 J | 2.79 | NA |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | NA | ND | NA | ND | ND | NA |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | NA | 288 J | NA | 294 J | 1230 J | NA |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | NA | 0.829 J | NA | ND | ND | NA |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | NA | 39 J | NA | 19.7 J | 100 J | NA |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | NA | 109 J | NA | 90.8 J | 504 J | NA |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | NA | 0.813 | NA | 6.77 | ND | NA |

Notes:
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(5) J indicates an estimated concentration.
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(8) **Bold** and boxed values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-30(32-32.5)<br>X1418-09<br>32-32.5'<br>Chemtech<br>X1418<br>SOIL<br>2/1/2006<br>6/14/2006 | SB-30(32.5)<br>X1418-10<br>32.5'<br>Chemtech<br>X1418<br>SOIL<br>2/1/2006<br>6/14/2006 | SB-31(11-13)<br>X1508-12<br>11-13'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | SB-31(15-17)<br>X1508-13<br>15-17'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | SB-32( 9-11)<br>X1508-09<br>9-11'<br>Chemtech<br>X1508<br>SOIL<br>2/9/2006<br>6/14/2006 | SB-32(11-13)<br>X1508-10<br>11-13'<br>Chemtech<br>X1508<br>SOIL<br>2/9/2006<br>6/14/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | 0.017 J | ND | ND | NA | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | **650 J** | 0.69 J | 0.026 J | ND | NA | 0.14 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | 1.7 J | ND | ND | ND | NA | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | 7 J | ND | ND | ND | NA | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | NA | 0.023 J |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | 12 J | ND | ND | ND | NA | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | 2.8 J | ND | ND | ND | NA | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | 1.8 J | ND | ND | ND | NA | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | 18 J | ND | ND | ND | NA | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | 27 J | ND | ND | ND | NA | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | **1200 J** | 2.2 J | 0.016 J | ND | NA | 0.012 J |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | 45 J | ND | ND | ND | NA | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 100 J | ND | ND | ND | NA | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | 27 J | ND | ND | ND | NA | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | 51 J | ND | ND | ND | NA | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | NA | 0.015 J |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | 190 J | 0.93 J | ND | ND | NA | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | 4.4 J | ND | ND | ND | NA | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | 53 J | ND | ND | ND | NA | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | NA | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | **1400 J** | 2.5 J | 0.034 | ND | NA | 0.034 J |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | **1400 J** | 4.6 J | 0.03 J | ND | NA | 0.02 J |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | **580 J** | 3.9 J | 0.013 J | ND | NA | 0.0087 J |
| | **Total VOCs** | | | | **5770.7** | **14.837** | **0.119** | **ND** | | **0.2527** |

Notes:
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Table 5
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Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-30(32-32.5)<br>X1418-09<br>32-32.5'<br>Chemtech<br>X1418<br>SOIL<br>2/1/2006<br>6/14/2006 | SB-30(32.5)<br>X1418-10<br>32.5'<br>Chemtech<br>X1418<br>SOIL<br>2/1/2006<br>6/14/2006 | SB-31(11-13)<br>X1508-12<br>11-13'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | SB-31(15-17)<br>X1508-13<br>15-17'<br>Chemtech<br>X1508<br>SOIL<br>2/10/2006<br>6/14/2006 | SB-32( 9-11)<br>X1508-09<br>9-11'<br>Chemtech<br>X1508<br>SOIL<br>2/9/2006<br>6/14/2006 | SB-32(11-13)<br>X1508-10<br>11-13'<br>Chemtech<br>X1508<br>SOIL<br>2/9/2006<br>6/14/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 23 | NA | NA | NA | 0.17 J | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | NA | NA | NA | ND | NA |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | NA | NA | NA | ND | NA |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 4.2 J | NA | NA | NA | ND | NA |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 5.9 J | NA | NA | NA | ND | NA |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 3.7 J | NA | NA | NA | ND | NA |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | **6 J** | NA | NA | NA | ND | NA |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | **2.6 J** | NA | NA | NA | ND | NA |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 3.5 J | NA | NA | NA | ND | NA |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 8.6 J | NA | NA | NA | ND | NA |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 12 J | NA | NA | NA | 0.12 J | NA |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 8.5 J | NA | NA | NA | 0.16 J | NA |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | ND | NA | NA | NA | ND | NA |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 230 | NA | NA | NA | 1.3 | NA |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | **1600** | NA | NA | NA | 0.49 | NA |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 35 | NA | NA | NA | 0.35 J | NA |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 18 | NA | NA | NA | 0.13 J | NA |
| | **Total PAHs** | -- | -- | **mg/Kg** | **1938** | | | | **2.55** | |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **1961** | | | | **2.72** | |

Notes:
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Former West 45th Street Gas Works Site
Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 3810 J | NA | 5620 J | NA | 5140 J | NA |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 14.8 J | NA | ND | NA | 16.6 J | NA |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | **41.2** | NA | 2.68 | NA | 3.31 | NA |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | **1780** | NA | 64.3 | NA | 46.5 | NA |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.413 J | NA | 0.39 J | NA | 0.29 J | NA |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 3.36 | NA | 0.117 J | NA | 0.137 J | NA |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 9490 J | NA | 29500 J | NA | 14400 J | NA |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 15.8 J | NA | 11.4 | NA | 6.81 | NA |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 10.6 J | NA | 3.48 J | NA | 3.42 J | NA |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | **430 J** | NA | 14.2 | NA | 11.7 | NA |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 48500 J | NA | 6590 J | NA | 14200 J | NA |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | **7490 J** | NA | 95.3 | NA | 23.2 | NA |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 2400 J | NA | 23100 J | NA | 8820 J | NA |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 173 | NA | 628 J | NA | 251 J | NA |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.828 | NA | 0.089 | NA | 0.308 | NA |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 11.3 J | NA | 7.03 | NA | 4.22 J | NA |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 1800 | NA | 1560 J | NA | 1250 J | NA |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 5.91 | NA | 0.512 J | NA | 0.698 J | NA |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | NA | 0.64 J | NA | 1.94 | NA |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 283 J | NA | 434 J | NA | 763 | NA |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | NA | ND | NA | ND | NA |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 17.6 | NA | 9.87 J | NA | 8.76 J | NA |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 1090 | NA | 31.7 J | NA | 30 J | NA |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | **213.52** | NA | | NA | 17 J | NA |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | 4.2 J | ND | 0.65 J | 0.04 J | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 22 J | ND | 13 J | 0.012 J | 4.5 | 0.0037 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | 0.79 J | ND | 0.098 J | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | 0.021 J | ND | 0.014 J | 0.006 J |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 49 J | ND | 13 J | 0.0085 J | 18 | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | 0.023 J | ND | 0.025 J | 0.016 J | 0.088 J | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | 0.033 J | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 8.1 J | ND | 1.4 J | 0.024 J | 8.2 | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 47 J | ND | 16 J | 0.068 | 24 | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 26 J | ND | 8.1 J | 0.074 | 11 | ND |
| | **Total VOCs** | | | | **157.113** | **0.033** | **52.294** | **0.2425** | **65.802** | **0.0097** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-33(17-19)<br>X1508-05<br>17-19'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>6/14/2006 | SB-33(27-28)<br>X1508-06<br>27-28'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>6/14/2006 | Dup of SB-33(27-28)<br>SB-33(DUP-1)<br>X1508-07<br>27-28'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>4/25/2006 | SB-36A( 5-5.5)<br>X1996-11<br>5-5.5'<br>Chemtech<br>X1996<br>SOIL<br>3/18/2006<br>5/11/2006 | SB-37(23-25)<br>X1508-02<br>23-25'<br>Chemtech<br>X1508<br>SOIL<br>2/7/2006<br>6/14/2006 | SB-37(32-34)<br>X1508-03<br>32-34'<br>Chemtech<br>X1508<br>SOIL<br>2/7/2006<br>6/14/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 1 J | ND | 6.1 J | 1.3 J | NA | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | ND | 0.75 J | 0.32 J | NA | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND | 1.3 J | 1.3 J | NA | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | 1.3 J | ND | 1.2 J | ND | NA | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | 0.56 J | ND | 0.59 J | ND | NA | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | 1.2 J | NA | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | 0.36 J | ND | NA | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 2.5 J | ND | 14 J | 2.9 | NA | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 1 J | ND | 5.5 J | 9.6 | NA | ND |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 1.6 J | ND | 9.4 J | 11 | NA | ND |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 1.6 J | ND | **9.8 J** | **20** | NA | ND |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | **1.1 J** | ND | **5.5 J** | **11** | NA | ND |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.83 J | ND | 4.6 J | **11** | NA | ND |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 0.41 J | ND | 1.2 J | 2.7 J | NA | ND |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | ND | ND | 1.8 J | 5.3 J | NA | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 1.8 J | ND | 10 J | 26 | NA | ND |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND | ND | 0.49 J | NA | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 2 J | ND | 11 J | 20 | NA | ND |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 1.9 J | ND | 11 J | 10 | NA | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 0.42 J | ND | 1.3 J | 0.51 J | NA | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 12 J | 0.97 J | 59 J | 11 | NA | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 26 J | 3 J | 86 J | 6.2 | NA | ND |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 7 J | ND | 32 J | 50 | NA | ND |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 2.6 J | ND | 15 J | 36 | NA | ND |
| | **Total PAHs** | -- | -- | **mg/Kg** | **62.76** | **3.97** | **277.1** | **233.7** | | **ND** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **65.62** | **3.97** | **287.4** | **237.82** | | **ND** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
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(3) NA indicates compound was not analyzed for.
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(5) J indicates an estimated concentration.
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(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-33(17-19)<br>X1508-05<br>17-19'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>6/14/2006 | SB-33(27-28)<br>X1508-06<br>27-28'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>6/14/2006 | Dup of SB-33(27-28)<br>SB-33(DUP-1)<br>X1508-07<br>27-28'<br>Chemtech<br>X1508<br>SOIL<br>2/8/2006<br>4/25/2006 | SB-36A( 5-5.5)<br>X1996-11<br>5-5.5'<br>Chemtech<br>X1996<br>SOIL<br>3/18/2006<br>5/11/2006 | SB-37(23-25)<br>X1508-02<br>23-25'<br>Chemtech<br>X1508<br>SOIL<br>2/7/2006<br>6/14/2006 | SB-37(32-34)<br>X1508-03<br>32-34'<br>Chemtech<br>X1508<br>SOIL<br>2/7/2006<br>6/14/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 49200 J | 33200 J | 55000 J | 19900 J | NA | 2200 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 92.9 J | ND | 21.2 J | 25 J | NA | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 10.9 J | 3.32 J | **18.9 J** | **53.7** | NA | ND |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 234 J | **526 J** | **596 J** | 322 | NA | 26.4 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 2.86 J | 2.19 J | 2.84 J | 0.89 | NA | 0.295 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | 0.308 J | ND | NA | 0.049 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 8420 J | 11400 J | 48100 J | 6740 J | NA | 7130 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 68.1 J | 84.8 J | 98.7 J | 52.1 J | NA | 4.42 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 22.1 J | 600 J | 49.9 J | 20.4 J | NA | 1.8 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 56.4 J | 98.6 J | 97.2 J | 55 | NA | 7.07 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 72000 J | 54400 J | 96500 J | 47800 J | NA | 3190 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 85.6 J | 17 J | 276 J | 412 J | NA | 16.3 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 12600 J | 18700 J | 36500 J | 10500 J | NA | 3670 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 440 J | 2490 J | 1420 J | 415 | NA | 141 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.146 J | 0.04 J | 0.74 J | 1.8 | NA | 0.085 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 43 J | 60.1 J | 71.8 J | 29.5 | NA | 0.595 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 4620 J | 14900 J | 13600 J | 12500 J | NA | 1110 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 6.74 J | 21 J | 7.22 J | 82.3 | NA | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | 5.82 J | 4.37 J | 8.49 J | 2.1 J | NA | 0.426 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 1070 J | 2710 J | 1820 J | 1020 | NA | 214 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | NA | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 94.7 J | 111 J | 133 J | 83.7 J | NA | 3.71 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 178 J | 136 J | 274 J | 293 J | NA | 51.5 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | NA | 33 J |

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Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | R | ND | ND | ND | 0.32 J | 0.032 J |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.044 J | 0.032 J | 0.2 J | 0.015 J | **330 J** | 0.0044 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | R | ND | ND | ND | 0.84 J | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | 0.0046 J | 0.0064 J | 0.008 J | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | R | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | R | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.047 J | 0.02 J | 0.055 J | 0.031 J | **960 J** | 0.084 J |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | R | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | 0.013 J | ND | ND | ND | ND | 0.13 J |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | 0.0041 J | ND | 0.011 J | ND | 3.9 J | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | R | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | R | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 0.079 J | 0.046 J | 0.21 J | 0.039 J | **1000 J** | 0.013 J |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.063 J | 0.023 J | 0.081 J | 0.037 J | **970 J** | 0.095 J |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.025 J | 0.01 J | 0.031 J | 0.017 J | **400 J** | 0.22 J |
| | **Total VOCs** | | | | **0.2797** | **0.1374** | **0.596** | **0.139** | **3665.06** | **0.5784** |

Notes:
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(3) NA indicates compound was not analyzed for.
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(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | NA | NA | NA | 4 J | 1.9 J |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | NA | NA | NA | NA | 0.55 J | 0.46 J |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | NA | NA | NA | 6.8 J | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | NA | NA | NA | NA | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | NA | NA | NA | NA | 1.1 J | 5.7 J |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | NA | NA | NA | NA | 3.4 J | 2.7 |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | NA | NA | NA | NA | 2.8 J | 4.3 |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | NA | NA | NA | NA | 2.5 J | 5.6 |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | NA | NA | NA | NA | **1.1 J** | **3.3** |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | NA | NA | NA | NA | 1.4 J | 3.6 |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | NA | NA | NA | NA | ND | 0.74 J |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | NA | NA | NA | NA | 0.51 J | 1.2 J |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | NA | NA | NA | NA | 2.8 J | 6.5 |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | NA | NA | NA | NA | ND | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | NA | NA | NA | NA | 4.3 J | 6.4 |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | NA | NA | NA | NA | 4 J | 2.8 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | NA | NA | NA | NA | ND | 0.65 J |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | NA | NA | NA | NA | 79 J | 5.1 |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | **550 J** | 16 |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | NA | NA | NA | NA | 17 J | 15 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | NA | NA | NA | NA | 7.4 J | 8.8 |
| | **Total PAHs** | -- | -- | **mg/Kg** | | | | | **677.31** | **88.39** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | | | | | **688.66** | **90.75** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-38( 5-7)<br>X1418-13<br>5-7'<br>Chemtech<br>X1418<br>SOIL<br>2/2/2006<br>6/14/2006 | SB-38(27-29)<br>X1418-14<br>27-29'<br>Chemtech<br>X1418<br>SOIL<br>2/2/2006<br>6/14/2006 | SB-38(29)<br>X1418-15<br>29'<br>Chemtech<br>X1418<br>SOIL<br>2/2/2006<br>6/14/2006 | SB-39( 5-7)<br>X1418-06<br>5-7'<br>Chemtech<br>X1418<br>SOIL<br>1/31/2006<br>6/14/2006 | SB-39(31-33)<br>X1418-07<br>31-33'<br>Chemtech<br>X1418<br>SOIL<br>1/31/2006<br>6/14/2006 | SB-40( 0.5-1.0)<br>X1348-01<br>0.5-1.0<br>Chemtech<br>X1348<br>SOIL<br>1/25/2006<br>4/20/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | NA | NA | NA | NA | 4240 J | 6820 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | NA | NA | NA | NA | R | R |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | NA | NA | NA | NA | **74.7 J** | 8.9 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | NA | NA | NA | NA | **1180 J** | 125 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | NA | NA | NA | NA | 0.438 J | 0.562 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | NA | NA | NA | NA | 2.97 J | 0.626 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | NA | NA | NA | NA | 5630 J | 25400 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | NA | NA | NA | NA | 14.3 J | 18.2 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | NA | NA | NA | NA | 25.4 J | 6.76 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | NA | NA | NA | NA | **401 J** | 42.6 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | NA | NA | NA | NA | 56300 J | 12500 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | NA | NA | NA | NA | **12600 J** | 176 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | NA | NA | NA | NA | 1520 J | 6230 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | NA | NA | NA | NA | 124 J | 168 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | NA | NA | NA | NA | 0.224 J | 0.277 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | NA | NA | NA | NA | 29.4 J | 23.5 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | NA | NA | NA | NA | 986 J | 1950 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | NA | NA | NA | NA | 12.1 J | 1.26 J |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | NA | NA | NA | NA | 11.9 J | 2.24 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | NA | NA | NA | NA | 605 J | 257 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | NA | NA | NA | NA | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | NA | NA | NA | NA | 22.5 J | 26.4 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | NA | NA | NA | NA | 2170 J | 148 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | NA | NA | NA | NA | **576.03 J** | 2.42 |

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Former West 45th Street Gas Works Site
Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.0066 J | 14 J | ND | ND | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | 0.0027 J | ND | 0.014 J | ND | 0.0043 J |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.069 J | 58 J | ND | ND | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | 0.18 | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.0033 J |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | 0.021 J | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 0.015 J | 4.2 J | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.036 J | 40 J | ND | ND | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.03 J | 22 J | ND | ND | ND | ND |
| | **Total VOCs** | | | | **0.1566** | **138.2237** | **ND** | **0.194** | **ND** | **0.0076** |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 0.35 J | 6.6 | NA | NA | ND | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | 0.29 J | NA | NA | ND | NA |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | 0.91 J | NA | NA | ND | NA |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | NA | NA | ND | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | NA | NA | ND | NA |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 0.67 J | 16 J | NA | NA | ND | NA |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 1.7 J | 5.8 J | NA | NA | ND | NA |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 1.3 J | 5.7 J | NA | NA | ND | NA |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 1 J | **7.7** | NA | NA | ND | NA |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | 0.9 J | **3.3 J** | NA | NA | ND | NA |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.29 J | 3.4 J | NA | NA | ND | NA |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | ND | ND | NA | NA | ND | NA |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 1 J | 0.64 J | NA | NA | ND | NA |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 1 J | 8.1 | NA | NA | ND | NA |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND | NA | NA | ND | NA |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 1.4 J | 4 J | NA | NA | ND | NA |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 1.3 J | 6.9 J | NA | NA | ND | NA |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | ND | ND | NA | NA | ND | NA |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 0.39 J | 63 | NA | NA | ND | NA |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 3 | 110 | NA | NA | ND | NA |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 4 | 27 | NA | NA | ND | NA |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 1.6 J | 16 J | NA | NA | ND | NA |
| | **Total PAHs** | **--** | **--** | **mg/Kg** | **19.55** | **277.54** | | | **ND** | |
| | **Total SVOCs** | **--** | **--** | **mg/Kg** | **19.9** | **285.34** | | | **ND** | |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 5580 J | 9360 J | NA | NA | 4940 | NA |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | R | R | NA | NA | ND | NA |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 2.37 | 1.41 | NA | NA | 0.939 J | NA |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 48.3 | 106 | NA | NA | 125 | NA |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.215 J | 0.318 J | NA | NA | 0.361 J | NA |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 0.371 J | 0.271 J | NA | NA | ND | NA |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 12800 J | 15400 J | NA | NA | 1220 | NA |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 18.4 J | 27.1 J | NA | NA | 14.8 J | NA |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 8.02 J | 9.78 J | NA | NA | 5.53 J | NA |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 41.1 | 18.6 | NA | NA | 13.9 | NA |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 12100 J | 15100 J | NA | NA | 9750 | NA |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 54.4 | 30.9 | NA | NA | 6.06 | NA |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 5640 J | 13400 J | NA | NA | 2110 | NA |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 113 | 207 | NA | NA | 365 | NA |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.285 J | 0.981 J | NA | NA | 0.007 J | NA |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 15.8 J | 18 J | NA | NA | 9.98 J | NA |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 2350 J | 5910 J | NA | NA | 2050 J | NA |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 0.526 J | 0.895 J | NA | NA | ND | NA |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | 2.45 J | 2.84 J | NA | NA | ND | NA |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 201 J | 275 J | NA | NA | 289 J | NA |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | NA | NA | ND | NA |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 18.3 J | 30.1 J | NA | NA | 19.6 | NA |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 278 | 57.8 | NA | NA | 20.7 J | NA |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | 0.78 | NA | NA | ND | NA |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | 0.044 J | 0.05 J | 0.14 J | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.016 J | 0.16 | 0.24 | 0.32 | 0.75 | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | 0.075 J | 0.035 J | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | 0.015 J | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.23 | 2.5 | 0.75 | 0.027 J | 26 | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 0.065 | 0.74 | 0.18 | ND | 4.3 | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | 0.097 | ND | 0.18 J | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | 0.012 J | 0.047 | 0.029 J | 0.0077 J | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 0.088 | 1 | 0.031 J | 0.056 | 0.68 J | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.32 | 2.9 | 0.47 | 0.017 J | 21 | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.31 | 2.4 | 0.4 | 0.0067 J | 11 | ND |
| | **Total VOCs** | | | | **1.085** | **9.812** | **2.412** | **0.4694** | **63.91** | **ND** |

Notes:
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(2) -- indicates no cleanup objective or background level is available.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-43( 1-3)<br>X1835-05<br>1-3'<br>Chemtech<br>X1835<br>SOIL<br>3/6/2006<br>5/15/2006 | SB-43( 7-9)<br>X1835-15<br>7-9'<br>Chemtech<br>X1835<br>SOIL<br>3/8/2006<br>5/15/2006 | SB-44( 7-9)<br>X1835-16<br>7-9'<br>Chemtech<br>X1835<br>SOIL<br>3/8/2006<br>5/15/2006 | SB-45( 5-7)<br>X1835-18<br>5-7'<br>Chemtech<br>X1835<br>SOIL<br>3/10/2006<br>5/15/2006 | SB-45(19-21)<br>X1835-19<br>19-21'<br>Chemtech<br>X1835<br>SOIL<br>3/10/2006<br>5/15/2006 | SB-46(11-13)<br>X2042-02<br>11-13'<br>Chemtech<br>X2042<br>SOIL<br>3/23/2006<br>5/13/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | 0.15 J | ND | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 0.87 J | 8.1 | 4.8 | 1 J | 3.8 | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | 0.12 J | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | 0.8 J | 0.9 | 0.15 J | 0.39 | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | 1.5 J | 1.1 | 0.44 | 0.78 | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | 0.5 | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 2.2 | 14 | 9.1 | 10 | 12 | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 3 | 6.8 | 4.3 | 2.3 | 2.4 | ND |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 3 | 11 | 6.6 | 4.8 | 5.8 | ND |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | **7.6** | **16** | **8.3** | 4 J | 5.5 | ND |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | **6.1** | **10 J** | **4.7** | **3.4 J** | **3.8** | ND |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | **7.6** | **9.5 J** | 4 J | 2.9 J | 3.4 J | ND |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 1.3 J | 1.3 J | 0.92 J | 0.96 | 0.93 J | ND |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 2.6 J | 2.5 J | 3 | 1.2 | 1.9 J | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 8.7 | 16 | 9.8 | 3.7 J | 5.8 | ND |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | 0.27 J | 0.19 J | 0.11 J | 0.15 J | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 9.1 | 17 | 11 | 6.8 | 7 | ND |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 3.3 | 15 | 9.9 | 5.7 | 7.2 | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 0.68 J | 0.6 J | 0.36 J | 0.38 J | 0.38 | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 7.7 | 72 | 40 | 19 | 38 | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 7.1 | 81 | 48 | 1.1 | 74 | ND |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 13 | 56 | 31 | 18 | 21 | ND |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 12 | 37 | 21 | 14 | 13 | ND |
| | **Total PAHs** | -- | -- | **mg/Kg** | **94.98** | **365.97** | **212.17** | **98.35** | **202.26** | **ND** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **95.85** | **376.37** | **218.97** | **100.59** | **207.35** | **ND** |

Notes:
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(4) ND indicates compound was not detected.
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OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-43( 1-3)<br>X1835-05<br>1-3'<br>Chemtech<br>X1835<br>SOIL<br>3/6/2006<br>5/15/2006 | SB-43( 7-9)<br>X1835-15<br>7-9'<br>Chemtech<br>X1835<br>SOIL<br>3/8/2006<br>5/15/2006 | SB-44( 7-9)<br>X1835-16<br>7-9'<br>Chemtech<br>X1835<br>SOIL<br>3/8/2006<br>5/15/2006 | SB-45( 5-7)<br>X1835-18<br>5-7'<br>Chemtech<br>X1835<br>SOIL<br>3/10/2006<br>5/15/2006 | SB-45(19-21)<br>X1835-19<br>19-21'<br>Chemtech<br>X1835<br>SOIL<br>3/10/2006<br>5/15/2006 | SB-46(11-13)<br>X2042-02<br>11-13'<br>Chemtech<br>X2042<br>SOIL<br>3/23/2006<br>5/13/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 7130 | 8580 | 7460 | 8110 | 12600 | 8240 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | 35.8 J | ND | ND | 0.837 J | 24.2 |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | **19.7** | 13.7 | 11.2 | 12.2 | 1.05 J | 2.7 J |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 193 J | 114 J | 148 J | 94.1 J | 273 J | 101 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.529 J | 0.538 J | 0.466 J | 0.418 J | 0.412 J | 0.56 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 0.972 | 0.238 J | 0.523 J | 0.415 J | 0.292 J | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 6370 | 5980 | 14000 | 31100 | 4020 | 914 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 19 | 15.1 | 14.3 | 25.5 | 35.6 | 20.7 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 8.27 | 5.94 J | 6.07 J | 8.06 | 12.3 | 11.1 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | **2870** | 40.4 | 46.5 | 37.8 | 31.2 | 16.9 J |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 17500 | 14300 | 13100 | 18900 | 20400 | 17300 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 542 | 205 | 251 | 572 | 8.86 | 8.7 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 2740 | 2910 | 2860 | 8630 | 6990 | 2970 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 257 | 399 | 323 | 299 | 490 | 208 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | **7.3** | 0.462 | 1.1 | 0.684 | 0.034 | 0.016 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 28.4 | 16.9 | 14 | 31.3 | 19.1 | 12.2 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 1450 | 813 | 1140 | 1900 | 8660 | 2010 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 1.67 | 2.97 | 3.67 | 5.37 | ND | 0.74 J |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | 1.9 J | R | R | ND | 0.152 J | 0.61 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 654 | ND | 539 J | 470 J | 218 J | 768 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 29.6 J | 34.4 J | 22.5 J | 27.4 | 55.4 | 33.8 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 551 | 130 | 153 | 386 | 52 | 24.5 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | 3.34 | 1.71 | 2.07 | ND | ND |

Notes:
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Table 5
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Former West 45th Street Gas Works Site
Interim Site Management Plan

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | 0.15 J | ND | ND | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | 0.2 | ND | ND | **550** | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | 0.045 J | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | 0.011 J |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | 0.0098 J | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.011 J | ND | ND | 310 | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 0.033 | ND | ND | 6.7 J | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.0019 J |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | 670 | 0.18 J | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | 0.0038 J | ND | ND | **1100** | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.016 J | ND | ND | **870** | 0.17 J | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.012 J | ND | ND | **400** | 0.1 J | ND |
| | **Total VOCs** | | | | **0.4806** | **ND** | **ND** | **3906.7** | **0.45** | **0.0129** |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | ND | ND | ND | 46 | 1.4 | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | 0.095 J | ND | ND | ND | ND | NA |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | ND | ND | 1.6 J | ND | NA |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND | ND | 11 J | 0.21 J | NA |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | ND | ND | NA |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | ND | ND | ND | 23 | 0.62 | NA |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | ND | ND | ND | 170 | 4.7 | NA |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 0.072 J | ND | ND | 70 | 2.1 | NA |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 0.38 J | ND | ND | **62** | 2 | NA |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | 0.29 J | ND | ND | **36 J** | **1.2** | NA |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.38 | ND | ND | **27 J** | 0.75 J | NA |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 0.072 J | ND | ND | 11 J | 0.7 | NA |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 0.14 J | ND | ND | 13 J | 0.34 J | NA |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 0.36 J | ND | ND | **60** | 1.9 | NA |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND | ND | **5.2 J** | 0.088 J | NA |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 0.82 | ND | ND | 93 | 2.7 | NA |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | ND | ND | ND | 110 | 2.7 | NA |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | ND | ND | ND | **28 J** | 0.45 J | NA |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 0.39 | ND | ND | 520 | 12 | NA |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | ND | 0.18 J | 0.16 J | **1200** | 25 | NA |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 0.22 J | ND | ND | 240 | 7.1 | NA |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 0.81 | ND | ND | 140 | 3.9 | NA |
| | **Total PAHs** | -- | -- | **mg/Kg** | **3.934** | **0.18** | **0.16** | **2808.2** | **68.248** | |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **4.029** | **0.18** | **0.16** | **2866.8** | **69.858** | |

Notes:
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-46(13-15)<br>X2042-03<br>13-15'<br>Chemtech<br>X2042<br>SOIL<br>3/23/2006<br>5/13/2006 | SB-47(15)<br>X2162-01<br>15'<br>Chemtech<br>X2162<br>SOIL<br>3/30/2006<br>5/12/2006 | SB-47(18)<br>X2162-02<br>18'<br>Chemtech<br>X2162<br>SOIL<br>3/30/2006<br>5/12/2006 | SB-48(20-21)<br>X2162-03<br>20-21'<br>Chemtech<br>X2162<br>SOIL<br>3/30/2006<br>5/12/2006 | SB-48(23)<br>X2162-04<br>23'<br>Chemtech<br>X2162<br>SOIL<br>3/30/2006<br>5/12/2006 | SB-49( 7-9' )<br>010700957-3<br>7-9'<br>EMSL Analytical<br>10700957<br>Soil<br>2/28/2007<br>6/19/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 8000 J | 7910 J | 7030 J | 3880 J | 5410 J | NA |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 5 J | ND | ND | ND | ND | NA |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 3.6 J | 0.631 J | 1.02 J | 2.52 | 0.53 J | NA |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 81.4 J | 42.8 | 60 | 59.4 | 108 | NA |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.35 J | 0.356 J | 0.425 J | 0.317 J | 0.376 J | NA |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | 0.135 J | ND | NA |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 10200 J | 1350 J | 1020 J | 1130 J | 5550 J | NA |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 16.4 J | 16 J | 19.7 J | 15.1 J | 13.9 J | NA |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 8.2 J | 6.74 | 5.69 | 2.99 J | 5.53 | NA |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 23.5 J | 18.2 | 15.9 | 11.7 | 15.7 | NA |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 16200 J | 13300 | 10700 | 6990 | 9980 | NA |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 61.7 | 7.48 | 3.91 | 4.18 | 5.46 | NA |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 3180 J | 2540 | 2650 | 1430 | 3370 | NA |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 301 J | 290 J | 499 J | 54.9 J | 420 J | NA |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.156 J | 0.022 | ND | ND | ND | NA |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 13.7 J | 13.7 | 12.5 | 7.32 | 12.8 | NA |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 2390 J | 1040 | 2100 | 820 | 2400 | NA |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 1.2 | ND | ND | ND | ND | NA |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | 0.57 J | ND | ND | ND | ND | NA |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 486 J | 227 J | 167 J | 316 J | 284 J | NA |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | 1.42 | ND | NA |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 29.6 J | 18.9 | 24.1 | 14.3 | 18.6 | NA |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 52.3 J | 36.8 J | 25.9 J | 17.6 J | 22.7 J | NA |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | ND | NA |

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Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-49(17-19')<br>010700957-4<br>17-19'<br>EMSL Analytical<br>10700957<br>Soil<br>2/28/2007<br>6/19/2007 | SB-50( 5-7')<br>010700914-2<br>5-7'<br>EMSL Analytical<br>10700914<br>Soil<br>2/27/2007<br>6/18/2007 | SB-50( 9-11')<br>010700914-3<br>9-11'<br>EMSL Analytical<br>10700914<br>Soil<br>2/27/2007<br>6/18/2007 | SB-51(12-14')<br>010700897-1<br>12-14'<br>EMSL Analytical<br>10700897<br>Soil<br>2/26/2007<br>6/18/2007 | SB-51(16-18')<br>010700897-2<br>16-18'<br>EMSL Analytical<br>10700897<br>Soil<br>2/26/2007<br>6/18/2007 | SB-52 (12-14)<br>Z1659-01<br>12-14'<br>Chemtech<br>Z1659<br>SOIL<br>2/23/2008<br>4/10/2008 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | 0.024 J | 0.0024 J | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | ND | ND | ND | ND | ND | 0.021 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | 0.0049 J | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | R | R | R | R | 0.0099 J | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | 0.0013 | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | NA | NA | NA | NA | NA | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | ND | ND | ND | ND | ND | 0.058 |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | 0.0064 | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | NA | NA | NA | NA | NA | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | 0.0013 J | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | ND | ND | ND | ND | ND | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.027 J |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | ND | ND | ND | ND | ND | 0.026 J |
| | **Total VOCs** | | | | **0.0064** | **0.0289** | **0.0037** | **ND** | **0.0112** | **0.132** |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | NA | NA | NA | NA | NA | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | NA | NA | NA | NA | NA | 0.11 J |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | 0.2 | 0.16 | 0.13 | ND | 0.021 | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | 0.071 | ND | ND | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | NA | NA | NA | NA | NA | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.37 J |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | ND | 0.015 | ND | ND | ND | 0.076 J |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | ND | 0.019 | ND | ND | ND | 0.21 J |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | ND | 0.078 | ND | ND | ND | 0.17 J |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | ND | 0.07 | ND | ND | ND | 0.11 J |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | ND | 0.061 | ND | ND | ND | 0.082 J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | ND | 0.058 | ND | ND | ND | 0.045 J |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | ND | 0.052 | ND | ND | ND | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | ND | 0.077 | ND | ND | ND | 0.15 J |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | 0.012 | ND | ND | ND | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | ND | 0.14 | ND | 0.014 | ND | 0.26 J |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.23 J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | ND | 0.045 | ND | ND | ND | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | 0.72 |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | ND | ND | ND | ND | ND | 1.3 |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | ND | 0.094 | ND | 0.015 | ND | 0.78 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | ND | 0.14 | ND | 0.016 | ND | 0.34 J |
| | **Total PAHs** | **--** | **--** | **mg/Kg** | **ND** | **0.861** | **ND** | **0.045** | **ND** | **4.843** |
| | **Total SVOCs** | **--** | **--** | **mg/Kg** | **0.2** | **1.092** | **0.13** | **0.045** | **0.021** | **4.953** |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 4400 J | 5900 J | 5200 J | 5100 J | 4900 J | 3620 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 1.3 J | 2.2 J | 1.7 J | 1.5 J | 2.1 J | 0.696 J |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 49 J | 49 J | 76 J | 44 J | 45 J | 21.2 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | ND | ND | ND | ND | 0.46 J | 0.211 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 1200 J | 15000 J | 1300 J | 2200 J | 3200 J | 619 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 10 J | 12 J | 24 J | 12 J | 18 J | 9.14 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 3.9 J | 3.2 J | 3.9 J | 2.8 J | 5.5 J | 3.4 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 7.5 J | 110 J | 16 J | 13 J | 13 J | 6.25 J |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 11000 J | 11000 J | 11000 J | 14000 J | 20000 J | 6320 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 4.6 J | 38 J | 3.4 J | 29 J | 6.3 J | 3.19 J |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 1500 J | 2400 J | 3100 J | 1400 J | 3500 J | 1390 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 180 J | 100 J | 160 J | 130 J | 200 J | 336 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | ND | 0.09 J | 0.023 J | 0.19 | ND | ND |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 10 J | 7.9 J | 7.2 J | 7.3 J | 10 J | 9.35 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 930 J | 820 J | 1800 J | 550 J | 1000 J | 609 |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | ND | ND | ND | 330 J | 180 J | 173 |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 14 J | 12 J | 19 J | 12 J | 20 J | 9.91 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 17 J | 44 J | 17 J | 30 J | 25 J | 13.4 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | 19 | 6.5 | ND | 5.8 | ND |

Notes:
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-52 (14-16)<br>Z1659-02<br>14-16'<br>Chemtech<br>Z1659<br>SOIL<br>2/23/2008<br>4/10/2008 | SB-53 (15-17)<br>Z1796-01<br>15-17'<br>Chemtech<br>Z1796<br>SOIL<br>3/1/2008<br>4/11/2008 | SB-53 (17-19)<br>Z1796-02<br>17-19'<br>Chemtech<br>Z1796<br>SOIL<br>3/1/2008<br>4/11/2008 | SB-54( 7-9)<br>Y2489-03<br>7-9'<br>Chemtech<br>Y2489<br>SOIL<br>4/26/2007<br>6/20/2007 | SB-54( 9-11)<br>Y2489-04<br>9-11'<br>Chemtech<br>Y2489<br>SOIL<br>4/26/2007<br>6/20/2007 | SB-56( 7-9)<br>Y2531-02<br>7-9'<br>Chemtech<br>Y2531<br>SOIL<br>4/30/2007<br>6/22/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND | ND | 0.066 J | 0.036 J | 0.066 J |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | 0.42 | ND | ND | ND | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | 0.041 | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | 0.3 | ND | ND | ND | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | 0.2 | ND | ND | ND | ND | ND |
| | **Total VOCs** | | | | **0.961** | **ND** | **ND** | **0.066** | **0.036** | **0.066** |

Notes:
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Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-52 (14-16)<br>Z1659-02<br>14-16'<br>Chemtech<br>Z1659<br>SOIL<br>2/23/2008<br>4/10/2008 | SB-53 (15-17)<br>Z1796-01<br>15-17'<br>Chemtech<br>Z1796<br>SOIL<br>3/1/2008<br>4/11/2008 | SB-53 (17-19)<br>Z1796-02<br>17-19'<br>Chemtech<br>Z1796<br>SOIL<br>3/1/2008<br>4/11/2008 | SB-54( 7-9)<br>Y2489-03<br>7-9'<br>Chemtech<br>Y2489<br>SOIL<br>4/26/2007<br>6/20/2007 | SB-54( 9-11)<br>Y2489-04<br>9-11'<br>Chemtech<br>Y2489<br>SOIL<br>4/26/2007<br>6/20/2007 | SB-56( 7-9)<br>Y2531-02<br>7-9'<br>Chemtech<br>Y2531<br>SOIL<br>4/30/2007<br>6/22/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | 5.8 | ND | ND | NA | NA | NA |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | 0.077 J | ND | ND | NA | NA | NA |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | 0.55 | ND | ND | NA | NA | NA |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | ND | NA | NA | NA |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | NA | NA | NA |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | 19 | ND | ND | NA | NA | NA |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | 2.7 | ND | ND | NA | NA | NA |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | 8.9 | ND | ND | NA | NA | NA |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | **6.4** | ND | ND | NA | NA | NA |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | **4.3** | ND | ND | NA | NA | NA |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 3.5 | ND | ND | NA | NA | NA |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 1.9 | ND | ND | NA | NA | NA |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | 1.1 | ND | ND | NA | NA | NA |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 5.7 | ND | ND | NA | NA | NA |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | **0.57** | ND | ND | NA | NA | NA |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 10 | ND | ND | NA | NA | NA |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | 9.8 | ND | ND | NA | NA | NA |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 1.6 | ND | ND | NA | NA | NA |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | 51 | ND | ND | NA | NA | NA |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 130 | ND | ND | NA | NA | NA |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 29 | ND | ND | NA | NA | NA |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 14 | ND | ND | NA | NA | NA |
| | **Total PAHs** | -- | -- | **mg/Kg** | **299.47** | **ND** | **ND** | | | |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **305.897** | **ND** | **ND** | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 3090 | 6030 | 5920 | NA | NA | NA |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | 0.49 J | 1.1 J | NA | NA | NA |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 1.03 | ND | 0.45 J | NA | NA | NA |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 20.7 | 54.4 | 81.1 | NA | NA | NA |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.173 J | 0.44 | 0.44 | NA | NA | NA |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | NA | NA | NA |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 670 | 785 J | 1440 J | NA | NA | NA |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 6.48 | 19.3 J | 15.6 J | NA | NA | NA |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 2.57 | 4.2 J | 7 J | NA | NA | NA |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 6.35 J | 40.9 | 49.5 | NA | NA | NA |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 5240 | 10900 J | 14000 J | NA | NA | NA |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 2.59 J | 4.8 J | 5.6 J | NA | NA | NA |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 1110 | 2090 J | 2520 J | NA | NA | NA |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 345 J | 110 J | 522 J | NA | NA | NA |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | ND | ND | 0.005 J | NA | NA | NA |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 8.15 | 11.3 J | 15.9 J | NA | NA | NA |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 607 | 1350 | 1580 | NA | NA | NA |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | 0.53 J | ND | NA | NA | NA |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | NA | NA | NA |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 178 | 346 J | 325 J | NA | NA | NA |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | NA | NA | NA |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 7.85 J | 20.8 | 23.6 | NA | NA | NA |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 11.6 J | 19.8 J | 28.1 J | NA | NA | NA |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | NA | NA | NA |

Notes:
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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA | NA | NA | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | 0.023 J | 0.023 J | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA | NA | NA | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | ND | ND | ND | ND | ND | ND |
| | **Total VOCs** | | | | **0.023** | **0.023** | **ND** | **ND** | **ND** | **ND** |

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND | 0.35 J | ND | ND | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND | ND | ND | ND | 0.059 J |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.069 J |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | ND | ND | ND | ND | 0.06 J | 0.083 J |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | ND | ND | ND | ND | 0.13 J | 0.23 J |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | ND | ND | ND | ND | 0.58 | 0.95 |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | ND | ND | ND | ND | 0.63 | 0.96 |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.075 J | ND | ND | ND | 0.95 | 1.3 |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | ND | ND | ND | ND | 0.14 J | 0.17 J |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | ND | ND | ND | ND | 0.34 J | 0.57 |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | ND | ND | ND | ND | 0.6 | 0.98 |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | ND | ND | ND | ND | 1.2 J | 1.6 J |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.077 J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | ND | ND | ND | ND | 0.15 J | 0.24 J |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | ND | ND | 0.17 J | ND | ND | 0.082 J |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | ND | ND | ND | ND | ND | 0.2 J |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | ND | ND | 0.14 J | ND | 0.56 | 1.1 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 0.13 J | ND | ND | ND | 1.1 | 1.7 |
| | **Total PAHs** | -- | -- | **mg/Kg** | **0.205** | **ND** | **0.31** | **ND** | **6.44** | **10.311** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **0.205** | **ND** | **0.66** | **ND** | **6.44** | **10.37** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
(6) R indicates a rejected value.
(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(8) **Bold** and boxed values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-57( 7-9)<br>Y2531-06<br>7-9'<br>Chemtech<br>Y2531<br>SOIL<br>5/1/2007<br>6/22/2007 | SB-57(11-13)<br>Y2531-07<br>11-13'<br>Chemtech<br>Y2531<br>SOIL<br>5/1/2007<br>6/22/2007 | SB-58( 7-9)<br>Y2633-08<br>7-9'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | SB-58(11-13)<br>Y2633-09<br>11-13'<br>Chemtech<br>Y2633<br>SOIL<br>5/8/2007<br>6/24/2007 | TP-2(3-7)<br>X1647-09<br>3-7'<br>Chemtech<br>X1647<br>SOIL<br>2/25/2006<br>5/3/2006 | TP-2(7)<br>X1647-08<br>7'<br>Chemtech<br>X1647<br>SOIL<br>2/25/2006<br>5/3/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 10100 | 11500 | 12600 | 28200 | 9070 | 9470 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | ND | ND | R | 2.25 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 9.36 | **27.2** | 2.86 | 0.4 J | 4.13 | 3.36 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 166 | 376 | 179 J | 245 J | 143 | 128 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.538 J | 0.654 | 0.376 | 0.504 | 0.429 J | 0.411 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 2.96 | 3.65 | ND | 0.584 | 0.534 J | 0.559 |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 14800 | 1700 | 2720 | 2390 | 10900 | 12000 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 80.3 | 133 | 27.2 J | 56 J | 17.9 | 17.9 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 10.1 | 8.91 | 12.6 | 27.6 | 10.2 J | 9.75 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 97.3 J | **398 J** | 33.9 | 76.7 | 67.7 | 55.1 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 23900 | 17600 | 23300 | 54100 | 15600 | 14600 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 157 | 568 | 46.5 | 13 | 148 | 317 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 5610 | 5190 | 4840 | 11100 | 4850 | 5310 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 330 | 195 | 372 | 615 | 280 | 208 |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 1.3 J | **3.2 J** | 0.079 | 0.02 | 1.1 J | 0.923 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 22.8 | 36.6 | 19.1 | 28.4 | 21.8 J | 21 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 4660 | 4010 | 4150 | 8540 | 4920 J | 4720 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 0.682 J | 3.63 | ND | ND | ND | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | 21.9 | 83.3 | ND | ND | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 1260 | 3500 | 385 J | 957 J | 636 J | 602 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | 0.829 J | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 48.6 | 48.5 | 50.2 | 157 | 28.8 | 26.3 |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 209 | 763 | 62.5 | 105 | 175 J | 150 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | 0.617 | ND | ND |

Notes:
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(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
(6) R indicates a rejected value.
(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(8) **Bold** and boxed values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-3( 5-10)<br>X1647-07<br>5-10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 | TP-3(10)<br>X1647-06<br>10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 |
|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | |
| | VOLATILES | | | | | |
| 67-64-1 | Acetone | 0.05 | 500 | mg/Kg | ND | ND |
| 71-43-2 | Benzene | 0.06 | 44 | mg/Kg | ND | 0.0028 J |
| 75-27-4 | Bromodichloromethane | -- | -- | mg/Kg | ND | ND |
| 78-93-3 | 2-Butanone | 0.12 | 500 | mg/Kg | ND | ND |
| 75-65-0 | tert-Butyl Alcohol | -- | -- | mg/Kg | NA | NA |
| 104-51-8 | n-Butylbenzene | 12 | 500 | mg/Kg | NA | NA |
| 135-98-8 | sec-Butylbenzene | 11 | 500 | mg/Kg | NA | NA |
| 98-06-6 | tert-Butylbenzene | 5.9 | 500 | mg/Kg | NA | NA |
| 75-15-0 | Carbon Disulfide | -- | -- | mg/Kg | ND | ND |
| 110-82-7 | Cyclohexane | -- | -- | mg/Kg | ND | ND |
| 124-48-1 | Dibromochloromethane | -- | -- | mg/Kg | ND | ND |
| 75-35-4 | 1,1-Dichloroethene | 0.33 | 500 | mg/Kg | ND | ND |
| 107-06-2 | 1,2-Dichloroethane | 0.02 | 30 | mg/Kg | ND | ND |
| 10061-01-5 | cis-1,3-Dichloropropene | -- | -- | mg/Kg | ND | ND |
| 100-41-4 | Ethyl Benzene | 1 | 390 | mg/Kg | ND | ND |
| 591-78-6 | 2-Hexanone | -- | -- | mg/Kg | ND | ND |
| 98-82-8 | Isopropylbenzene | -- | -- | mg/Kg | ND | ND |
| 108-10-1 | 4-Methyl-2-Pentanone | -- | -- | mg/Kg | ND | ND |
| 1634-04-4 | Methyl tert-butyl Ether | 0.93 | 500 | mg/Kg | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | -- | mg/Kg | ND | ND |
| 75-09-2 | Methylene Chloride | 0.05 | 500 | mg/Kg | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | NA | NA |
| 100-42-5 | Styrene | -- | -- | mg/Kg | ND | ND |
| 79-00-5 | 1,1,2-Trichloroethane | -- | -- | mg/Kg | ND | ND |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | -- | -- | mg/Kg | ND | ND |
| 127-18-4 | Tetrachloroethene | 1.3 | 150 | mg/Kg | ND | ND |
| 108-88-3 | Toluene | 0.7 | 500 | mg/Kg | ND | ND |
| 95-63-6 | 1,2,4-Trimethylbenzene | 3.6 | 190 | mg/Kg | NA | NA |
| 108-67-8 | 1,3,5-Trimethylbenzene | 8.4 | 190 | mg/Kg | NA | NA |
| 136777-61-2 | m/p-Xylenes | 0.26 | 500 | mg/Kg | ND | ND |
| 1330-20-7 | o-Xylene | 0.26 | | mg/Kg | ND | ND |
| | **Total VOCs** | | | | **ND** | **0.0028** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
(4) ND indicates compound was not detected.
(5) J indicates an estimated concentration.
(6) R indicates a rejected value.
(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-3( 5-10)<br>X1647-07<br>5-10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 | TP-3(10)<br>X1647-06<br>10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 |
|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | |
| | SEMIVOLATILES | | | | | |
| 98-86-2 | Acetophenone | -- | -- | mg/Kg | ND | ND |
| 92-52-4 | 1,1-Biphenyl | -- | -- | mg/Kg | ND | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | -- | -- | mg/Kg | ND | ND |
| 86-74-8 | Carbazole | -- | -- | mg/Kg | ND | ND |
| 132-64-9 | Dibenzofuran | 7 | 350 | mg/Kg | ND | ND |
| 105-67-9 | 2,4-Dimethylphenol | -- | -- | mg/Kg | ND | ND |
| 84-74-2 | Di-n-butylphthalate | -- | -- | mg/Kg | ND | ND |
| 117-84-0 | Di-n-octyl phthalate | -- | -- | mg/Kg | ND | ND |
| 106-44-5 | 3+4-Methylphenols | 0.33 | 500 | mg/Kg | ND | ND |
| 86-30-6 | N-Nitrosodiphenylamine | -- | -- | mg/Kg | ND | ND |
| 108-95-2 | Phenol | 0.33 | 500 | mg/Kg | ND | ND |
| | PAHs | | | | | |
| 83-32-9 | Acenaphthene | 20 | 500 | mg/Kg | ND | ND |
| 208-96-8 | Acenaphthylene | 100 | 500 | mg/Kg | ND | ND |
| 120-12-7 | Anthracene | 100 | 500 | mg/Kg | ND | 0.11 J |
| 120-12-7 | Benzo(a)anthracene | 1 | 5.6 | mg/Kg | 0.096 J | 0.2 J |
| 50-32-8 | Benzo(a)pyrene | 1 | 1 | mg/Kg | 0.12 J | 0.19 J |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 5.6 | mg/Kg | 0.15 J | 0.2 J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | 500 | mg/Kg | 0.065 J | 0.085 J |
| 207-08-9 | Benzo(k)fluoranthene | 0.8 | 56 | mg/Kg | ND | ND |
| 218-01-9 | Chrysene | 1 | 56 | mg/Kg | 0.16 J | 0.21 J |
| 53-70-3 | Dibenz(a,h)anthracene | 0.33 | 0.56 | mg/Kg | ND | ND |
| 206-44-0 | Fluoranthene | 100 | 500 | mg/Kg | 0.1 J | 0.27 J |
| 86-73-7 | Fluorene | 30 | 500 | mg/Kg | ND | ND |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.5 | 5.6 | mg/Kg | 0.26 J | 0.28 J |
| 91-57-6 | 2-Methylnaphthalene | -- | -- | mg/Kg | ND | ND |
| 91-20-3 | Naphthalene | 12 | 500 | mg/Kg | 0.069 J | ND |
| 85-01-8 | Phenanthrene | 100 | 500 | mg/Kg | 0.091 J | 0.4 |
| 129-00-0 | Pyrene | 100 | 500 | mg/Kg | 0.21 J | 0.52 |
| | **Total PAHs** | -- | -- | **mg/Kg** | **1.321** | **2.465** |
| | **Total SVOCs** | -- | -- | **mg/Kg** | **1.321** | **2.465** |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective or background level is available.
(3) NA indicates compound was not analyzed for.
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Table 5
OU-1 Detected Compound Summary in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Restricted Soil Cleanup Objectives Commercial Use 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-3( 5-10)<br>X1647-07<br>5-10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 | TP-3(10)<br>X1647-06<br>10'<br>Chemtech<br>X1647<br>SOIL<br>2/24/2006<br>5/3/2006 |
|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | |
| | INORGANICS | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 20200 | 22700 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 8.37 J | 10.5 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 2.5 | 1.32 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 316 | 317 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.751 | 0.821 |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 0.618 | 0.265 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 3070 | 3520 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 51 | 58.7 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 23.8 J | 23.1 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 53.1 | 67.3 |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 28300 | 28800 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 175 | 23.7 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 14100 | 16600 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 562 | 411 |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.623 J | 0.826 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 43.7 J | 44.4 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 13800 J | 13900 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 990 J | 777 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | 0.645 J | 0.697 J |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 61.4 | 70.1 |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 240 J | 105 J |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | 0.713 | ND |

Notes:
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
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(7) Shaded values exceed 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(8) **Bold** and boxed values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 2<br>Y2831-02<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 5<br>Y2831-01<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 7<br>Y2690-04<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW- 8<br>Y2831-06<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 9<br>Y2831-05<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-10<br>Y2690-01<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | |
| 67-64-1 | Acetone | 50 (G) | ug/L | ND | 36 | R | ND | ND | R |
| 71-43-2 | Benzene | 1 | ug/L | ND | 260 | 94 | 1100 | 4000 | 2300 |
| 78-93-3 | 2-Butanone | 50 (G) | ug/L | ND | ND | ND | ND | ND | ND |
| 75-15-0 | Carbon Disulfide | -- | ug/L | ND | 1.4 J | ND | ND | 1.2 J | ND |
| 110-82-7 | Cyclohexane | -- | ug/L | ND | 1.1 J | ND | 1.8 J | 2.4 J | 2 J |
| 100-41-4 | Ethyl Benzene | 5 | ug/L | ND | 250 | 260 | 330 | 2100 | 17 |
| 98-82-8 | Isopropylbenzene | 5 | ug/L | ND | 32 | 15 | 29 | 71 | 49 |
| 1634-04-4 | Methyl tert-butyl Ether | -- | ug/L | ND | 3.1 J | ND | ND | 35 | 28 |
| 108-87-2 | Methylcyclohexane | -- | ug/L | ND | 1.6 J | ND | 3.8 J | ND | 1.7 J |
| 100-42-5 | Styrene | 5 | ug/L | ND | 3.7 J | 1.8 J | 1.4 J | 3 J | ND |
| 108-88-3 | Toluene | 5 | ug/L | ND | 110 | 160 | 150 | 170 | 2.4 J |
| 136777-61-2 | m/p-Xylenes | 5 | ug/L | ND | 150 | 150 | 250 | 1200 | 15 |
| 1330-20-7 | o-Xylene | 5 | ug/L | ND | 90 | 180 | 110 | 840 | 13 |
| | **Total VOCs** | -- | | **ND** | **938.9** | **860.8** | **1976** | **8422.6** | **2428.1** |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
(6) J indicates an estimated concentration.
(7) R indicates result was rejected based on validation.
(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 2<br>Y2831-02<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 5<br>Y2831-01<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 7<br>Y2690-04<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW- 8<br>Y2831-06<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 9<br>Y2831-05<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-10<br>Y2690-01<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | |
| 98-86-2 | Acetophenone | -- | ug/L | ND | ND | 8.1 J | ND | 7.2 J | ND |
| 100-52-7 | Benzaldehyde | -- | ug/L | ND | ND | 25 | ND | ND | ND |
| 92-52-4 | 1,1-Biphenyl | 5 | ug/L | ND | 6.5 J | 10 | 1.6 J | 39 | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | 5 | ug/L | ND | ND | ND | ND | ND | ND |
| 86-74-8 | Carbazole | -- | ug/L | ND | ND | 2.6 J | ND | 4.4 J | 2.2 J |
| 132-64-9 | Dibenzofuran | -- | ug/L | 1.7 J | ND | 1.8 J | ND | 4 J | 1.3 J |
| 105-67-9 | 2,4-Dimethylphenol | 50 (G) | ug/L | ND | ND | ND | ND | ND | ND |
| 50-32-8 | 2-Methylphenol | 1 | ug/L | ND | ND | ND | ND | ND | ND |
| 87-86-5 | 3+4-Methylphenols | 1 | ug/L | ND | ND | ND | ND | ND | ND |
| 87-86-5 | Pentachlorophenol | 1 | ug/L | ND | ND | ND | 13 | ND | ND |
| 108-95-2 | Phenol | 1 | ug/L | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 (G) | ug/L | 36 | 16 | 27 | 2.5 J | 110 | 84 |
| 208-96-8 | Acenaphthylene | -- | ug/L | 5.9 J | 3.5 J | 6.6 J | ND | 10 J | 1.6 J |
| 120-12-7 | Anthracene | 50 (G) | ug/L | ND | 1.8 J | 2.9 J | ND | 6.7 J | ND |
| 206-44-0 | Fluoranthene | 50 (G) | ug/L | ND | 1.8 J | 1.5 J | ND | 2.7 J | ND |
| 86-73-7 | Fluorene | 50 (G) | ug/L | 2.2 J | 11 | 13 | 1.5 J | 37 | 11 |
| 91-57-6 | 2-Methylnaphthalene | -- | ug/L | ND | 45 | 170 | 29 | 520 | 98 |
| 91-20-3 | Naphthalene | 10 (G) | ug/L | ND | 460 | 910 | 380 | 4400 | 15 |
| 85-01-8 | Phenanthrene | 50 (G) | ug/L | ND | 13 | 17 | 2.5 J | 38 | 9.1 J |
| 129-00-0 | Pyrene | 50 (G) | ug/L | ND | 2.8 J | 2.7 J | ND | 3.7 J | ND |
| | **Total PAHs** | -- | | **44.1** | **554.9** | **1150.7** | **415.5** | **5128.1** | **218.7** |
| | **Total SVOCs** | -- | | **45.8** | **561.4** | **1198.2** | **430.1** | **5182.7** | **222.2** |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
(6) J indicates an estimated concentration.
(7) R indicates result was rejected based on validation.
(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 2<br>Y2831-02<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 5<br>Y2831-01<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 7<br>Y2690-04<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW- 8<br>Y2831-06<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 9<br>Y2831-05<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-10<br>Y2690-01<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | |
| 7429-90-5 | Aluminum | -- | ug/L | 202 | 2820 | 98.4 | 291 | ND | 2860 |
| 7440-36-0 | Antimony | 3 | ug/L | ND | ND | ND | ND | ND | ND |
| 7440-38-2 | Arsenic | 25 | ug/L | ND | ND | 15 | ND | ND | 3.21 J |
| 7440-39-3 | Barium | 1000 | ug/L | 93.1 | 88.6 | 35.3 J | 712 | 728 | 527 |
| 7440-70-2 | Calcium | -- | ug/L | 66500 | 77400 | 199000 | 401000 | 231000 | 191000 |
| 7440-47-3 | Chromium | 50 | ug/L | ND | 6.47 | 2.56 J | ND | ND | 7.18 |
| 7440-48-4 | Cobalt | -- | ug/L | ND | ND | ND | ND | ND | 4.03 J |
| 7440-50-8 | Copper | 200 | ug/L | ND | 20.9 | 4.59 J | ND | ND | 7.15 J |
| 7439-89-6 | Iron | 300 | ug/L | 2050 | 1530 | 437 | 16000 | 14100 | 19700 |
| 7439-92-1 | Lead | 25 | ug/L | ND | 8.49 | ND | 6.95 | ND | 10.1 |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | 5180 | 286 J | 772 J | 65900 | 90600 | 52800 |
| 7439-96-5 | Manganese | 300 | ug/L | 395 | 22.4 | 11.2 | 1290 | 6430 | 8340 |
| 7439-97-6 | Mercury | 0.7 | ug/L | ND | ND | ND | ND | ND | ND |
| 7440-02-0 | Nickel | 100 | ug/L | ND | 11.5 J | 7.05 J | ND | ND | 4.75 J |
| 7440-09-7 | Potassium | -- | ug/L | 47700 J | 22600 j | 62400 | 70600 J | 35700 J | 34900 |
| 7782-49-2 | Selenium | 10 | ug/L | ND | ND | 4.79 J | ND | ND | ND |
| 7440-22-4 | Silver | 50 | ug/L | ND | ND | 1.19 J | ND | ND | ND |
| 7440-23-5 | Sodium | 20000 | ug/L | 89900 | 235000 | 1250000 | 319000 | 169000 | 203000 |
| 7440-62-2 | Vanadium | -- | ug/L | ND | 14.9 J | 14.4 J | ND | ND | 9.52 J |
| 7440-66-6 | Zinc | 2000 (G) | ug/L | 35.1 | 65.7 | 39.1 | 39.7 | 31.5 | 64.4 |
| 57-12-5 | Cyanide | 200 | ug/L | 10 U | 28 | 10 U | 182 | 70 | 104 |
| | DISSOLVED METALS | | | | | | | | |
| 7429-90-5 | Aluminum | -- | ug/L | 17.2 U | NA | NA | NA | NA | NA |
| 7440-39-3 | Barium | 1000 | ug/L | 68.6 | NA | NA | NA | NA | NA |
| 7440-70-2 | Calcium | -- | ug/L | 61800 | NA | NA | NA | NA | NA |
| 7439-89-6 | Iron | 300 | ug/L | 807 | NA | NA | NA | NA | NA |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | 4510 | NA | NA | NA | NA | NA |
| 7439-96-5 | Manganese | 300 | ug/L | 345 | NA | NA | NA | NA | NA |
| 7440-09-7 | Potassium | -- | ug/L | 46400 J | NA | NA | NA | NA | NA |
| 7440-23-5 | Sodium | 20000 | ug/L | 80100 | NA | NA | NA | NA | NA |
| 7440-66-6 | Zinc | 2000 (G) | | 25.8 | NA | NA | NA | NA | NA |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
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(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
(6) J indicates an estimated concentration.
(7) R indicates result was rejected based on validation.
(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | Dup of MW-10<br>MW-100<br>Y2690-02<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW-11<br>Y2690-03<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW-16<br>Y2633-17<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 | MW-19<br>Y2831-03<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-20<br>Y2831-04<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-55<br>Y2633-14<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | |
| 67-64-1 | Acetone | 50 (G) | ug/L | R | 42 J | R | 21 J | ND | R |
| 71-43-2 | Benzene | 1 | ug/L | 2300 | 11 | 1.3 J | 32000 | 4700 | ND |
| 78-93-3 | 2-Butanone | 50 (G) | ug/L | ND | ND | ND | 16 J | ND | ND |
| 75-15-0 | Carbon Disulfide | -- | ug/L | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | -- | ug/L | 2.3 J | 2 J | ND | 2.9 J | 1.1 J | ND |
| 100-41-4 | Ethyl Benzene | 5 | ug/L | 18 | ND | ND | 8000 | 740 | ND |
| 98-82-8 | Isopropylbenzene | 5 | ug/L | 50 | 2.2 J | ND | 94 | 64 | ND |
| 1634-04-4 | Methyl tert-butyl Ether | -- | ug/L | 28 | ND | ND | ND | ND | ND |
| 108-87-2 | Methylcyclohexane | -- | ug/L | 1.6 J | 1.7 J | ND | ND | ND | ND |
| 100-42-5 | Styrene | 5 | ug/L | ND | ND | ND | 28 | 1.8 J | ND |
| 108-88-3 | Toluene | 5 | ug/L | 2.1 J | 1.2 J | ND | 13000 | 56 | ND |
| 136777-61-2 | m/p-Xylenes | 5 | ug/L | 15 | ND | ND | 6800 | 130 | ND |
| 1330-20-7 | o-Xylene | 5 | ug/L | 13 | 1 J | ND | 3000 | 210 | ND |
| | **Total VOCs** | -- | | **2430** | **61.1** | **1.3** | **62961.9** | **5902.9** | **ND** |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
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(7) R indicates result was rejected based on validation.
(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | Dup of MW-10<br>MW-100<br>Y2690-02<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW-11<br>Y2690-03<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW-16<br>Y2633-17<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 | MW-19<br>Y2831-03<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-20<br>Y2831-04<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-55<br>Y2633-14<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | SEMIVOLATILES | | | | | | | | |
| 98-86-2 | Acetophenone | -- | ug/L | ND | ND | ND | 16 | ND | ND |
| 100-52-7 | Benzaldehyde | -- | ug/L | ND | ND | ND | ND | ND | ND |
| 92-52-4 | 1,1-Biphenyl | 5 | ug/L | ND | ND | ND | 17 | 39 | ND |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | 5 | ug/L | ND | ND | 1.6 J | ND | ND | ND |
| 86-74-8 | Carbazole | -- | ug/L | 2.4 J | ND | ND | 16 | 3.8 J | ND |
| 132-64-9 | Dibenzofuran | -- | ug/L | 1.4 J | ND | ND | 6.7 J | ND | ND |
| 105-67-9 | 2,4-Dimethylphenol | 50 (G) | ug/L | ND | ND | ND | 39 | ND | ND |
| 50-32-8 | 2-Methylphenol | 1 | ug/L | ND | ND | ND | 21 | ND | ND |
| 87-86-5 | 3+4-Methylphenols | 1 | ug/L | ND | ND | ND | 23 | ND | ND |
| 87-86-5 | Pentachlorophenol | 1 | ug/L | ND | ND | ND | ND | ND | ND |
| 108-95-2 | Phenol | 1 | ug/L | ND | ND | ND | 53 J | 6.7 J | ND |
| | PAHs | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 (G) | ug/L | 91 | ND | ND | 27 | 150 | ND |
| 208-96-8 | Acenaphthylene | -- | ug/L | ND | ND | ND | 4.9 J | 9.9 J | ND |
| 120-12-7 | Anthracene | 50 (G) | ug/L | ND | ND | ND | 4.9 J | 10 J | ND |
| 206-44-0 | Fluoranthene | 50 (G) | ug/L | ND | ND | ND | 3.5 J | 3.9 J | ND |
| 86-73-7 | Fluorene | 50 (G) | ug/L | 12 | ND | ND | 60 | 44 | ND |
| 91-57-6 | 2-Methylnaphthalene | -- | ug/L | 110 | ND | ND | 130 | 290 | ND |
| 91-20-3 | Naphthalene | 10 (G) | ug/L | 16 | 2.1 J | ND | 1400 | 2400 | ND |
| 85-01-8 | Phenanthrene | 50 (G) | ug/L | 9.9 J | ND | ND | 61 | 57 | ND |
| 129-00-0 | Pyrene | 50 (G) | ug/L | ND | ND | ND | 4.1 J | 4.8 J | ND |
| | **Total PAHs** | -- | | **238.9** | **2.1** | **ND** | **1695.4** | **2969.6** | **ND** |
| | **Total SVOCs** | -- | | **242.7** | **2.1** | **1.6** | **1887.1** | **3019.1** | **ND** |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
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(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
(6) J indicates an estimated concentration.
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(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2007
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-100<br>Y2690-02<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | Dup of MW-10<br>MW-11<br>Y2690-03<br>Chemtech<br>Y2690<br>WATER<br>5/10/2007<br>6/25/2007 | MW-16<br>Y2633-17<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 | MW-19<br>Y2831-03<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-20<br>Y2831-04<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-55<br>Y2633-14<br>Chemtech<br>Y2633<br>WATER<br>5/8/2007<br>6/24/2007 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | INORGANICS | | | | | | | | |
| 7429-90-5 | Aluminum | -- | ug/L | 2650 | 179 | 176 | ND | ND | 85.2 |
| 7440-36-0 | Antimony | 3 | ug/L | ND | ND | 13.2 J | ND | ND | 34.6 |
| 7440-38-2 | Arsenic | 25 | ug/L | 4.87 J | 5.92 J | ND | 4.78 J | ND | ND |
| 7440-39-3 | Barium | 1000 | ug/L | 517 | 219 | 46.7 J | 870 | 907 | 29.3 J |
| 7440-70-2 | Calcium | -- | ug/L | 194000 | 167000 | 172000 J | 195000 | 941000 | 91400 J |
| 7440-47-3 | Chromium | 50 | ug/L | 5.51 | 2.15 J | 4.13 J | ND | ND | 7.1 |
| 7440-48-4 | Cobalt | -- | ug/L | 3.64 J | ND | 2.25 J | ND | ND | 5.84 J |
| 7440-50-8 | Copper | 200 | ug/L | 5.67 J | 1.2 J | 9.1 J | ND | ND | 10.7 |
| 7439-89-6 | Iron | 300 | ug/L | 19400 | 4080 | 287 | 24500 | 35200 | 1250 |
| 7439-92-1 | Lead | 25 | ug/L | 6.57 | ND | 2.33 J | ND | ND | 2.07 J |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | 53500 | 13900 | 185000 | 43000 | 42400 | 233000 |
| 7439-96-5 | Manganese | 300 | ug/L | 8510 | 4570 | 21.1 | 12500 | 13400 | 14.3 |
| 7439-97-6 | Mercury | 0.7 | ug/L | ND | ND N | 0.12 J | ND | ND | ND |
| 7440-02-0 | Nickel | 100 | ug/L | 4.37 J | 2.1 J | 5.64 J | ND | ND | 4.94 J |
| 7440-09-7 | Potassium | -- | ug/L | 35000 | 15300 | 117000 J | 45700 J | 90800 J | 108000 J |
| 7782-49-2 | Selenium | 10 | ug/L | ND | ND | ND | ND | ND | ND |
| 7440-22-4 | Silver | 50 | ug/L | ND | ND | 3.24 J | ND | ND | 7.92 |
| 7440-23-5 | Sodium | 20000 | ug/L | 208000 | 39500 | 2440000 J | 652000 | 1080000 | 2470000 J |
| 7440-62-2 | Vanadium | -- | ug/L | 8.33 J | 2.51 J | 9.95 J | ND | ND | 6.68 J |
| 7440-66-6 | Zinc | 2000 (G) | ug/L | 64.8 | 39.5 | 46.3 | 39.5 | 31.3 | 48.6 |
| 57-12-5 | Cyanide | 200 | ug/L | 114 | 42 | 10 U | 18 | 39 | 10 U |
| | DISSOLVED METALS | | | | | | | | |
| 7429-90-5 | Aluminum | -- | ug/L | NA | 179 | NA | NA | NA | NA |
| 7440-39-3 | Barium | 1000 | ug/L | NA | 171 | NA | NA | NA | NA |
| 7440-70-2 | Calcium | -- | ug/L | NA | 165000 | NA | NA | NA | NA |
| 7439-89-6 | Iron | 300 | ug/L | NA | 394 | NA | NA | NA | NA |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | NA | 14300 | NA | NA | NA | NA |
| 7439-96-5 | Manganese | 300 | ug/L | NA | 4330 | NA | NA | NA | NA |
| 7440-09-7 | Potassium | -- | ug/L | NA | 15900 | NA | NA | NA | NA |
| 7440-23-5 | Sodium | 20000 | ug/L | NA | 42500 | NA | NA | NA | NA |
| 7440-66-6 | Zinc | 2000 (G) | | NA | 31.1 | NA | NA | NA | NA |

Notes:
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(3) (G) indicates guidance value.
(4) NA indicates compound was not analyzed for.
(5) ND indicated compound was not detected.
(6) J indicates an estimated concentration.
(7) R indicates result was rejected based on validation.
(8) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-2
OU-1 Summary of Groundwater Analytical Data - March 2006
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>West 45th Street Operable Unit 1<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-7<br>C6C200175-001<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-7Diss<br>X1996-07<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-8<br>C6C200175-004<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9<br>C6C200175-002<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9Diss<br>X1996-08<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9<br>MW-900<br>C6C200175-003<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9Diss<br>MW-900Diss<br>X1996-09<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-10<br>C6D010175-001<br>STL-Pittsburgh<br>C6D010175<br>WATER<br>3/31/2006<br>5/12/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | VOLATILES | | | | | | | | | | |
| 67-64-1 | Acetone | 50 (G) | ug/L | 490 J | NA | ND | ND | NA | ND | NA | ND |
| 71-43-2 | Benzene | 1 | ug/L | 200 | NA | 1200 J | 6000 J | NA | 4800 J | NA | ND |
| 78-93-3 | 2-Butanone | 50 (G) | ug/L | 94 J | NA | ND | ND | NA | ND | NA | ND |
| 75-15-0 | Carbon Disulfide | -- | ug/L | 5.7 | NA | ND | ND | NA | ND | NA | ND |
| 67-66-3 | Chloroform | 7 | ug/L | 5.1 | NA | ND | ND | NA | ND | NA | ND |
| 110-82-7 | Cyclohexane | -- | ug/L | ND | NA | 3.1 J | 2.7 J | NA | 2.7 J | NA | R |
| 107-06-2 | 1,2-Dichloroethane | 0.6 | ug/L | ND | NA | ND | ND | NA | ND | NA | 9.4 J |
| 156-59-2 | cis-1,2-Dichloroethene | 5 | ug/L | ND | NA | ND | ND | NA | ND | NA | 30 J |
| 100-41-4 | Ethyl Benzene | 5 | ug/L | 530 J | NA | 640 J | 1700 J | NA | 2200 J | NA | ND |
| 591-78-6 | 2-Hexanone | 50 (G) | ug/L | 2.6 J | NA | ND | ND | NA | ND | NA | ND |
| 98-82-8 | Isopropylbenzene | 5 | ug/L | 39 | NA | 29 | 100 | NA | 100 | NA | ND |
| 108-87-2 | Methylcyclohexane | -- | ug/L | ND | NA | 8.9 J | 2.6 J | NA | 2.7 J | NA | ND |
| 100-42-5 | Styrene | 5 | ug/L | 3.7 J | NA | 8.7 | 21 | NA | ND | NA | ND |
| 127-18-4 | Tetrachloroethene | 5 | ug/L | ND | NA | ND | ND | NA | ND | NA | 0.73 J |
| 108-88-3 | Toluene | 5 | ug/L | 300 J | NA | 890 J | 1500 J | NA | 1100 J | NA | ND |
| 136777-61-2 | m/p-Xylenes | 5 | ug/L | 290 | NA | 550 J | 1600 J | NA | 1200 J | NA | ND |
| 1330-20-7 | o-Xylene | 5 | ug/L | 350 J | NA | 270 J | 1200 J | NA | 810 J | NA | ND |
| | **Total VOCs** | -- | | 2310.1 | | 3599.7 | 12126.3 | | 10215.4 | | 40.13 |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) N indicates persumptive evidence of a compound.
(5) NA indicates compound was not analyzed for.
(6) ND indicates compound was not detected.
(7) J indicates an estimated concentration.
(8) R indicates rejected data.
(9) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-2
OU-1 Summary of Groundwater Analytical Data - March 2006
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>West 45th Street Operable Unit 1<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-7<br>C6C200175-001<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-7Diss<br>X1996-07<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-8<br>C6C200175-004<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9<br>C6C200175-002<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9Diss<br>X1996-08<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9<br>MW-900<br>C6C200175-003<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9Diss<br>MW-900Diss<br>X1996-09<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-10<br>C6D010175-001<br>STL-Pittsburgh<br>C6D010175<br>WATER<br>3/31/2006<br>5/12/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | SEMIVOLATILES | | | | | | | | | | |
| 98-86-2 | Acetophenone | -- | ug/L | 8.4 J | NA | ND | ND | NA | ND | NA | ND |
| 92-52-4 | 1,1-Biphenyl | 5 | ug/L | 26 | NA | 1.8 J | 44 | NA | 42 | NA | 1.9 J |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | 5 | ug/L | 3 J | NA | ND | ND | NA | ND | NA | ND |
| 86-74-8 | Carbazole | -- | ug/L | 7.1 J | NA | ND | 6.1 J | NA | 6.1 J | NA | 1.8 J |
| 132-64-9 | Dibenzofuran | -- | ug/L | ND | NA | ND | 4.4 J | NA | 4.1 J | NA | ND |
| 105-67-9 | 2,4-Dimethylphenol | 50 (G) | ug/L | 29 | NA | ND | ND | NA | ND | NA | ND |
| 50-32-8 | 2-Methylphenol | 1 | ug/L | 3.6 J | NA | ND | ND | NA | ND | NA | ND |
| 87-86-5 | 3+4-Methylphenols | 1 | ug/L | 17 | NA | 2.9 J | ND | NA | ND | NA | ND |
| 108-95-2 | Phenol | 1 | ug/L | 12 J | NA | 7.3 J | 7.9 J | NA | 9.3 J | NA | 12 |
| | PAHs | | | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 (G) | ug/L | 64 | NA | 2.8 J | 150 | NA | 130 | NA | 130 |
| 208-96-8 | Acenaphthylene | -- | ug/L | 28 | NA | ND | 12 | NA | 11 J | NA | 1.6 J |
| 120-12-7 | Anthracene | 50 (G) | ug/L | 34 | NA | ND | 11 J | NA | 9.8 J | NA | ND |
| 120-12-7 | Benzo(a)anthracene | 0.002 | ug/L | 40 | NA | ND | 3.3 J | NA | 2.3 J | NA | ND |
| 50-32-8 | Benzo(a)pyrene | ND | ug/L | 27 | NA | ND | 2.1 J | NA | ND | NA | ND |
| 205-99-2 | Benzo(b)fluoranthene | 0.002 | ug/L | 28 JN | NA | ND | 1.4 J | NA | ND | NA | ND |
| 191-24-2 | Benzo(g,h,i)perylene | -- | ug/L | 4.2 J | NA | ND | ND | NA | ND | NA | ND |
| 207-08-9 | Benzo(k)fluoranthene | 0.002 | ug/L | 31 JN | NA | ND | ND | NA | ND | NA | ND |
| 218-01-9 | Chrysene | 0.002 | ug/L | 46 | NA | ND | 2.8 J | NA | 2.1 J | NA | ND |
| 53-70-3 | Dibenz(a,h)anthracene | -- | ug/L | 1.7 J | NA | ND | ND | NA | ND | NA | ND |
| 206-44-0 | Fluoranthene | 50 (G) | ug/L | 44 | NA | ND | 3 J | NA | 2.4 J | NA | ND |
| 86-73-7 | Fluorene | 50 (G) | ug/L | 43 | NA | ND | 38 | NA | 36 | NA | 13 |
| 91-57-6 | 2-Methylnaphthalene | -- | ug/L | 360 | NA | 45 | 430 J | NA | 590 | NA | 130 |
| 91-20-3 | Naphthalene | 10 (G) | ug/L | 1700 | NA | 590 | 4600 | NA | 4400 | NA | 36 |
| 85-01-8 | Phenanthrene | 50 (G) | ug/L | 130 | NA | 2.1 J | 53 | NA | 48 | NA | 8.2 J |
| 129-00-0 | Pyrene | 50 (G) | ug/L | 64 | NA | ND | 10 J | NA | 8.2 J | NA | ND |
| | | | ug/L | | | | | | | | |
| | **Total PAHs** | -- | | 2644.9 | | 639.9 | 5316.6 | | 5239.8 | | 318.8 |
| | **Total SVOCs** | -- | ug/L | 2751 | | 651.9 | 5379 | | 5301.3 | | 334.5 |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) N indicates persumptive evidence of a compound.
(5) NA indicates compound was not analyzed for.
(6) ND indicates compound was not detected.
(7) J indicates an estimated concentration.
(8) R indicates rejected data.
(9) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-2
OU-1 Summary of Groundwater Analytical Data - March 2006
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>West 45th Street Operable Unit 1<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-7<br>C6C200175-001<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-7Diss<br>X1996-07<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-8<br>C6C200175-004<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9<br>C6C200175-002<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | MW-9Diss<br>X1996-08<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9<br>MW-900<br>C6C200175-003<br>STL-Pittsburgh<br>C6C200175<br>WATER<br>3/17/2006<br>5/11/2006 | Dup of MW-9Diss<br>MW-900Diss<br>X1996-09<br>Chemtech<br>X1996<br>WATER<br>3/17/2006<br>5/11/2006 | MW-10<br>C6D010175-001<br>STL-Pittsburgh<br>C6D010175<br>WATER<br>3/31/2006<br>5/12/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | INORGANICS | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | ug/L | 1280 | 849 | 84.9 J | 109 J | 95.7 J | 93.4 J | 97.7 J | 282 |
| 7440-36-0 | Antimony | 3 | ug/L | ND | 4.4 J | 51 J | 13 J | ND | ND | 6.3 J | 4.77 J |
| 7440-38-2 | Arsenic | 25 | ug/L | 10.6 | 10.1 | ND | 11.2 | ND | 10.2 | ND | 4.94 J |
| 7440-39-3 | Barium | 1000 | ug/L | 94.4 J | 84.1 J | 635 J | 1060 J | 855 J | 1070 J | 979 J | 622 |
| 7440-41-7 | Beryllium | 3 (G) | ug/L | 0.23 J | ND | 0.52 J | 0.19 J | ND | 0.11 J | 0.17 J | 1.04 J |
| 7440-43-9 | Cadmium | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 2.72 J |
| 7440-70-2 | Calcium | -- | ug/L | 379000 J | 362000 J | 404000 J | 245000 J | 236000 J | 245000 J | 260000 J | 164000 |
| 7440-47-3 | Chromium | 50 | ug/L | 1.3 J | ND | 13.2 J | 11 J | 8 J | 10.6 J | 9.5 J | 1.92 J |
| 7440-48-4 | Cobalt | -- | ug/L | 0.86 J | 0.4 J | 9.1 J | 3 J | ND | ND | ND | 3.71 J |
| 7440-50-8 | Copper | 200 | ug/L | 19.3 J | 14 J | ND | ND | ND | ND | ND | ND |
| 7439-89-6 | Iron | 300 | ug/L | 1130 J | 198 | 17200 J | 18600 J | 1170 J | 18700 J | 1930 J | 11200 J |
| 7439-92-1 | Lead | 25 | ug/L | 10.5 | ND | ND | ND | ND | ND | 32.2 | 3.38 J |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | 925 J | ND | 66500 J | 91200 J | 89400 J | 91800 J | 97800 J | 48600 |
| 7439-96-5 | Manganese | 300 | ug/L | 19.7 | 5.2 J | 1230 | 7750 | 7290 | 7760 | 8040 | 7660 |
| 7439-97-6 | Mercury | 0.7 | ug/L | 0.21 | ND | ND | 0.05 J | ND | ND | ND | 0.15 J |
| 7440-02-0 | Nickel | 100 | ug/L | 24 J | 17.9 J | 2.7 J | ND | ND | ND | ND | ND |
| 7440-09-7 | Potassium | -- | ug/L | 116000 J | 115000 J | 65900 J | 30400 J | 29700 J | 30300 J | 33800 J | 31900 J |
| 7782-49-2 | Selenium | 10 | ug/L | 25.4 | 27 | ND | ND | 3.9 J | ND | 5 J | ND |
| 7440-22-4 | Silver | 50 | ug/L | ND | ND | ND | ND | ND | ND | ND | 3.15 J |
| 7440-23-5 | Sodium | 20000 | ug/L | 1200000 J | 1240000 J | 278000 J | 158000 J | 150000 J | 157000 J | 170000 J | 222000 |
| 7440-62-2 | Vanadium | -- | ug/L | 13 J | 12 J | ND | ND | ND | 0.7 J | ND | 2.14 J |
| 7440-66-6 | Zinc | 2000 (G) | ug/L | 60.4 J | 35.8 J | 18.5 J | 20.1 J | 16.7 J | 22.9 J | 17.8 J | 17.8 J |
| 57-12-5 | Cyanide | 200 | ug/L | ND | NA | 185 J | 50 J | NA | 39 J | NA | 158 |
| 57-12-5A | Available Cyanide | -- | ug/L | ND | NA | ND | ND | NA | ND | NA | 5.9 |

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (October 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) N indicates persumptive evidence of a compound.
(5) NA indicates compound was not analyzed for.
(6) ND indicates compound was not detected.
(7) J indicates an estimated concentration.
(8) R indicates rejected data.
(9) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2003
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Works<br>Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/ Guidance Values | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-1<br>R2496-08<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-2<br>R2496-03<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-3<br>R2496-01<br>NA<br>Chemtech<br>R2496<br>Water<br>5/13/2003<br>6/14/2003 | MW-4<br>R2496-07<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-4DUP<br>R2496-09<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-5<br>R2496-04<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | |
| 71-43-2 | Benzene | 1 | ug/L | 11000 | 280 | 45000 | 4100 | 4000 | 1000 J |
| 100-41-4 | Ethyl Benzene | 5 | ug/L | 3100 | 33 | 13000 | 4200 | 4300 | 990 J |
| 1634-04-4 | Methyl tert-butyl Ether | NS | ug/L | 4.9 J | ND | ND | ND | ND | 1.3 J |
| 100-42-5 | Styrene | 5 | ug/L | 3100 | 1.8 JN | 10000 | 390 JN | 440 J | 160 J |
| 108-88-3 | Toluene | 5 | ug/L | 16000 | 6.6 | 66000 | 3300 | 3400 | 790 J |
| 136777-61-2 | m/p-Xylene | 5 | ug/L | 5500 | 10 | 19000 | 3400 | 3600 | 690 J |
| 1330-20-7 | o-Xylene | 5 | ug/L | 2400 | 20 JN | 8200 | 1400 JN | 1500 | 390 JN |
| | **Total VOCs** | | **ug/L** | **41104.9** | **351.4** | **161200** | **16790** | **17240** | **4021.3** |
| | SEMIVOLATILES | | | | | | | | |
| 105-67-9 | 2,4-Dimethylphenol | 50 (G) | ug/L | ND | ND | 9.2 J | ND | ND | ND |
| 50-32-8 | 2-Methylphenol | 1 | ug/L | ND | ND | 14 | ND | ND | ND |
| 87-86-5 | 3+4-Methylphenols | 1 | ug/L | 28 | ND | 13 | 2.3 J | 2.6 J | ND |
| 86-74-8 | Carbazole | NS | ug/L | 16 | ND | 24 | 18 | 20 | 3.4 J |
| 132-64-9 | Dibenzofuran | NS | ug/L | 4.3 J | ND | 8.1 J | 4.1 J | 4.9 J | 3.2 J |
| | PAHs | | | | | | | | |
| 83-32-9 | Acenaphthene | 20 (G) | ug/L | 10 J | 33 | 21 | 69 | 80 | 52 |
| 208-96-8 | Acenaphthylene | NS | ug/L | 58 | 4.7 J | 70 | 75 | 78 J | 11 |
| 120-12-7 | Anthracene | 50 (G) | ug/L | 5.7 J | ND | 8.9 J | 6.5 J | 7.7 J | 4 J |
| 206-44-0 | Fluoranthene | 50 (G) | ug/L | 2.8 J | 1.4 J | 6.3 J | 2.8 J | 3.2 J | 2.4 J |
| 86-73-7 | Fluorene | 50 (G) | ug/L | ND | 4.7 J | 78 J | 36 | 43 | 23 |
| 91-57-6 | 2-Methylnaphthalene | NS | ug/L | 300 | ND | 220 | 550 | 630 | 190 |
| 91-20-3 | Naphthalene | 10 (G) | ug/L | 1800 | ND | 1600 | 2300 | 2300 | 290 |
| 85-01-8 | Phenanthrene | 50 (G) | ug/L | 46 | 2 J | 95 J | 59 | 70 | 8.7 J |
| 129-00-0 | Pyrene | 50 (G) | ug/L | 3.8 J | 1.8 J | 7.8 J | 3.4 J | 4.1 J | 3 J |
| | **Total PAHs** | | | **2226.3** | **47.6** | **2107** | **3101.7** | **3216** | **584.1** |
| | **Total SVOCs** | | **ug/L** | **2274.6** | **47.6** | **2175.3** | **3126.1** | **3243.5** | **590.7** |

Table 6-1
OU-1 Summary of Groundwater Analytical Data - May 2003
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Works<br>Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/ Guidance Values | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-1<br>R2496-08<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-2<br>R2496-03<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-3<br>R2496-01<br>NA<br>Chemtech<br>R2496<br>Water<br>5/13/2003<br>6/14/2003 | MW-4<br>R2496-07<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-4DUP<br>R2496-09<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-5<br>R2496-04<br>NA<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | |
| | METALS | | | | | | | | |
| 7429-90-5 | Aluminum | NS | ug/L | 110 J | 875 | 1250 | 78 J | 69.8 J | 55.1 J |
| 7440-36-0 | Antimony | 3 | ug/L | 17.8 J | 16.8 J | 20.3 J | ND | 15.4 J | 14.8 J |
| 7440-38-2 | Arsenic | 25 | ug/L | 5.9 J | ND | 13 | 6.3 J | 7.8 J | ND |
| 7440-39-3 | Barium | 1000 | ug/L | 90.9 J | 105 J | 87.1 J | 55.6 J | 59.2 J | 148 J |
| 7440-70-2 | Calcium | NS | ug/L | 78000 | 78600 | 48800 | 41700 | 44200 | 102000 |
| 7440-47-3 | Chromium | 50 | ug/L | 1.5 J | 2.9 J | 4.1 J | ND | 2.5 J | 2.1 J |
| 7440-48-4 | Cobalt | NS | ug/L | 3.5 J | ND | 2.4 J | ND | ND | ND |
| 7440-50-8 | Copper | 200 | ug/L | ND | 3.3 J | 6.2 J | ND | ND | ND |
| 57-12-5 | Cyanide | 200 | ug/L | 569 | 25 | 34 | ND | 151 | 21 |
| 7439-89-6 | Iron | 300 | ug/L | 524 | 2370 | 2530 | 334 | 384 | 634 |
| 7439-92-1 | Lead | 25 | ug/L | ND | ND | 24.4 | 4.8 | ND | ND |
| 7439-95-4 | Magnesium | 35000 (G) | ug/L | 9490 | 19100 | 4540 J | 9200 | 9910 | 19000 |
| 7439-96-5 | Manganese | 300 | ug/L | 81.4 J | 992 J | 124 J | 245 J | 267 J | 662 J |
| 7440-02-0 | Nickel | 100 | ug/L | ND | 2.7 J | ND | ND | 6.8 J | ND |
| 7440-09-7 | Potassium | NS | ug/L | 40200 | 22300 | 21400 | 33100 | 36200 | 23500 |
| 7440-23-5 | Sodium | 20000 | ug/L | 150000 | 149000 | 213000 | 95600 | 101000 | 116000 |
| 7440-28-0 | Thallium | 0.5 | ug/L | ND | ND | ND | ND | 5 J | ND |
| 7440-62-2 | Vanadium | NS | ug/L | ND | 7 J | 10.6 J | 7.5 J | 9.7 J | ND |
| 7440-66-6 | Zinc | 2000 (G) | ug/L | 13.9 J | 20.7 | 22.8 | 16.1 J | 17.1 J | 11.2 J |
| | OTHERS | | | | | | | | |
| | Available Cyanide* | NS | ug/L | 63 | 11 | 90 | 14 | 18 | 80 |

= Indicates a concentration above NYSDEC groundwater standard or guidance value.
(G) = Indicates guidance value.
J = Indicates an estimated value.
ND = Indicates constituent was not detected.
NA = Indicates constituent was not analyzed for.
NS = No standard or guidance value available.
* = Indicates results were not validated.

Table 7
OU-1 Summary of Soil Gas Analytical Data
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street Operable Unit 1<br>Validated Air Analytical Data<br>Detected Compound Summary | | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-9 (1')<br>0602477R1-04A<br>1'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | MW-9 (6')<br>0602477R1-02A<br>6'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | SB-27 (1')<br>0602477R1-06A<br>1'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | SB-27 (1')DUP<br>0602477R1-06AA<br>1'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | SB-27 (6')<br>0602477R1-03A<br>6'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | SG-2 (1')<br>0602477R1-05A<br>1'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 | SG-2 (6')<br>0602477R1-01A<br>6'<br>Air Toxics<br>0602477R1<br>Air<br>2/9/2006<br>4/27/2006 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | UNITS: | | | | | | | |
| | VOLATILES | | | | | | | | |
| 75-71-8 | Freon 12 | uG/m3 | 3.1 J | 3 | 3 | 2.7 | 3 | 3 | 3 |
| 74-87-3 | Chloromethane | uG/m3 | ND | 0.59 | ND | ND | ND | 1 | 0.41 |
| 106-99-0 | 1,3-Butadiene | uG/m3 | ND | ND | ND | ND | ND | ND | ND |
| 75-69-4 | Freon 11 | uG/m3 | ND | 1.7 | 4.7 | 4.6 | 4.4 | 1.7 | 1.6 |
| 64-17-5 | Ethanol | uG/m3 | 14 | 7.6 | 12 | 11 | 7.1 | 9.1 | 6.4 |
| 67-64-1 | Acetone | uG/m3 | 18 | 11 | 15 | 15 | 6.1 | 21 | 14 |
| 67-63-0 | 2-Propanol | uG/m3 | ND | ND | ND | ND | ND | ND | ND |
| 75-15-0 | Carbon disulfide | uG/m3 | ND | 6.5 | ND | ND | ND | ND | ND |
| 75-09-2 | Methylene chloride | uG/m3 | 16 J | 2.5 J | ND | ND | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl ether | uG/m3 | 13 | ND | ND | ND | ND | ND | ND |
| 110-54-3 | Hexane | uG/m3 | 610 | 57 | ND | ND | ND | ND | ND |
| 78-93-3 | Methyl Ethyl Ketone | uG/m3 | ND | ND | 2.8 | 2.9 | 2 | 3.6 | 2.2 |
| 67-66-3 | Chloroform | uG/m3 | ND | ND | ND | ND | ND | ND | 1.2 |
| 71-55-6 | 1,1,1-Trichloroethane | uG/m3 | ND | ND | ND | ND | ND | ND | ND |
| 110-82-7 | Cyclohexane | uG/m3 | 350 | 22 | ND | ND | ND | 9 | ND |
| 71-43-2 | Benzene | uG/m3 | 45 | 3.8 | 0.9 | 0.91 | 1.2 | 3.8 | 1.7 |
| 142-82-5 | Heptane | uG/m3 | 86 | 24 | ND | ND | ND | 20 | ND |
| 79-01-6 | Trichloroethene | uG/m3 | ND | ND | ND | ND | ND | 2.2 | 2 |
| 108-88-3 | Toluene | uG/m3 | 13 | 14 | 5.7 | 5.8 | 7.2 | 100 | 8.2 |
| 127-18-4 | Tetrachloroethene | uG/m3 | 22 | 30 | 23 | 23 | 33 | 23 | 38 |
| 108-90-7 | Chlorobenzene | uG/m3 | ND | ND | ND | ND | ND | 1.6 | ND |
| 100-41-4 | Ethylbenzene | uG/m3 | ND | 7.6 | 2.7 | 2.9 | 2.6 | 38 | 2.9 |
| 1330-20-7 | Xylene (m,p) | uG/m3 | 7.6 | 17 | 10 | 10 | 9.2 | 100 | 10 |
| 95-47-6 | Xylene (o) | uG/m3 | 3.9 | 13 | 4.5 | 4.7 | 3.9 | 38 | 4.1 |
| 100-42-5 | Styrene | uG/m3 | ND | ND | 0.57 | 0.54 J | ND | ND | ND |
| 98-82-8 | Cumene | uG/m3 | ND | ND | ND | ND | ND | 5.7 | ND |
| 103-65-1 | Propylbenzene | uG/m3 | ND | ND | ND | ND | ND | 4.2 | ND |
| 622-96-8 | 4-Ethyltoluene | uG/m3 | ND | 11 J | 7.1 J | 6.9 J | 4.9 J | 14 J | 4.8 J |
| 108-67-8 | 1,3,5-Trimethylbenzene | uG/m3 | ND | 5.3 | 3 | 2.9 | 2.1 | 5.4 | 1.9 |
| 95-63-6 | 1,2,4-Trimethylbenzene | uG/m3 | 6.5 | 16 | 10 | 10 | 7.3 | 13 | 6.6 |
| 565-59-3 | 2,3-Dimethylpentane | uG/m3 | ND | 7.5 | ND | ND | ND | ND | ND |
| 107-83-5 | 2-Methylpentane | uG/m3 | 480 | 72 | ND | ND | ND | ND | ND |
| 496-11-7 | Indan | uG/m3 | ND | ND | ND | ND | ND | ND | ND |
| 78-78-4 | Isopentane | uG/m3 | 510 J | 240 J | ND | ND | ND | 13 J | 2 J |
| 91-20-3 | Naphthalene | uG/m3 | ND | ND | 3.9 J | 3.6 J | ND | ND | ND |
| 540-84-1 | 2,2,4-Trimethylpentane | uG/m3 | 120 | 35 | 32 | 32 | 18 | 19 | 49 |

Notes:
(1) ND indicates compound was not detected
(2) J indicates an estimated concentration

Table 7
OU-1 Summary of Soil Gas Analytical Data
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>W 45th Street Operable Unit 1<br>Validated Air Analytical Data<br>Detected Compound Summary | | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | OU-1 SG-3 (1FT)<br>0603386-01A<br>1'<br>Air Toxics<br>603386<br>Air<br>3/14/2006<br>4/28/2006 | OU-1 SG-3 (4FT)<br>0603386-02A<br>4'<br>Air Toxics<br>603386<br>Air<br>3/14/2006<br>4/28/2006 | OU-1 SG-4 (1FT)<br>0603386-03A<br>1'<br>Air Toxics<br>603386<br>Air<br>3/14/2006<br>4/28/2006 |
|---|---|---|---|---|---|
| CAS NO. | COMPOUND | UNITS: | | | |
| | VOLATILES | | | | |
| 75-71-8 | Freon 12 | uG/m3 | 2.9 | 3 | 2.8 |
| 74-87-3 | Chloromethane | uG/m3 | 1.4 | ND | 0.33 J |
| 106-99-0 | 1,3-Butadiene | uG/m3 | ND | ND | 2.6 |
| 75-69-4 | Freon 11 | uG/m3 | 1.6 | 1.9 | 2 |
| 64-17-5 | Ethanol | uG/m3 | 13 | 10 | 10 |
| 67-64-1 | Acetone | uG/m3 | 13 | 37 | 33 |
| 67-63-0 | 2-Propanol | uG/m3 | ND | 2.1 | ND |
| 75-15-0 | Carbon disulfide | uG/m3 | ND | ND | 24 |
| 75-09-2 | Methylene chloride | uG/m3 | ND | ND | ND |
| 1634-04-4 | Methyl tert-butyl ether | uG/m3 | ND | ND | ND |
| 110-54-3 | Hexane | uG/m3 | ND | ND | ND |
| 78-93-3 | Methyl Ethyl Ketone | uG/m3 | ND | 2.8 | ND |
| 67-66-3 | Chloroform | uG/m3 | ND | 1.9 | 8.3 |
| 71-55-6 | 1,1,1-Trichloroethane | uG/m3 | ND | 2.2 | ND |
| 110-82-7 | Cyclohexane | uG/m3 | ND | ND | ND |
| 71-43-2 | Benzene | uG/m3 | 2.6 | 7.9 | 47 |
| 142-82-5 | Heptane | uG/m3 | ND | 3.9 | ND |
| 79-01-6 | Trichloroethene | uG/m3 | ND | ND | ND |
| 108-88-3 | Toluene | uG/m3 | 11 | 32 | 30 |
| 127-18-4 | Tetrachloroethene | uG/m3 | 5.6 | 90 | 53 |
| 108-90-7 | Chlorobenzene | uG/m3 | ND | ND | ND |
| 100-41-4 | Ethylbenzene | uG/m3 | 2 | 17 | 13 |
| 1330-20-7 | Xylene (m,p) | uG/m3 | 8 | 75 | 58 |
| 95-47-6 | Xylene (o) | uG/m3 | 3.1 | 33 | 26 |
| 100-42-5 | Styrene | uG/m3 | ND | ND | ND |
| 98-82-8 | Cumene | uG/m3 | ND | ND | ND |
| 103-65-1 | Propylbenzene | uG/m3 | ND | 12 | 10 |
| 622-96-8 | 4-Ethyltoluene | uG/m3 | 4 | 57 | 52 |
| 108-67-8 | 1,3,5-Trimethylbenzene | uG/m3 | 1.6 | 23 | 22 |
| 95-63-6 | 1,2,4-Trimethylbenzene | uG/m3 | 4.9 | 73 | 70 |
| 565-59-3 | 2,3-Dimethylpentane | uG/m3 | ND | 5.4 | ND |
| 107-83-5 | 2-Methylpentane | uG/m3 | ND | 3.2 | ND |
| 496-11-7 | Indan | uG/m3 | ND | 9.2 J | 8.6 J |
| 78-78-4 | Isopentane | uG/m3 | 13 J | 21 J | 3.9 J |
| 91-20-3 | Naphthalene | uG/m3 | ND | 7.4 J | 13 J |
| 540-84-1 | 2,2,4-Trimethylpentane | uG/m3 | 62 | 480 J | 300 |

Notes:
(1) ND indicates compound was not detected
(2) J indicates an estimated concentration

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-11 (6.5 FEET)<br>R1163-02<br>6.5 FEET<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | TP-14 (6 FEET)<br>R1163-01<br>6 FEET<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | MW1-0709<br>R2145-02<br>7 - 9 FEET<br>CHEMTECH<br>R2145<br>Soil<br>4/10/2003<br>6/8/2003 | MW2-0507<br>R2209-03<br>5 - 7 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW3-0911<br>R2004-05<br>9 - 11 FEET<br>Chemtech<br>R2004-05<br>Soil<br>4/2/2003<br>7/2/2003 | MW3-2325<br>R2029-01<br>23 - 25 FEET<br>Chemtech<br>R2029<br>Soil<br>4/3/2003<br>5/6/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.0089 | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.0078 | 0.0022 J | 1 | 0.0014 J | **68** | 2.6 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 0.076 | ND | 12 | 0.01 | 300 | 91 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | ND | 8.7 | ND | ND | 81 |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | ND | ND | 21 | ND | 450 | 93 |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 0.12 | ND | 18 | 0.0044 J | 300 | 140 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 0.06 | ND | 7.9 | 0.0068 | 130 | 62 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 0.18 | ND | 25.9 | 0.0112 | 430 | 202 |
| | TOTAL VOCs | -- | -- | mg/kg | 0.2727 | 0.0022 | 68.6 | 0.0226 | 1248 | 469.6 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-11 (6.5 FEET)<br>R1163-02<br>6.5 FEET<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | TP-14 (6 FEET)<br>R1163-01<br>6 FEET<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | MW1-0709<br>R2145-02<br>7 - 9 FEET<br>CHEMTECH<br>R2145<br>Soil<br>4/10/2003<br>6/8/2003 | MW2-0507<br>R2209-03<br>5 - 7 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW3-0911<br>R2004-05<br>9 - 11 FEET<br>Chemtech<br>R2004-05<br>Soil<br>4/2/2003<br>7/2/2003 | MW3-2325<br>R2029-01<br>23 - 25 FEET<br>Chemtech<br>R2029<br>Soil<br>4/3/2003<br>5/6/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | 0.072 J | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | 0.93 | ND | 0.18 J | 0.42 J |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | 0.33 J | ND | 2.4 | ND | 0.66 | 1.8 |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 0.75 | 0.11 J | 2.7 | 0.19 J | 0.57 | 1.7 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 3.3 J | 0.06 J | 17 J | 0.065 J | 2.9 | 7.6 J |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 1.7 | ND | 9.4 | 0.078 J | 2.7 | 8.3 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 1.2 | 0.066 J | **7.7** | 0.078 J | 2.2 | **8.5** |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | 0.99 | ND | **5.7** | ND | 1.4 | **5.2** |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | 0.61 | 0.047 J | 2.9 | ND | 0.8 | 3.2 |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | 0.28 J | ND | 1.3 | ND | 0.096 J | 0.68 |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | 0.37 J | ND | 1.3 | ND | 0.64 | 1.7 |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 1.3 | ND | 8.2 | 0.087 J | **2.1** | 8.1 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | 0.38 J | ND | 0.09 J | 0.11 J |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 1.6 | 0.13 J | 12 | 0.12 J | 5.7 | 15 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 2.5 | 0.11 J | 19 | 0.083 J | 6.4 | 15 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | 0.21 J | ND | 2.6 | ND | ND | 1.8 |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 6.9 J | ND | 47 | ND | 12 | 8.4 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 28 | 0.096 J | 45 | 0.14 J | 10 | 15 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 4.9 J | 0.15 J | 44 | 0.2 J | 12 | 52 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 2.3 | 0.19 J | 4.3 | 0.17 J | 8.1 | 14 |
| | TOTAL PAHs | | | mg/kg | 56.91 | 0.959 | 230.48 | 1.211 | 67.696 | 166.29 |
| | TOTAL SVOCs | | | mg/kg | 57.24 | 0.959 | 233.882 | 1.211 | 68.536 | 168.51 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | ND | ND | ND | ND | 4.54 |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW4-0911<br>R2260-03<br>9 - 11 FEET<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW5-1113<br>R2260-01<br>11 - 13 FEET<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW6-0507<br>R2209-04<br>5 - 7 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW6-1113<br>R2209-05<br>11 - 13 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB3-0507<br>R2004-02<br>5 - 7 FEET<br>Chemtech<br>R2004<br>Soil<br>4/1/2003<br>7/2/2003 | SB-5 12-14<br>R1334-05<br>12 - 14 FEET<br>Chemtech<br>R1334<br>Soil<br>1/27/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 16 | 0.2 J | 7.8 | 9.3 | ND | 0.0016 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 30 | 27 | 44 | 36 | ND | ND |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | 0.0027 J |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 110 JN | ND | ND | ND | ND | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 110 | 0.15 J | 3.2 | 1.7 | ND | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 120 | 20 | 29 | 27 | ND | ND |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 43 JN | 9.3 | 22 | 15 | ND | ND |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 163 | 29.3 | 51 | 42 | ND | ND |
| | TOTAL VOCs | -- | -- | mg/kg | 429 | 56.65 | 106 | 89 | ND | 0.0043 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW4-0911<br>R2260-03<br>9 - 11 FEET<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW5-1113<br>R2260-01<br>11 - 13 FEET<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW6-0507<br>R2209-04<br>5 - 7 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW6-1113<br>R2209-05<br>11 - 13 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB3-0507<br>R2004-02<br>5 - 7 FEET<br>Chemtech<br>R2004<br>Soil<br>4/1/2003<br>7/2/2003 | SB-5 12-14<br>R1334-05<br>12 - 14 FEET<br>Chemtech<br>R1334<br>Soil<br>1/27/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | 1.4 | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | U | U | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | 0.068 J |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | 1.1 J | 0.39 J | 2 J | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | 5.9 | 1.9 | 11 | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | 9.3 | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 5.4 | 79 | 14 | 89 | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 42 | 14 | 13 | 14 | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 13 | 22 | 9.3 | 57 | ND | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 11 | **18** | **6.8** | **28** | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | 7.9 J | **13** | **5.5** | **24** | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | 7 J | **13** | 5.1 | **16** JN | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | 1.6 | 2.2 J | 1 J | 4.7 | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | 4 J | 2.3 J | 1.6 J | 13 JN | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 10 | 15 | 6.9 | 26 | ND | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | 0.67 J | **1.1** J | 0.48 J | 1 J | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 20 | 55 | 14 | 71 | ND | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 49 | 88 | 39 | 110 | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | 0.63 J | 1.9 J | 0.68 J | 2.7 J | ND | R |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 67 | 110 | 55 | 570 | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 73 | 140 | 52 | 260 | ND | 0.086 J |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 95 | 200 | 79 | 310 | ND | ND |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 37 | 70 | 33 | 93 | ND | ND |
| | TOTAL PAHs | | | mg/kg | 444.2 | 844.5 | 336.36 | 1689.4 | ND | 0.086 |
| | TOTAL SVOCs | | | mg/kg | 445.6 | 851.5 | 338.65 | 1711.7 | ND | 0.154 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | ND | ND | ND | ND | ND |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-5 16-16.5<br>R1334-06<br>16 - 16.5 FEET<br>Chemtech<br>R1334<br>Soil<br>1/27/2003<br>4/22/2003 | SB6-0507<br>R2004-03<br>5 - 7 FEET<br>ChemTech<br>R2004<br>Soil<br>4/2/2003<br>7/2/2003 | SB7-0507<br>R2004-01<br>5 - 7 FEET<br>ChemTech<br>R2004<br>Soil<br>4/1/2003<br>7/2/2003 | SB8-1113<br>R2279-03<br>5 - 7 FEET<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | SB8-2527<br>R2279-06<br>25 - 27 FEET<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | DUP OF SB8(25-27)<br>SB8-2527DUP<br>R2279-07<br>25 - 27 FEET<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.0013 J | 0.0029 J | ND | ND | 0.11 J | ND |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | ND | 0.0023 J | ND | 0.023 | 0.08 | 0.1 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 0.0023 J | ND | 0.0042 J | 0.021 J | 0.024 J |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.0015 J | ND | ND | ND | 0.016 J | 0.016 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | ND | ND | ND | 0.018 | 0.1 | 0.13 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | ND | ND | 0.01 | 0.051 | 0.059 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | ND | ND | ND | 0.028 | 0.151 | 0.189 |
| | TOTAL VOCs | -- | -- | mg/kg | 0.0028 | 0.0075 | ND | 0.0552 | 0.378 | 0.329 |

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|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | 0.055 J | 0.063 J | 0.067 J | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | 0.046 J |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | 0.25 J | 0.18 J |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | ND | 0.69 | 0.51 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | 0.12 J | 0.26 J | ND | 3.1 J | 2.1 |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | 0.32 J | 0.091 J | ND | 1.5 | 1 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | 0.34 J | 0.39 | ND | 1.2 | 0.88 |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | 0.15 J | 0.33 J | ND | 0.81 | 0.57 |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | 0.091 J | 0.25 J | ND | 0.4 | 0.27 J |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | 0.052 J | 0.083 J | ND | 0.22 J | 0.15 J |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | 0.12 J | ND | 0.5 | 0.34 J |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | 0.36 J | 0.39 | ND | 1.1 | 0.75 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | ND | 0.53 | 0.71 | ND | 2.7 | 1.9 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | 0.23 J | 0.1 J | ND | 3.2 J | 2.2 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | R | ND | 0.073 J | J | 0.24 J | 0.17 J |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | ND | 0.55 | ND | 0.078 J | 6.6 | 4.1 J |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 0.048 J | 0.39 J | ND | 0.19 J | 14 | 9.6 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | ND | 1.2 | 0.53 | ND | 11 | 6 J |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | ND | ND | 1.3 | ND | 3.4 J | 2.6 |
| | TOTAL PAHs | | | mg/kg | 0.048 | 4.333 | 4.627 | 0.268 | 50.66 | 33.14 |
| | TOTAL SVOCs | | | mg/kg | 0.103 | 4.396 | 4.694 | 0.268 | 50.91 | 33.366 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | ND | ND | ND | ND | ND |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

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Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-09-11-13<br>R2068-01<br>11 - 13 FEET<br>Chemtech<br>R2068<br>Soil<br>4/4/2003<br>5/7/2003 | SB10-3335<br>R2176-02<br>33 - 35 FEET<br>Chemtech<br>R2176<br>Soil<br>4/14/2003<br>6/8/2003 | SB11-0507<br>R2260-05<br>5 - 7 FEET<br>ChemTech<br>R2260<br>Soil<br>4/22/2003<br>6/10/2003 | SB-12(10-12)<br>R1359-01<br>10 - 12 FEET<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | SB-12(19-19.9)<br>R1359-02<br>19 - 19.9 FEET<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | SB15-0507<br>R2230-01<br>5 - 7 FEET<br>ChemTech<br>R2230<br>Soil<br>4/18/2003<br>6/9/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.0025 J | 9 | 1.2 J | 0.0022 J | ND | 0.27 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 0.0074 J | 1.3 | 29 | ND | ND | 0.17 J |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.0057 J | 4.1 JN | ND | ND | ND | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.0027 J | 8.2 | 8.3 | 0.002 J | ND | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 0.0054 J | 5 | 25 | ND | ND | 0.25 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 0.0035 J | 2.1 JN | 14 | ND | ND | ND |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 0.0089 | 7.1 | 39 | ND | ND | 0.25 |
| | TOTAL VOCs | -- | -- | mg/kg | 0.0272 | 29.7 | 77.5 | 0.0042 | ND | 0.69 |

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|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | U | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | ND | 0.57 |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | 0.11 J | 62 | ND | ND | 5.5 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | 0.18 J | 30 | ND | ND | 0.71 |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | 0.058 J | 36 J | ND | ND | 2.5 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 0.043 J | 0.069 J | **22** | ND | ND | **1.4** |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | **18** J | ND | ND | **1.1** |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | **17** J | ND | ND | 0.55 |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | 4.6 J | ND | ND | 0.35 J |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | 20 J | ND | ND | 0.56 |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | 21 | ND | ND | 1.2 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | 1.6 J | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.1 J | ND | 49 | ND | ND | 2.8 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 0.06 J | 0.14 J | 81 | ND | ND | 3 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | 1.3 J | ND | ND | 0.32 J |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 0.44 | 4.1 | ND | ND | ND | 24 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 2.5 | 49 | 160 | ND | ND | 5.9 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 0.21 J | ND | 160 | ND | ND | 12 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 0.12 J | ND | 74 | ND | ND | 5.2 |
| | TOTAL PAHs | | | mg/kg | 3.473 | 53.657 | 757.5 | ND | ND | 67.09 |
| | TOTAL SVOCs | | | mg/kg | 3.473 | 53.657 | 757.5 | ND | ND | 67.66 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 3.35 | ND | ND | ND | ND | ND |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB17-1012<br>R2209-02<br>10 - 12 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB-18 20-22FT<br>R1243-04<br>20 - 22 FEET<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-18 24-26FT<br>R1243-05<br>24 - 26 FEET<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-19 8-10FT<br>R1285-03<br>8 - 10 FEET<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-19 32-34FT<br>R1285-04<br>32 - 34 FEET<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-20 32-34FT<br>R1334-01<br>32 - 34 FEET<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | ND | 0.0084 J | 0.59 J | 0.19 J | 14 | **160** |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 0.35 | 0.14 J | 63 | 1.3 | 1.6 | 79 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 0.026 J | ND | 0.2 J | 4.8 | 460 |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | ND | 0.039 J | 2.3 J | 0.24 J | 13 | **830** |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 0.16 | 0.075 J | 56 | 0.88 J | 7.4 | **630** |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 0.098 | 0.078 J | 31 | 0.51 J | 3 | **240** |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 0.258 | 0.153 | 87 | 1.39 | 10.4 | **870** |
| | TOTAL VOCs | -- | -- | mg/kg | 0.608 | 0.3664 | 152.89 | 3.32 | 43.8 | 2399 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB17-1012<br>R2209-02<br>10 - 12 FEET<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB-18 20-22FT<br>R1243-04<br>20 - 22 FEET<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-18 24-26FT<br>R1243-05<br>24 - 26 FEET<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-19 8-10FT<br>R1285-03<br>8 - 10 FEET<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-19 32-34FT<br>R1285-04<br>32 - 34 FEET<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-20 32-34FT<br>R1334-01<br>32 - 34 FEET<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | 0.048 J | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | 0.053 J | ND | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | 0.049 J | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | 0.31 J | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 0.12 J | 2.5 | 27 J | 2.3 | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | 0.64 | 16 J | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 0.092 J | 1.6 | 22 J | 1.2 | ND | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 0.083 J | 1.3 | 15 J | 0.75 | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | 0.98 | **11** J | 0.56 | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | 0.91 | **7.9** J | 0.38 J | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | 0.2 J | 0.83 | 0.21 J | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | 0.28 J | 1.5 | 0.19 J | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 0.088 J | 1.3 | 15 J | 0.65 | ND | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | 0.089 J | 0.39 J | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.12 J | 1.6 | 19 J | 1.4 | 0.044 J | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 0.16 J | 2.9 | 27 J | 2.6 | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | 0.096 J | 0.6 | 0.13 J | ND | R |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 1.3 | 6.8 | 98 J | 30 | 0.19 J | 0.43 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 2.1 | 16 | 230 J | 14 | 1.8 | 2.9 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 0.36 J | 6.5 | 62 J | 7.8 | 0.12 J | 0.052 J |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 0.14 J | 2.6 | 40 J | 2.3 | 0.066 J | ND |
| | TOTAL PAHs | | | mg/kg | 4.563 | 46.295 | 593.22 | 64.47 | 2.22 | 3.382 |
| | TOTAL SVOCs | | | mg/kg | 4.616 | 46.295 | 593.22 | 64.829 | 2.268 | 3.382 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | ND | ND | ND | ND | 2.12 |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-20 34-35FT<br>R1334-02<br>34 - 35 FEET<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 | SB-21 6-8<br>R1334-03<br>6 - 8 FEET<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 | SB-21 20-21.5<br>R1334-04<br>20 - 21.5 FEET<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 | SB-22 16-18FT<br>R1243-02<br>16 - 18 FEET<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-22 24-25FT<br>R1243-03<br>24 - 25 FEET<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-23 9-11FT<br>R1285-01<br>9 - 11 FEET<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | **1900** | 8.8 | 3.2 J | 2.6 | 4.9 | 3.9 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | **430** | 36 | 24 | 23 | 17 | 190 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 2000 | 21 | 21 | 3.5 | 50 | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | **3900** | 11 | 12 | 9.8 | 37 | 4.2 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | **2600** | 34 | 43 | 22 | 62 | 160 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | **1000** | 16 | 18 | 10 | 28 | 72 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | **3600** | 50 | 61 | 32 | 90 | 232 |
| | TOTAL VOCs | -- | -- | mg/kg | 11830 | 126.8 | 121.2 | 70.9 | 198.9 | 430.1 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-20 34-35FT<br>R1334-02<br>34 - 35 FEET<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 | SB-21 6-8<br>R1334-03<br>6 - 8 FEET<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 | SB-21 20-21.5<br>R1334-04<br>20 - 21.5 FEET<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 | SB-22 16-18FT<br>R1243-02<br>16 - 18 FEET<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-22 24-25FT<br>R1243-03<br>24 - 25 FEET<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-23 9-11FT<br>R1285-01<br>9 - 11 FEET<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | 0.21 J | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | 0.13 J | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | 1.1 J | 0.11 J | ND | ND | 0.7 | 1.3 |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 1.5 J | 0.37 J | ND | 7.8 | 0.93 | 12 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 4.6 J | 1.2 | 0.046 J | 240 J | 12 | 1.2 |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 1.5 J | 0.56 | ND | 27 | 5.2 | 6.5 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 1.8 J | 0.56 | ND | **21** | 3.1 | 4.4 |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | 0.97 J | 0.37 J | ND | **15** J | **2.3** J | **2.8** |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | 0.8 J | 0.39 J | ND | **10** J | 2.5 J | 2 |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | 0.21 J | ND | 3.3 J | 0.49 J | 0.78 |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | 0.15 J | ND | 7.8 J | 1.2 J | 0.93 |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 2 J | 0.62 | ND | 21 | 4.4 | 3.2 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | 1.5 J | 0.091 J | 0.15 J |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 2 J | 0.85 | 0.063 J | 24 | 5.2 | 8.7 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 3.2 J | 0.84 | ND | 120 J | 8.4 | 16 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | R | 0.11 J | R | 1.4 J | 0.21 J | 0.63 |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 97 | 14 J | 0.75 | 380 J | 19 J | 260 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | **1100** | 130 | 9.9 | **2200** J | 160 J | 140 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 6.9 | 2.3 | 0.11 J | 280 J | 17 | 38 J |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 2.8 J | 1.2 | 0.061 J | 170 J | 9.6 | 13 |
| | TOTAL PAHs | | | mg/kg | 1225.07 | 153.73 | 10.93 | 3529.8 | 251.621 | 510.29 |
| | TOTAL SVOCs | | | mg/kg | 1226.17 | 154.05 | 10.93 | 3529.8 | 252.451 | 511.59 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | **93** | 0.914 | ND | ND | ND | ND |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

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Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-23 22-24.5FT<br>R1285-02<br>22 - 24.5 FEET<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 | SB24-0507<br>R2286-02<br>5 - 7 FEET<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | DUP OF SB24(5-7)<br>SB24-0507DUP<br>R2286-03<br>5 - 7 FEET<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | TAR DRIP<br>R1359-03<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | PUR-1<br>R2279-02<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | CONT1<br>CONT1(10-15)<br>D2436-03<br>10 - 15 FT<br>CTECH<br>D2436<br>SOIL<br>4/25/2012 9:30<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 37 | 0.0034 J | ND | ND | ND | ND |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | 0.0015 J | 0.0015 J | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 42 | 0.16 J | 0.047 J | 2.4 | ND | 0.0027 J |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | ND | | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 150 | 0.035 J | 0.082 J | 4.6 | ND | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 150 | 0.016 J | 0.0058 J | ND | ND | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | ND | ND | 0.0066 |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | ND | ND | 0.0014 J |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 140 | 0.14 J | 0.052 J | 0.76 J | ND | 0.0023 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 41 | 0.079 J | 0.032 J | 0.41 J | ND | 0.0023 J |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 181 | 0.219 | 0.084 | 1.17 | ND | 0.0047 J |
| | TOTAL VOCs | -- | -- | mg/kg | 560 | 0.4349 | 0.2203 | 8.17 | ND | 0.0153 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-23 22-24.5FT<br>R1285-02<br>22 - 24.5 FEET<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 | SB24-0507<br>R2286-02<br>5 - 7 FEET<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | DUP OF SB24(5-7)<br>SB24-0507DUP<br>R2286-03<br>5 - 7 FEET<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | TAR DRIP<br>R1359-03<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | PUR-1<br>R2279-02<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | CONT1<br>CONT1(10-15)<br>D2436-03<br>10 - 15 FT<br>CTECH<br>D2436<br>SOIL<br>4/25/2012 9:30<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | 0.04 J | ND | ND | 0.5 J |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | 0.2 J | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | 0.038 J | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | 0.22 J |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 2.1 | 0.25 J | 0.26 J | ND | ND | 0.24 J |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 42 | 0.14 J | 0.16 J | ND | 240 J | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 17 | 0.17 J | 0.18 J | ND | 60 J | 0.86 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | **16** | 0.12 J | 0.15 J | ND | **110** J | 1.2 |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | **2.9** | 0.092 J | 0.1 J | ND | **110** J | **1.1** |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | **11** | 0.057 J | 0.055 J | ND | **340** J | 1.1 |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | 1.8 | ND | ND | ND | 160 J | 0.6 |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | 5.2 | ND | ND | ND | **140** J | 0.4 J |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 30 | 0.13 J | 0.14 J | ND | **160** J | 1.2 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | **0.83** | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 26 | 0.3 J | 0.33 J | ND | 57 J | 2.7 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 26 | 0.38 | 0.4 | ND | 67 J | 0.34 J |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | 1.5 | ND | ND | ND | 69 J | 0.53 |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 42 | 1.7 | 1.7 | 0.07 J | ND | 0.26 J |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | **1000** | 2.3 | 2.4 | 1.8 | ND | 0.8 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 58 | 1.2 | 1.3 | ND | 36 J | 2.9 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 19 | 0.41 | 0.49 | ND | 130 J | 2.8 |
| | TOTAL PAHs | | | mg/kg | 1301.33 | 7.249 | 7.665 | 1.87 | 1679.0 | 17.03 |
| | TOTAL SVOCs | | | mg/kg | 1301.53 | 7.287 | 7.705 | 1.87 | 1679 | 17.75 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | ND | ND | ND | **40 J** | 0.213 J |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

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Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | CONT1<br>CONT1(20-25)<br>D2436-04<br>20 - 25 FT<br>CTECH<br>D2436<br>SOIL<br>4/25/2012 10:45<br>8/20/2012 | CONT2<br>CONT2(12-15)<br>D2680-01<br>12 - 15 FT<br>CTECH<br>D2680<br>SOIL<br>5/4/2012 13:35<br>8/20/2012 | CONT3<br>CONT3(7.5-10)<br>D2588-03<br>7.5 - 10 FT<br>CTECH<br>D2588<br>SOIL<br>5/2/2012 8:45<br>8/20/2012 | CONT5<br>CONT5(5-10)<br>D2588-06<br>5 - 10 FT<br>CTECH<br>D2588<br>SOIL<br>5/4/2012 8:20<br>8/20/2012 | CONT7<br>CONT7(5-10)<br>D2588-01<br>5 - 10 FT<br>CTECH<br>D2588<br>SOIL<br>5/1/2012 9:40<br>8/20/2012 | Dup of CONT7(5-10)<br>CONT7<br>CONT7A(5-10)<br>D2588-02<br>5 - 10 FT<br>CTECH<br>D2588<br>SOIL<br>5/1/2012 9:40<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.0061 J | 0.044 | 0.074 | 0.14 | 0.043 | 0.027 J |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | ND | 0.062 | 0.0014 J | 0.0063 | ND | ND |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | 0.019 | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | 0.0053 J | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | 0.0016 J | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | ND | 0.12 | ND | 0.25 J | 0.0012 J | ND |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | 0.0072 | ND | 0.046 | 0.0015 J | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | 0.024 J | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | 0.01 | ND | 0.0017 J | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | 0.0047 J | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | 0.025 | ND | 0.02 | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 0.0074 | ND | ND | 0.0014 J | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | ND | 0.092 | ND | 0.0021 J | ND | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 0.0021 J | 0.13 | ND | 0.23 J | 0.0045 J | 0.0019 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | 0.047 | ND | 0.038 | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | ND | 0.32 | ND | 0.1 | 0.0022 J | 0.0017 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | 0.13 | ND | 0.14 | 0.0019 J | ND |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | ND | 0.45 | ND | 0.25 | 0.0041 J | 0.0017 J |
| | TOTAL VOCs | -- | -- | mg/kg | 0.0082 | 0.9993 | 0.077 | 1.0224 | 0.0557 | 0.0306 |

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|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | 1.7 | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | ND | ND | 1.8 | 2.2 |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | 0.17 J | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | 0.16 J | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.2 J | 0.34 J | 0.54 | 0.64 | 0.77 | 0.55 |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | 1.2 | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | ND | ND | 0.21 J | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | ND | ND | 0.57 | 0.22 J | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | ND | ND | 0.39 | 0.52 | 0.23 J |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | ND | 0.26 J | 0.44 | 0.2 J |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | ND | 0.24 J | 0.58 | 0.26 J |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 0.25 J | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | 0.24 J | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | ND | 0.4 | 0.57 | 0.27 J |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | ND | ND | ND | 0.92 | 1.1 | 0.51 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | ND | ND | 1.3 | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | 0.22 J | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | 41 | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | ND | 0.41 J | ND | 16 | ND | ND |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | ND | ND | ND | 3 | 0.93 | 0.4 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | ND | ND | ND | 1.2 | 0.89 | 0.45 |
| | TOTAL PAHs | | | mg/kg | ND | 0.41 | ND | 66.69 | 5.96 | 2.32 |
| | TOTAL SVOCs | | | mg/kg | 0.2 | 0.75 | 0.54 | 69.19 | 8.7 | 5.07 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 0.061 J | 0.332 J | 0.067 J | 0.116 J | 0.057 J | 0.091 J |

Notes:
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(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

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|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | 0.016 J | 0.026 J | ND | 0.019 J |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.002 J | 0.017 J | ND | 0.009 | **46** | 0.0017 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | 0.011 | 0.67 J | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | ND | 0.0017 J | ND | 3.2 | **770** | ND |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | ND | ND | 0.12 | 22 | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | 0.011 | 0.98 J | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | 0.0038 J | ND | ND | 0.0074 J |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | ND | ND | 0.079 | 11 | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 0.0027 J | ND | 0.2 | 3.6 | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.0014 J | 0.0094 | ND | 0.12 | 210 | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | ND | ND | ND | 7.5 | 88 | 0.0012 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | ND | ND | 2.1 | 33 | 0.017 |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | ND | 0.0038 J | ND | 2.4 | **780** | ND |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | 0.0018 J | ND | 1.6 | 310 | 0.012 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | ND | 0.0056 J | ND | 4 | **1100** | ND |
| | TOTAL VOCs | -- | -- | mg/kg | 0.0034 | 0.0364 | 0.0198 | 17.376 | 2275.25 | 0.0583 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | CONT8<br>CONT8(10-15)0-40<br>D3205-02<br>10 - 15 FT<br>CTECH<br>D3205<br>SOIL<br>6/25/2012 13:20<br>8/20/2012 | MW-24<br>MW-24(10-13)0-12<br>D3205-01<br>10 - 13 FT<br>CTECH<br>D3205<br>SOIL<br>6/22/2012 10:35<br>8/20/2012 | PDI- 1<br>PDI- 1(13-15)<br>D1956-01<br>13 - 15 FT<br>CTECH<br>D1956<br>SOIL<br>3/16/2012 11:28<br>8/20/2012 | PDI- 1<br>PDI- 1(25-27)<br>D1956-02<br>25 - 27 FT<br>CTECH<br>D1956<br>SOIL<br>3/16/2012 14:00<br>8/20/2012 | PDI- 3<br>PDI- 3 (7-9)<br>D2144-02<br>7 - 9 FT<br>CTECH<br>D2144<br>SOIL<br>3/30/2012 12:00<br>8/20/2012 | PDI- 3<br>PDI- 3(15-17)<br>D2144-03<br>15 - 17 FT<br>CTECH<br>D2144<br>SOIL<br>4/2/2012 8:00<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | 1.4 | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | ND | 0.19 J | ND | 1.3 |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | 0.8 J | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.33 J | 0.52 | 0.32 J | 0.36 J | 0.91 J | 1.2 |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | ND | 1.3 | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 3.7 | 0.49 J |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 3.9 | 0.63 J |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | 4.3 | 0.76 J |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | ND | ND | **3.1** | 0.48 J |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | 2.4 | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 0.88 J | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | 1.1 J | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | ND | ND | 4.3 | 0.73 J |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 12 | 1.7 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | ND | ND | ND | 14 | 2 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | 0.84 J | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | 5.2 | 0.85 J |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | ND | ND | ND | ND | 21 | 2.1 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | ND | ND | ND | 0.2 J | 41 | 6.4 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 16 | 2.7 |
| | TOTAL PAHs | | | mg/kg | ND | ND | ND | 0.2 | 135.02 | 18.84 |
| | TOTAL SVOCs | | | mg/kg | 0.33 | 0.52 | 0.32 | 0.75 | 138.13 | 21.34 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 0.048 J | 4.5 | 0.566 | ND | ND | ND |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI- 4<br>PDI- 4(13-15)<br>D2144-08<br>13 - 15 FT<br>CTECH<br>D2144<br>SOIL<br>4/4/2012 12:30<br>8/20/2012 | PDI- 4<br>PDI- 4(35-36.5)<br>D2144-09<br>35 - 36.5 FT<br>CTECH<br>D2144<br>SOIL<br>4/5/2012 7:45<br>8/20/2012 | PDI- 5<br>PDI- 5(40-42)<br>D2436-01<br>40 - 42 FT<br>CTECH<br>D2436<br>SOIL<br>4/23/2012 15:40<br>8/20/2012 | PDI- 7<br>PDI- 7 (5-7)<br>D2144-10<br>5 - 7 FT<br>CTECH<br>D2144<br>SOIL<br>4/4/2012 11:55<br>8/20/2012 | PDI- 7<br>PDI- 7(41-43)<br>D2144-12<br>41 - 43 FT<br>CTECH<br>D2144<br>SOIL<br>4/5/2012 10:10<br>8/20/2012 | PDI-10<br>PDI-10(14.5-15)<br>D2680-02<br>14.5 - 15 FT<br>CTECH<br>D2680<br>SOIL<br>5/8/2012 13:50<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | ND | ND | 0.0072 J | 0.05 | ND | R |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | ND | 30 | ND | ND | 5 | 0.0052 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | 0.14 J | ND | ND | ND | ND | R |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | 0.22 J | ND | ND | 0.11 J | R |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | R |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | R |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | R |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | R |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | ND | 53 | 0.0018 J | 0.033 | 11 | 0.017 J |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | 1.7 | ND | 0.004 J | 0.32 J | 0.0033 J |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | R |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | 0.0095 J | ND | R |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | 1 | ND | ND | 0.14 J | R |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | 0.011 | ND | R |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | 2.3 | 0.0022 J | 0.0063 | 1.4 | 0.011 J |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 6.1 | 0.038 | 0.025 | 38 | 0.0039 J |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | ND | 63 | 0.0024 J | 0.01 | 38 | 0.0073 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 0.22 J | 22 | 0.1 | 0.098 | 14 | 0.079 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 0.056 J | 8.5 | 0.025 | 0.033 | 5.1 | 0.027 J |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | ND | 54 | 0.0095 J | 0.072 | 38 | 0.026 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | 22 | 0.011 | 0.049 | 19 | 0.012 J |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | ND | 76 | 0.02 | 0.12 | 57 | 0.038 J |
| | TOTAL VOCs | -- | -- | mg/kg | 0.416 | 263.82 | 0.1971 | 0.4008 | 170.07 | 0.1917 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI- 4<br>PDI- 4(13-15)<br>D2144-08<br>13 - 15 FT<br>CTECH<br>D2144<br>SOIL<br>4/4/2012 12:30<br>8/20/2012 | PDI- 4<br>PDI- 4(35-36.5)<br>D2144-09<br>35 - 36.5 FT<br>CTECH<br>D2144<br>SOIL<br>4/5/2012 7:45<br>8/20/2012 | PDI- 5<br>PDI- 5(40-42)<br>D2436-01<br>40 - 42 FT<br>CTECH<br>D2436<br>SOIL<br>4/23/2012 15:40<br>8/20/2012 | PDI- 7<br>PDI- 7 (5-7)<br>D2144-10<br>5 - 7 FT<br>CTECH<br>D2144<br>SOIL<br>4/4/2012 11:55<br>8/20/2012 | PDI- 7<br>PDI- 7(41-43)<br>D2144-12<br>41 - 43 FT<br>CTECH<br>D2144<br>SOIL<br>4/5/2012 10:10<br>8/20/2012 | PDI-10<br>PDI-10(14.5-15)<br>D2680-02<br>14.5 - 15 FT<br>CTECH<br>D2680<br>SOIL<br>5/8/2012 13:50<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | 0.16 J | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | 2.6 | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | 0.58 | ND | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | 1.3 | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.34 J | 0.42 | 0.28 J | ND | 0.84 J | 0.37 J |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | ND | 2 | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 7.1 | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 7.2 | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | **7.8** | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | ND | ND | **5.4** | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | 4.3 | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 1.5 | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | 1.6 | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | ND | ND | 7.5 | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | 0.54 J | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.17 J | ND | 0.29 J | 1.5 J | 18 | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | ND | 0.36 J | 1.1 J | 20 | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | 1.7 | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 0.18 J | 0.72 | 0.58 | 1 J | 11 | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 0.56 | 7.6 | 5.6 | 1.4 J | 110 | 0.7 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 0.21 J | ND | 1.2 | 3.7 | 71 | ND |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 0.22 J | ND | 0.42 | 2.2 | 23 | ND |
| | TOTAL PAHs | | | mg/kg | 1.34 | 8.32 | 8.45 | 10.9 | 299.64 | 0.7 |
| | TOTAL SVOCs | | | mg/kg | 2.26 | 8.74 | 8.89 | 10.9 | 304.38 | 1.07 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 0.079 J | 5.4 | 0.09 J | 0.322 | 1 | 0.269 J |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-11<br>PDI-11(10-12)<br>D2144-05<br>10 - 12 FT<br>CTECH<br>D2144<br>SOIL<br>3/30/2012 14:15<br>8/20/2012 | PDI-11<br>PDI-11(40-41)<br>D2144-04<br>40 - 41 FT<br>CTECH<br>D2144<br>SOIL<br>4/2/2012 11:20<br>8/20/2012 | PDI-12<br>PDI-12 (5-7)<br>D2144-06<br>5 - 7 FT<br>CTECH<br>D2144<br>SOIL<br>4/3/2012 10:00<br>8/20/2012 | PDI-12<br>PDI-12(10-12.5)<br>D2144-07<br>10 - 12.5 FT<br>CTECH<br>D2144<br>SOIL<br>4/3/2012 10:35<br>8/20/2012 | PDI-16<br>PDI-16 (5-7)<br>D2680-03<br>5 - 7 FT<br>CTECH<br>D2680<br>SOIL<br>5/9/2012 11:05<br>8/20/2012 | PDI-16<br>PDI-16(25-30)<br>D2680-04<br>25 - 30 FT<br>CTECH<br>D2680<br>SOIL<br>5/9/2012 13:25<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.015 J | 0.021 J | 0.095 | ND | R | 0.049 J |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | ND | 0.053 | 0.056 | 0.14 J | 0.02 J | 0.01 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | 0.8 | R | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | 0.0048 J | ND | 0.25 J | R | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | 0.0041 J | ND | 0.0041 J | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | R | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | 0.0032 J | ND | R | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | 0.0057 J | ND | ND | R | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | ND | 1.6 | 0.027 | 1.2 | 0.0047 J | 0.0028 J |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | ND | 0.0093 | ND | 0.3 J | R | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | 0.0079 | ND | R | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | 0.03 | ND | R | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | ND | 0.021 | ND | 0.18 J | R | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | 0.004 J | 0.01 J | 0.007 J | ND | R | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | ND | 0.052 | ND | 0.21 J | R | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.0014 J | 4.2 | 0.0084 | ND | R | 0.0079 J |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.0013 J | 2.7 | 0.1 | ND | 0.011 J | 0.0064 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 0.0022 J | 3 | 0.0033 J | 3.1 | 0.0092 J | 0.0071 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 0.0022 J | 1.1 | 0.0015 J | 0.9 | 0.007 J | 0.0018 J |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | ND | 5.9 | 0.031 | 0.59 J | 0.0095 J | 0.0054 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | 2.4 | 0.011 | 0.71 | 0.0084 J | 0.0031 J |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | ND | 8.3 | 0.042 | 1.3 J | 0.018 J | 0.0086 J |
| | TOTAL VOCs | -- | -- | mg/kg | 0.0261 | 21.0768 | 0.3854 | 8.38 | 0.0739 | 0.0935 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-11<br>PDI-11(10-12)<br>D2144-05<br>10 - 12 FT<br>CTECH<br>D2144<br>SOIL<br>3/30/2012 14:15<br>8/20/2012 | PDI-11<br>PDI-11(40-41)<br>D2144-04<br>40 - 41 FT<br>CTECH<br>D2144<br>SOIL<br>4/2/2012 11:20<br>8/20/2012 | PDI-12<br>PDI-12 (5-7)<br>D2144-06<br>5 - 7 FT<br>CTECH<br>D2144<br>SOIL<br>4/3/2012 10:00<br>8/20/2012 | PDI-12<br>PDI-12(10-12.5)<br>D2144-07<br>10 - 12.5 FT<br>CTECH<br>D2144<br>SOIL<br>4/3/2012 10:35<br>8/20/2012 | PDI-16<br>PDI-16 (5-7)<br>D2680-03<br>5 - 7 FT<br>CTECH<br>D2680<br>SOIL<br>5/9/2012 11:05<br>8/20/2012 | PDI-16<br>PDI-16(25-30)<br>D2680-04<br>25 - 30 FT<br>CTECH<br>D2680<br>SOIL<br>5/9/2012 13:25<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | 2.7 | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | 0.55 | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 1 J | 0.43 | ND | 0.44 | 0.31 J | 0.32 J |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | 0.78 | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | ND | ND | 0.25 J | 0.16 J | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | 0.28 J | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | ND | ND | 0.24 J | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | 0.2 J | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | ND | ND | 0.32 J | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.77 J | ND | ND | 0.26 J | 0.61 | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | ND | ND | 0.41 | 0.28 J | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | ND | 0.81 | ND | 45 | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | ND | 7.5 | ND | 11 | ND | 0.48 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 0.81 J | ND | ND | 0.99 | 0.95 | ND |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 1.4 | ND | ND | 0.45 | 1.1 | ND |
| | TOTAL PAHs | | | mg/kg | 2.98 | 8.31 | ND | 59.14 | 4.14 | 0.48 |
| | TOTAL SVOCs | | | mg/kg | 3.98 | 9.29 | 0 | 62.28 | 4.45 | 0.8 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | 0.232 J | 0.107 J | ND | 0.195 J | 3.1 |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-17<br>PDI-17(11-13)<br>D1836-01<br>11 - 13 FT<br>CTECH<br>D1836<br>SOIL<br>3/12/2012 12:30<br>8/20/2012 | PDI-17<br>PDI-17(37-37.75)<br>D1836-02<br>37 - 37.75 FT<br>CTECH<br>D1836<br>SOIL<br>3/13/2012 12:40<br>8/20/2012 | PDI-18<br>PDI-18(13-15)<br>D1956-08<br>13 - 15 FT<br>CTECH<br>D1956<br>SOIL<br>3/20/2012 10:44<br>8/20/2012 | PDI-18<br>PDI-18(15-17)<br>D1956-09<br>15 - 17 FT<br>CTECH<br>D1956<br>SOIL<br>3/20/2012 11:07<br>8/20/2012 | PDI-19<br>PDI-19(10-15)<br>D2780-01<br>10 - 15 FT<br>CTECH<br>D2780<br>SOIL<br>5/15/2012 10:50<br>8/20/2012 | PDI-20<br>PDI-20(12-14)<br>D2780-04<br>12 - 14 FT<br>CTECH<br>D2780<br>SOIL<br>5/15/2012 10:29<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.011 J | ND | 0.018 J | 0.018 J | 0.12 J | 0.11 |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.55 J | **63** | ND | ND | 0.0093 J | 0.028 |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | R | 0.0014 J |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | 0.0056 J | 0.58 J | ND | ND | R | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | 0.0048 J | ND | ND | ND | R | 0.0026 J |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | R | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | R | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | R | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 0.75 J | 19 | 0.0044 J | ND | 0.04 J | 0.017 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | 0.26 J | 0.63 J | ND | ND | 0.0043 J | 0.0042 J |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | R | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | 0.013 J | ND | ND | ND | R | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | 0.004 J | ND | ND | ND | R | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | R | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | 0.11 J | 3.3 J | ND | ND | 0.002 J | 0.003 J |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.6 J | 64 | 0.0083 J | ND | R | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.71 J | 130 | 0.0033 J | ND | R | 0.0016 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 1.1 | 31 | 0.0091 J | 0.0029 J | 0.041 J | 0.016 |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 0.19 J | 12 | 0.0025 J | ND | 0.011 J | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 1.1 J | 85 | 0.0099 J | ND | 0.043 J | 0.0036 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 0.74 J | 32 | 0.0067 J | 0.0017 J | 0.022 J | 0.0024 J |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 1.8 J | 120 | 0.017 J | 0.0017 J | 0.065 J | 0.006 J |
| | TOTAL VOCs | -- | -- | mg/kg | 6.1484 | 440.51 | 0.0622 | 0.0226 | 0.2926 | 0.1898 |

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|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | 0.3 J | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | ND | 0.59 J | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.62 | 0.56 | 0.94 J | 0.98 J | 0.31 J | 0.27 J |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | ND | ND | ND | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | ND | ND | ND | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 0.3 J | 1.8 | ND | ND | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 1.8 | 18 | ND | 0.62 J | 0.41 | ND |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | ND | 0.16 J | ND | ND | ND | ND |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| | TOTAL PAHs | | | mg/kg | 2.1 | 19.96 | ND | 0.62 | 0.41 | ND |
| | TOTAL SVOCs | | | mg/kg | 2.72 | 20.82 | 0.94 | 2.19 | 0.72 | 0.27 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | 0.426 | ND | ND | ND | 0.157 J |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

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Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-20<br>PDI-20(14-16)<br>D2780-05<br>14 - 16 FT<br>CTECH<br>D2780<br>SOIL<br>5/15/2012 10:42<br>8/20/2012 | PDI-21<br>PDI-21(5-7.5)<br>D2436-02<br>5 - 7.5 FT<br>CTECH<br>D2436<br>SOIL<br>4/24/2012 9:00<br>8/20/2012 | PDI-22<br>PDI-22(5-10)<br>D2680-05<br>5 - 10 FT<br>CTECH<br>D2680<br>SOIL<br>5/10/2012 9:58<br>8/20/2012 | PDI-23<br>PDI-23(5-10)<br>D2780-02<br>5 - 10 FT<br>CTECH<br>D2780<br>SOIL<br>5/17/2012 9:15<br>8/20/2012 | PDI-24<br>PDI-24(15-17)<br>D1836-04<br>15 - 17 FT<br>CTECH<br>D1836<br>SOIL<br>3/14/2012 11:32<br>8/20/2012 | PDI-24<br>PDI-24(23-25)<br>D1836-05<br>23 - 25 FT<br>CTECH<br>D1836<br>SOIL<br>3/15/2012 11:00<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.1 | 0.042 | ND | 0.02 J | ND | ND |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.016 | 0.0084 | 0.0041 J | 0.044 | 21 | **220** |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | 0.004 J | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | 0.02 | 0.0013 J | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | ND | ND | 0.0024 J | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | 0.0033 J | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 0.0039 J | 3.6 | 0.1 | 0.08 | 71 | 99 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | 0.0058 J | 0.74 | 0.023 | 0.01 | 15 | 4.5 J |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | 0.0013 J | 0.018 | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | 0.0021 J | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | 0.0031 J | 0.16 | 0.01 | 0.0028 J | 6.4 | 18 |
| 100-42-5 | STYRENE | -- | -- | mg/kg | ND | 0.0096 | ND | ND | ND | 430 |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | ND | 0.017 | 0.0024 J | 0.007 | 7.4 | **610** |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 0.0051 J | 5.2 | 0.14 | 0.034 | 86 | **200** |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | ND | 1.8 | 0.024 | 0.005 J | 23 | 61 |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 0.0021 J | 2.6 | 0.039 | 0.04 | 25 | 410 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | ND | 1.5 | 0.034 | 0.038 | 26 | 200 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 0.0021 J | 4.1 | 0 | 0.078 | 51 | **610** |
| | TOTAL VOCs | -- | -- | mg/kg | 0.1373 | 15.7204 | 0.3818 | 0.2832 | 280.8 | 2252.5 |

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|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | 1.2 | ND | ND | 3.6 | 30 |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | ND | 0.22 J | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | 2.3 |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | 1 J | 6.2 |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.19 J | 0.24 J | 0.32 J | 0.61 J | 1.1 J | 1.4 |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | 0.57 | 0.54 | ND | 18 | 16 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | ND | 0.16 J | ND | ND | 1.7 | 120 |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | ND | 0.31 J | 0.27 J | ND | 7.4 | 48 |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | 0.25 J | 0.28 J | ND | **6.5** | **39** |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | 0.2 J | 0.28 J | ND | **3.3** | **23** |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | 0.19 J | 0.34 J | ND | 2.7 | **20** |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | 1.2 | 6.7 |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | 0.95 J | 3.8 |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | 0.26 J | 0.28 J | ND | 7.2 | 44 |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | **1.6** |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | ND | 0.56 | 0.65 | 0.48 J | 6.5 | 42 |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | ND | 0.61 | 0.36 J | ND | 8.4 | 72 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | 0.83 J | **7** |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | ND | 24 | 1.1 | ND | 40 | 490 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | ND | 11 | 5.8 | 0.59 J | 41 | **980** |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | ND | 1.7 | 1 | 0.65 J | 28 | 170 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | ND | 0.77 | 0.75 | 0.49 J | 12 | 75 |
| | TOTAL PAHs | | | mg/kg | ND | 40.58 | 11.65 | 2.21 | 185.68 | 2158.1 |
| | TOTAL SVOCs | | | mg/kg | 0.19 | 42.02 | 12.19 | 2.82 | 191.38 | 2198 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 0.425 | 0.13 J | 2.2 | 0.1 J | 0.323 | 23 |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-25<br>PDI-25(13-15)<br>D2044-07<br>13 - 15 FT<br>CTECH<br>D2044<br>SOIL<br>3/26/2012 10:30<br>8/20/2012 | PDI-25<br>PDI-25(15-17)<br>D2044-08<br>15 - 17 FT<br>CTECH<br>D2044<br>SOIL<br>3/26/2012 11:02<br>8/20/2012 | PDI-26<br>PDI-26(16-22)<br>D2275-13<br>16 - 22 FT<br>CTECH<br>D2275<br>SOIL<br>4/19/2012 9:30<br>8/20/2012 | PDI-27<br>PDI-27(35-37)<br>D2275-06<br>35 - 37 FT<br>CTECH<br>D2275<br>SOIL<br>4/18/2012 10:20<br>8/20/2012 | PDI-28<br>PDI-28(5-7)<br>D2275-12<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/19/2012 12:50<br>8/20/2012 | PDI-29<br>PDI-29 (9-10)<br>D3031-01<br>9 - 10 FT<br>CTECH<br>D3031<br>SOIL<br>6/6/2012 12:17<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.057 J | 0.035 | 0.039 | 0.012 J | 0.059 | 0.019 J |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.086 J | 0.0064 | 0.38 J | 2.7 | ND | 0.023 |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | 0.0052 J | 0.014 | 0.014 | 0.0024 J | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | ND | 0.0037 J | 0.003 J | 0.0019 J | 0.0028 J | 0.0013 J |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | 0.0025 J | 0.0018 J | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | 0.0019 J | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | 0.0047 J | 0.0027 J | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 2.1 | 0.17 | 0.79 | 0.47 J | 0.0017 J | 0.1 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | 0.18 J | 0.12 | 0.17 J | 0.011 | ND | 0.019 |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | 0.0035 J | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | 0.0086 J | ND | ND | ND | 0.014 J | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | 0.0021 J | 0.006 J | 0.02 | 0.0077 | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | 0.0039 J | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | 0.059 J | 0.087 | 0.14 | 0.022 | ND | 0.0086 |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.014 J | 0.0083 | 0.0038 J | 0.4 J | ND | 0.0016 J |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.057 J | 0.0063 | 0.094 J | 1.5 | ND | 0.013 |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 1.8 | 4.4 | 1.6 | 0.5 J | 0.004 J | 0.12 |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 0.24 J | 1.2 | 0.39 J | 0.085 | 0.0012 J | 0.018 |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 1.2 | 0.12 | 0.44 J | 0.97 J | 0.0016 J | 0.064 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 0.76 | 0.12 | 0.23 J | 0.47 J | ND | 0.046 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 2 | 0.24 | 0.67 J | 1.4 J | 0 J | 0.11 |
| | TOTAL VOCs | -- | -- | mg/kg | 6.5689 | 6.3002 | 4.3224 | 7.1572 | 0.088 | 0.4335 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-25<br>PDI-25(13-15)<br>D2044-07<br>13 - 15 FT<br>CTECH<br>D2044<br>SOIL<br>3/26/2012 10:30<br>8/20/2012 | PDI-25<br>PDI-25(15-17)<br>D2044-08<br>15 - 17 FT<br>CTECH<br>D2044<br>SOIL<br>3/26/2012 11:02<br>8/20/2012 | PDI-26<br>PDI-26(16-22)<br>D2275-13<br>16 - 22 FT<br>CTECH<br>D2275<br>SOIL<br>4/19/2012 9:30<br>8/20/2012 | PDI-27<br>PDI-27(35-37)<br>D2275-06<br>35 - 37 FT<br>CTECH<br>D2275<br>SOIL<br>4/18/2012 10:20<br>8/20/2012 | PDI-28<br>PDI-28(5-7)<br>D2275-12<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/19/2012 12:50<br>8/20/2012 | PDI-29<br>PDI-29 (9-10)<br>D3031-01<br>9 - 10 FT<br>CTECH<br>D3031<br>SOIL<br>6/6/2012 12:17<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | 3.3 | 2.3 | ND | ND | ND | 0.21 J |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | 0.96 J | ND | ND | 0.27 J | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | 0.85 J | ND | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | ND | ND | 0.78 J | 0.85 J | 1 J | 0.59 |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | 12 | 8.8 | ND | ND | ND | 0.89 |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 1.6 J | 1.3 J | ND | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 7.2 | 5.6 | 0.17 J | ND | ND | 0.28 J |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | **6.1** | 5.1 | 0.27 J | ND | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | **3.4** | **3.1** | 0.21 J | ND | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | 2.8 | 2.4 | 0.27 J | ND | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | 1.4 J | 1.4 J | ND | ND | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | 1.3 J | 1.3 J | ND | ND | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 7.9 | 6.5 | 0.26 J | ND | ND | 0.19 J |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 6.7 | 6 | 0.69 | 0.17 J | ND | 0.36 J |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 8.3 | 6 | ND | ND | ND | 0.55 |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | 0.89 J | 0.89 J | ND | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 33 | 23 | 0.9 | 0.39 J | ND | 0.77 |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 47 | 32 | 4.2 | 1.4 | ND | 4.6 |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 28 | 22 | 0.65 | 0.31 J | ND | 1.3 |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 11 | 9.8 | 0.54 | 0.18 J | ND | 0.45 |
| | TOTAL PAHs | | | mg/kg | 178.59 | 135.19 | 8.16 | 2.45 | ND | 9.39 |
| | TOTAL SVOCs | | | mg/kg | 183.7 | 137.49 | 8.94 | 3.57 | 1 | 10.19 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 2.9 | 14 | 0.351 | 3.5 | 0.14 J | 0.771 |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-29<br>PDI-29(31-35)<br>D3031-02<br>31 - 35 FT<br>CTECH<br>D3031<br>SOIL<br>6/7/2012 14:10<br>8/20/2012 | PDI-30<br>PDI-30(25-27)<br>D2275-07<br>25 - 27 FT<br>CTECH<br>D2275<br>SOIL<br>4/17/2012 9:45<br>8/20/2012 | PDI-31<br>PDI-31(10-12)<br>D2044-04<br>10 - 12 FT<br>CTECH<br>D2044<br>SOIL<br>3/27/2012 10:10<br>8/20/2012 | PDI-31<br>PDI-31(5-10)<br>D2044-01<br>5 - 10 FT<br>CTECH<br>D2044<br>SOIL<br>3/27/2012 9:35<br>8/20/2012 | PDI-32<br>PDI-32(13-15)<br>D2044-06<br>13 - 15 FT<br>CTECH<br>D2044<br>SOIL<br>3/28/2012 11:20<br>8/20/2012 | PDI-32<br>PDI-32(5-7)<br>D2044-05<br>5 - 7 FT<br>CTECH<br>D2044<br>SOIL<br>3/28/2012 9:30<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | |
| | VOLATILES | | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.024 J | ND | 0.0085 J | 0.049 J | 0.0062 J | 0.026 J |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.031 | 0.038 | ND | ND | ND | ND |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | 0.0043 J | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | 0.0035 J | 0.0022 J | ND | ND | ND | ND |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 2.9 | 0.16 | ND | 0.012 | ND | ND |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | 0.13 | 0.021 | ND | 0.0096 | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | 0.0027 J | ND | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | 0.077 | 0.0085 | ND | 0.0062 | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.056 | 0.0077 | ND | ND | ND | ND |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.4 J | 0.026 | ND | ND | ND | ND |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 2.5 | 0.14 | 0.0013 J | 0.03 | ND | ND |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 0.77 | 0.022 | ND | 0.02 | ND | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 2.9 | 0.098 | ND | 0.0034 J | ND | ND |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 1.3 | 0.07 | ND | 0.0077 | ND | ND |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 4.2 | 0.17 | ND | 0.011 | ND | ND |
| | TOTAL VOCs | -- | -- | mg/kg | 11.0985 | 0.5934 | 0.0098 | 0.1379 | 0.0062 | 0.026 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-29<br>PDI-29(31-35)<br>D3031-02<br>31 - 35 FT<br>CTECH<br>D3031<br>SOIL<br>6/7/2012 14:10<br>8/20/2012 | PDI-30<br>PDI-30(25-27)<br>D2275-07<br>25 - 27 FT<br>CTECH<br>D2275<br>SOIL<br>4/17/2012 9:45<br>8/20/2012 | PDI-31<br>PDI-31(10-12)<br>D2044-04<br>10 - 12 FT<br>CTECH<br>D2044<br>SOIL<br>3/27/2012 10:10<br>8/20/2012 | PDI-31<br>PDI-31(5-10)<br>D2044-01<br>5 - 10 FT<br>CTECH<br>D2044<br>SOIL<br>3/27/2012 9:35<br>8/20/2012 | PDI-32<br>PDI-32(13-15)<br>D2044-06<br>13 - 15 FT<br>CTECH<br>D2044<br>SOIL<br>3/28/2012 11:20<br>8/20/2012 | PDI-32<br>PDI-32(5-7)<br>D2044-05<br>5 - 7 FT<br>CTECH<br>D2044<br>SOIL<br>3/28/2012 9:30<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | ND | 0.29 J | ND | ND | ND | ND |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.44 | 0.79 J | 0.66 | 0.61 | 0.58 | 0.71 |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | 0.21 J | ND | ND | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 0.25 J | ND | ND | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 0.18 J | 0.39 | ND | ND | ND | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | ND | 0.74 | ND | 0.36 J | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | ND | 0.51 | ND | 0.32 J | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | ND | 0.77 | ND | 0.29 J | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | 0.44 | ND | ND | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | 0.18 J | ND | ND | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | ND | 1.5 | ND | 0.37 J | ND | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.18 J | 1.1 | ND | 0.32 J | ND | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 0.2 J | 0.31 J | ND | ND | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | 0.19 J | ND | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 0.73 | 0.52 | ND | ND | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 1.6 | 1.6 | ND | ND | ND | ND |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 0.64 | 2.9 | ND | ND | ND | ND |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 0.25 J | 2.1 | ND | 0.56 | ND | ND |
| | TOTAL PAHs | | | mg/kg | 4.03 | 13.46 | ND | 2.22 | ND | ND |
| | TOTAL SVOCs | | | mg/kg | 4.47 | 14.54 | 0.66 | 2.83 | 0.58 | 0.71 |
| | OTHER | | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | ND | 1.5 | ND | 0.237 J | 1.3 | 0.05 J |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-33<br>PDI-33(10-12)<br>D1956-06<br>10 - 12 FT<br>CTECH<br>D1956<br>SOIL<br>3/22/2012 8:50<br>8/20/2012 | PDI-33<br>PDI-33(5-7)<br>D1956-04<br>5 - 7 FT<br>CTECH<br>D1956<br>SOIL<br>3/21/2012 13:35<br>8/20/2012 | Dup of PDI-33(5-7)<br>PDI-33<br>PDI-33A(5-7)<br>D1956-05<br>5 - 7 FT<br>CTECH<br>D1956<br>SOIL<br>3/21/2012 13:40<br>8/20/2012 | PDI-34<br>PDI-34(5-7)<br>D2275-01<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/13/2012 9:50<br>8/20/2012 | Dup of PDI-34(5-7)<br>PDI-34<br>PDI-34A(5-7)<br>D2275-04<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/13/2012 10:00<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | |
| | VOLATILES | | | | | | | | |
| 67-64-1 | ACETONE | .05 | 500 | mg/kg | 0.062 J | 0.041 J | 0.14 J | 0.085 | 0.12 |
| 71-43-2 | BENZENE | .06 | 44 | mg/kg | 0.016 J | ND | ND | 0.002 J | 0.0032 J |
| 104-51-8 | N-BUTYLBENZENE | 12 | 500 | mg/kg | ND | ND | ND | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 11 | 500 | mg/kg | ND | ND | ND | ND | ND |
| 75-15-0 | CARBON DISULFIDE | -- | -- | mg/kg | 0.0091 J | 0.0014 J | 0.029 J | ND | 0.002 J |
| 67-66-3 | CHLOROFORM | .37 | 350 | mg/kg | ND | ND | ND | ND | ND |
| 74-87-3 | CHLOROMETHANE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | -- | mg/kg | 0.069 J | ND | ND | ND | ND |
| 100-41-4 | ETHYLBENZENE | 1 | 390 | mg/kg | 7.8 | 0.0019 J | ND | 0.0062 | 0.011 |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | -- | -- | mg/kg | 6.3 | ND | ND | ND | ND |
| 79-20-9 | METHYL ACETATE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 78-93-3 | METHYL ETHYL KETONE (2-BUTANONE) | .12 | 500 | mg/kg | ND | 0.0065 J | 0.011 J | ND | ND |
| 108-87-2 | METHYLCYCLOHEXANE | -- | -- | mg/kg | 0.3 J | ND | ND | ND | ND |
| 75-09-2 | METHYLENE CHLORIDE | .05 | 500 | mg/kg | ND | ND | ND | ND | ND |
| 103-65-1 | N-PROPYLBENZENE | 3.9 | 500 | mg/kg | 3.8 | ND | ND | ND | ND |
| 100-42-5 | STYRENE | -- | -- | mg/kg | 0.14 J | ND | ND | 0.0015 J | 0.0036 J |
| 108-88-3 | TOLUENE | .7 | 500 | mg/kg | 0.042 J | ND | ND | 0.0028 J | 0.0053 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 3.6 | 190 | mg/kg | 52 | 0.0065 J | ND | 0.0054 J | 0.0049 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 8.4 | 190 | mg/kg | 19 | 0.0018 J | ND | 0.0014 J | ND |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | .26 | 500 | mg/kg | 15 | 0.003 J | ND | 0.0054 J | 0.01 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | .26 | 500 | mg/kg | 6.3 | ND | ND | 0.0038 J | 0.007 |
| 1330-20-7 | XYLENES, TOTAL | .26 | 500 | mg/kg | 21 | 0.003 J | ND | 0.0092 J | 0.017 |
| | TOTAL VOCs | -- | -- | mg/kg | 110.8381 | 0.0621 | 0.18 | 0.1135 | 0.167 |

Table 8
OU-2 Summary of VOCs and SVOCs in Soil Samples
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU2<br>Validated Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | PDI-33<br>PDI-33(10-12)<br>D1956-06<br>10 - 12 FT<br>CTECH<br>D1956<br>SOIL<br>3/22/2012 8:50<br>8/20/2012 | PDI-33<br>PDI-33(5-7)<br>D1956-04<br>5 - 7 FT<br>CTECH<br>D1956<br>SOIL<br>3/21/2012 13:35<br>8/20/2012 | Dup of PDI-33(5-7)<br>PDI-33<br>PDI-33A(5-7)<br>D1956-05<br>5 - 7 FT<br>CTECH<br>D1956<br>SOIL<br>3/21/2012 13:40<br>8/20/2012 | PDI-34<br>PDI-34(5-7)<br>D2275-01<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/13/2012 9:50<br>8/20/2012 | Dup of PDI-34(5-7)<br>PDI-34<br>PDI-34A(5-7)<br>D2275-04<br>5 - 7 FT<br>CTECH<br>D2275<br>SOIL<br>4/13/2012 10:00<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|
| | SEMIVOLATILES | | | | | | | | |
| 91-58-7 | 2-CHLORONAPHTHALENE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 52-32-8 | 2-METHYLPHENOL | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 100-52-7 | BENZALDEHYDE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | -- | mg/kg | 0.64 | ND | ND | ND | ND |
| 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | -- | -- | mg/kg | 0.23 J | ND | ND | ND | 0.25 J |
| 86-74-8 | CARBAZOLE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | 7 | 350 | mg/kg | ND | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | -- | -- | mg/kg | 0.44 | 0.39 J | 0.4 J | 0.75 J | 1 J |
| 86-30-6 | N-NITROSODIPHENYLAMINE | -- | -- | mg/kg | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 | 500 | mg/kg | ND | ND | ND | ND | ND |
| 208-96-8 | ACENAPHTHYLENE | 100 | 500 | mg/kg | 0.81 | ND | ND | ND | ND |
| 120-12-7 | ANTHRACENE | 100 | 500 | mg/kg | 0.5 | ND | ND | ND | ND |
| 56-55-3 | BENZO(A)ANTHRACENE | 1 | 5.6 | mg/kg | 0.4 J | ND | ND | ND | ND |
| 50-32-8 | BENZO(A)PYRENE | 1 | 1 | mg/kg | 0.2 J | ND | ND | ND | ND |
| 205-99-2 | BENZO(B)FLUORANTHENE | 1 | 5.6 | mg/kg | 0.19 J | ND | ND | ND | ND |
| 191-24-2 | BENZO(G,H,I)PERYLENE | 100 | 500 | mg/kg | ND | ND | ND | ND | ND |
| 207-08-9 | BENZO(K)FLUORANTHENE | .8 | 56 | mg/kg | ND | ND | ND | ND | ND |
| 218-01-9 | CHRYSENE | 1 | 56 | mg/kg | 0.43 | ND | ND | ND | ND |
| 53-70-3 | DIBENZ(A,H)ANTHRACENE | .33 | 0.56 | mg/kg | ND | ND | ND | ND | ND |
| 206-44-0 | FLUORANTHENE | 100 | 500 | mg/kg | 0.44 | 0.21 J | ND | ND | ND |
| 86-73-7 | FLUORENE | 30 | 500 | mg/kg | 0.68 | ND | ND | ND | ND |
| 193-39-5 | INDENO(1,2,3-C,D)PYRENE | .5 | 5.6 | mg/kg | ND | ND | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | -- | mg/kg | 9.9 | ND | ND | ND | ND |
| 91-20-3 | NAPHTHALENE | 12 | 500 | mg/kg | 25 | ND | ND | ND | ND |
| 85-01-8 | PHENANTHRENE | 100 | 500 | mg/kg | 1.6 | 0.2 J | ND | ND | 0.26 J |
| 129-00-0 | PYRENE | 100 | 500 | mg/kg | 0.67 | 0.19 J | ND | ND | 0.19 J |
| | TOTAL PAHs | | | mg/kg | 40.82 | 0.6 | ND | ND | 0.45 |
| | TOTAL SVOCs | | | mg/kg | 42.13 | 0.99 | 0.4 | 0.75 | 1.7 |
| | OTHER | | | | | | | | |
| 57-12-5 | CYANIDE | 27 | 27 | mg/kg | 0.368 | ND | ND | 0.096 J | 0.104 J |

Notes:
(1) 6NYCRR Part 375 Environmental Remediation Programs (December 14, 2006).
(2) -- indicates no cleanup objective or background level is available.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6NYCRR Part 375 Unrestricted Soil Cleanup Objectives.
(6) Bold and shaded values exceed 6NYCRR Part 375 Commericial Soil Cleanup Objectives.
(7) R indicates rejected data.

# Table 9
## OU-2 Summary of Inorganics in Soil Samples
## Former West 45th Street Gas Works Site
## Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU 2<br>Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | TP-11 (6.5 FEET)<br>R1163-02<br>6.5'<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | TP-14 (6 FEET)<br>R1163-01<br>6'<br>Chemtech<br>R1163<br>Soil<br>1/13/2003<br>4/22/2003 | MW1-0709<br>R2145-02<br>7-9'<br>CHEMTECH<br>R2145<br>Soil<br>4/10/2003<br>6/8/2003 | MW2-0507<br>R2209-03<br>5-7'<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW3-0911<br>R2004-05<br>9-11'<br>Chemtech<br>R2004-05<br>Soil<br>4/2/2003<br>7/2/2003 | MW3-2325<br>R2029-01<br>23-25'<br>Chemtech<br>R2029<br>Soil<br>4/3/2003<br>5/6/2003 | MW4-0911<br>R2260-03<br>9-11'<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW5-1113<br>R2260-01<br>11-13'<br>ChemTech<br>R2260<br>Soil<br>4/21/2003<br>6/10/2003 | MW6-0507<br>R2209-04<br>5-7'<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | MW6-1113<br>R2209-05<br>11-13'<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB3-0507<br>R2004-02<br>5-7'<br>Chemtech<br>R2004<br>Soil<br>4/1/2003<br>7/2/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | | | | | | |
| | METALS | | | | | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 17500 | 7120 | 9140 | 13800 | 7740 | 10000 | 7230 | 8220 | 7020 | 8470 | 4960 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | 0.32 J | ND | ND | ND | ND | ND | ND | ND | ND |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 4.6 | 2.1 | 2.1 | 3.6 | 3.3 | 3.3 | 4 | 2.5 | 2.9 | 2 | 3 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 105 J | 93.3 J | 129 J | 184 | 101 J | 201 J | 83.3 J | 106 J | 96.4 | 130 | 37.4 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.62 J | 0.36 J | 0.36 J | 0.42 J | 0.45 J | 0.36 J | 0.36 J | 0.41 J | 0.46 J | 0.35 J | 0.34 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | 0.35 J | 0.06 J | 0.18 J | 0.22 J | 0.2 J | 0.22 J | ND | 0.48 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 2790 | 6430 | 4660 | 4320 | 3730 | 23200 | 7750 | 3120 | 17400 | 7350 | 1320 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 34.7 | 16.1 | 21.2 | 27.6 | 16.7 J | 26 J | 14.5 | 14.7 | 16.6 | 19.7 | 13.5 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 19.2 | 8.4 | 10.3 | 15.2 | 12.1 J | 13.1 J | 6.2 | 8.9 | 8.5 | 9.2 | 6.6 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 33.7 | 22.6 | 41.2 | 41.3 | 20.6 | 50.9 | 14.8 | 19.7 | 21.8 | 14.2 | 16.8 |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | ND | 4.54 | ND | ND | ND | ND | ND |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 31200 | 14900 | 17900 | 26100 | 16100 | 18900 | 15000 | 17100 | 14900 | 15700 | 13900 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 27.3 | 53.6 | 72.8 | 85.2 | 52.9 | 29.8 | 28.6 | 33.6 | 122 | 26.8 | 7 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 7230 J | 3650 J | 4850 J | 6330 | 3470 J | 8100 J | 3470 J | 3620 J | 3290 | 5150 | 1880 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 508 | 285 | 325 J | 235 J | 465 J | 728 J | 381 | 354 | 309 J | 374 J | 722 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.3 | 0.15 | 0.07 | 0.22 | 0.13 | 0.04 | 0.04 J | 0.04 J | 0.17 | 0.1 | 0.02 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 22.5 | 13.2 | 15.6 | 21 | 14.7 | 17 | 12.7 | 15.7 | 14.4 | 15 | 11.5 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 3600 | 2760 | 4380 J | 6950 J | 2390 J | 6120 J | 1010 J | 2490 J | 2720 J | 4630 J | 480 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 1.7 | 1.1 | 0.66 J | ND | ND | ND | 0.96 | 1 | ND | ND | 0.68 |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 353 J | 273 J | 158 J | 345 J | 197 J | 367 J | 126 J | 138 J | 506 J | 305 J | 125 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 74 | 28.8 | 39.7 | 67.9 | 27.2 J | 51.5 J | 18.1 | 20.8 | 28.5 | 31.4 | 16.1 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 82.3 | 46.3 | 113 | 172 | 47.9 J | 45.9 J | 41.4 J | 74.4 J | 108 | 48.6 | 128 J |
| | TCLP | | | | | | | | | | | | | | |
| 7439-92-1 | Lead[8] | 5000 | | µg/L | ND | 42 | 60.6 | 70.6 | ND | 38 | 74.4 | 43.6 | 55.1 | 38.4 | ND |

**Notes:**

(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)

(2) -- indicates no cleanup objective is developed by NYSDEC.

(3) ND indicates compound was not detected.

(4) J indicates an estimated concentration.

(5) Shaded values exceed 6 NYCRR Part 375 Unrestricted use Soil Cleanup Objectives.

(6) **Bold** and sahded values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commercial Use.

(7) Shaded and italicized values exceed TCLP concentration for Lead.

# Table 9
## OU-2 Summary of Inorganics in Soil Samples
## Former West 45th Street Gas Works Site
## Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU 2<br>Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-5 12-14<br>R1334-05<br>12-14'<br>Chemtech<br>R1334<br>Soil<br>1/27/2003<br>4/22/2003 | SB-5 16-16.5<br>R1334-06<br>16-16.5'<br>Chemtech<br>R1334<br>Soil<br>1/27/2003<br>4/22/2003 | SB6-0507<br>R2004-03<br>5-7'<br>ChemTech<br>R2004<br>Soil<br>4/2/2003<br>7/2/2003 | SB7-0507<br>R2004-01<br>5-7'<br>ChemTech<br>R2004<br>Soil<br>4/1/2003<br>7/2/2003 | SB8-1113<br>R2279-03<br>11-13'<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | SB8-2527<br>R2279-06<br>25-27'<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | SB8-2527DUP<br>R2279-07<br>25-27'<br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 | SB-09-11-13<br>R2068-01<br>11-13'<br>Chemtech<br>R2068<br>Soil<br>4/4/2003<br>5/7/2003 | SB10-3335<br>R2176-02<br>33-35'<br>Chemtech<br>R2176<br>Soil<br>4/14/2003<br>6/8/2003 | SB11-0507<br>R2260-05<br>5-7'<br>ChemTech<br>R2260<br>Soil<br>4/22/2003<br>6/10/2003 | SB-12(10-12)<br>R1359-01<br>10-12'<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | | | | | | |
| | METALS | | | | | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 8860 | 19300 | 8310 | 3600 | 5090 | 13000 | 12800 | 9980 | 8010 | 11400 | 11600 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 0.65 J | 0.77 J | ND | 0.51 J | ND | ND | ND | 0.45 J | ND | ND | 0.56 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 2.2 | 1 J | 2.9 | 1.9 | 2 | 0.62 J | 0.95 J | 3.3 | 6 | 2.6 | 2.4 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 79 | **555** | 105 J | 41.5 J | 81.1 | 157 | 196 | 147 J | 201 | 185 J | 158 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.4 J | 0.28 J | 0.37 J | 0.22 J | 0.28 J | 0.55 J | 0.56 | 0.4 J | 0.33 J | 0.48 J | 0.38 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | 0.1 J | 0.36 J | 0.19 | 0.31 J | ND | ND | ND | 0.23 J | 0.14 J | 0.43 J | ND |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 49600 | 5250 | 9590 | 4650 | 2240 | 1500 | 2030 | 23400 | 7760 | 6660 | 28400 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 20.1 | 47.2 | 17.8 J | 10.6 J | 10.8 | 20.1 | 20.3 | 107 J | 14.5 | 26.3 | 23.9 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 7.2 | 24.8 | 10.8 J | 4.6 J | 5.5 J | 19 | 18.5 | 11.5 J | 7.2 | 13.4 | 13.4 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 18.3 | 39.7 | 26.5 | 15.9 | 13.5 | 30 | 23.3 | 21.1 | 20.5 | 32.5 | 36.1 |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | ND | ND | ND | 3.35 | ND | ND | ND |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 9730 | 31400 | 15800 | 8900 | 8970 | 14600 | 15200 | 22600 | 14300 | 24600 | 20200 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 70.8 | 37.9 | 94.4 | 117 | 16.6 | 173 | 327 | 53.2 | 1000 | 61.5 | 19.8 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 10600 | 11000 | 5170 J | 2890 J | 2310 | 10100 | 9830 | 4930 J | 3820 | 5610 J | 5720 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 198 | 220 | 290 J | 206 J | 197 | 202 | 212 | 300 J | 282 | 461 | 372 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.14 | 0.06 | 0.12 J | 0.07 | 0.28 J | 0.04 J | 0.03 J | 0.19 | 0.15 | 0.09 J | 0.1 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 18.4 | 31.8 | 18.7 | 7.9 | 11.3 | 35.6 | 34.6 | 25.7 | 12.8 | 18.2 | 22.5 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 3280 J | 8020 J | 3650 J | 709 J | 935 J | 9650 J | 9310 J | 5310 J | 2560 J | 6100 J | 6670 |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND | 0.51 J | 1 | ND | ND | ND | 0.52 J | ND | 1.3 | 1 |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.72 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 214 J | ND | 184 J | 108 J | 152 J | 375 J | 369 J | 237 J | 446 J | 119 J | 119 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 22.9 J | 101 J | 26.9 J | 12 J | 12.2 | 19 | 19.1 | 32.8 J | 25.6 | 57.6 | 39.8 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 73.4 J | 90.5 J | 75.4 J | 98.6 J | 33.1 | 138 | 176 | 74.3 J | 137 | 65.9 J | 60.9 J |
| | TCLP | | | | | | | | | | | | | | |
| 7439-92-1 | Lead[8] | 5000 | | µg/L | 76.5 | 131 | 110 | 273 | 50 | *9220* | *14800* | 35 | *7520* | 67.3 | ND |

**Notes:**

(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)

(2) -- indicates no cleanup objective is developed by NYSDEC.

(3) ND indicates compound was not detected.

(4) J indicates an estimated concentration.

(5) Shaded values exceed 6 NYCRR Part 375 Unrestricted use Soil Cleanup Objectives.

(6) **Bold** and sahded values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commer

(7) Shaded and italicized values exceed TCLP concentration for Lead.

# Table 9
## OU-2 Summary of Inorganics in Soil Samples
## Former West 45th Street Gas Works Site
## Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU 2<br>Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-12(19-19.9)<br>R1359-02<br>19-19.9'<br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | SB15-0507<br>R2230-01<br>5-7'<br>ChemTech<br>R2230<br>Soil<br>4/18/2003<br>6/9/2003 | SB17-1012<br>R2209-02<br>10-12'<br>ChemTech<br>R2209<br>Soil<br>4/17/2003<br>6/9/2003 | SB-18 20-22FT<br>R1243-04<br>20-22'<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-18 24-26FT<br>R1243-05<br>24-26'<br>Chemtech<br>R1243<br>Soil<br>1/16/2003<br>4/19/2003 | SB-19 8-10FT<br>R1285-03<br>8-10'<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-19 32-34FT<br>R1285-04<br>32-34'<br>Chemtech<br>R1285<br>Soil<br>1/21/2003<br>4/21/2003 | SB-20 32-34FT<br>R1334-01<br>32-34'<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 | SB-20 34-35FT<br>R1334-02<br>34-35'<br>Chemtech<br>R1334<br>Soil<br>1/23/2003<br>4/22/2003 | SB-21 6-8<br>R1334-03<br>6-8'<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 | SB-21 20-21.5<br>R1334-04<br>20-21.5'<br>Chemtech<br>R1334<br>Soil<br>1/24/2003<br>4/22/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | | | | | | |
| | METALS | | | | | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 4950 J | 8040 | 10500 | 25700 | 19500 | 7110 | 6740 | 7210 | 7020 | 8540 | 9330 |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | 0.28 J | ND | ND | ND | ND | ND | ND | ND | 3.7 J | ND | 0.54 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 0.36 J | 5.3 | 2.6 | 4.5 | 4.6 | 3.7 | 2.5 | 5.7 | **73.6** | 1.6 | 1.9 |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 211 | 106 | 142 | **536** | 346 | 60.5 | 68.2 | 128 | **2040** | 123 | 141 |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.25 J | 0.43 J | 0.4 J | 0.42 J | 0.31 J | 0.35 J | 0.39 J | 0.4 J | 0.56 J | 0.36 J | 0.42 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | 0.31 J | ND | ND | ND | ND | ND | 0.34 J | 6.7 | 0.29 J | 0.18 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 5810 J | 17500 | 3020 | 14800 | 11300 | 34700 | 4990 | 6300 | 9740 | 8080 | 2610 |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 13.8 | 17.2 | 24.1 | 60.6 | 49 | 8.9 J | 17.8 J | 15.5 | 18.5 | 19.8 | 32.2 |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 6.8 | 10 | 12.6 | 25.8 | 23.2 | 4.5 J | 8 | 7.6 | 14.7 | 9.8 | 11.5 |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 36.7 | 32.4 | 24.2 | 77.1 | 43 | 12.3 J | 20.2 J | 21.9 | 87.6 | 25.9 | 38.4 |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | ND | ND | ND | 2.12 | **93** | 0.914 | ND |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 9990 | 22900 | 19600 | 46600 | 38900 | 10600 | 16200 | 14500 | 73200 | 14300 | 21100 |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 4.6 | 328 | 117 | 28.7 | 39.6 | 37.3 | 37.6 | 293 | **5540** | 83.4 | 32.6 |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 3790 J | 5150 | 5920 | 15900 | 11100 | 21500 | 2960 | 3790 | 3600 | 5360 | 4410 |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 567 J | 398 J | 354 J | 492 J | 405 J | 733 | 369 | 271 | 240 | 339 | 435 |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | ND | 0.19 | 0.17 | 0.23 | 0.16 | 0.06 | 0.09 | 1.1 | 0.2 | 0.04 | 0.24 |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 10.6 | 17.3 | 27.4 | 29.7 | 31.8 | 8.6 | 13.3 | 19.7 | 27.2 | 18.6 | 17.3 |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 3130 | 2800 | 6010 J | 22600 J | 16400 J | 1260 J | 1480 J | 1740 J | 1750 J | 3790 J | 4060 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | 0.59 | ND | ND | 4.4 | 3 | ND | 0.64 J | ND | 2.9 | ND | ND |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | 0.64 J | 0.43 J | ND | ND | ND | ND | ND | ND |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | ND | 161 J | 228 J | 273 J | 325 J | 560 J | 280 J | ND | ND | ND | ND |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 22.2 J | 32.5 | 32.2 | 132 | 93.2 | 23.6 | 20.9 | 20.6 J | 28.8 J | 28.4 J | 45.5 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 24 J | 239 | 114 | 107 | 104 | 24.1 | 39.2 | 130 J | 2060 J | 107 J | 54.6 J |
| | TCLP | | | | | | | | | | | | | | |
| 7439-92-1 | Lead[8] | 5000 | | µg/L | ND | 34.5 | 430 | 107 | 146 | ND | 48.6 | 255 | 2280 | ND | ND |

**Notes:**
(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)
(2) -- indicates no cleanup objective is developed by NYSDEC.
(3) ND indicates compound was not detected.
(4) J indicates an estimated concentration.
(5) Shaded values exceed 6 NYCRR Part 375 Unrestricted use Soil Cleanup Objectives.
(6) **Bold** and sahded values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commer
(7) Shaded and italicized values exceed TCLP concentration for Lead.

# Table 9
## OU-2 Summary of Inorganics in Soil Samples
## Former West 45th Street Gas Works Site
## Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU 2<br>Soil Analytical Data<br>Detected Compound Summary | | 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives 12/14/2006 | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives 12/14/2006 | Sample ID:<br>Lab Sample Id:<br>Depth:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | SB-22 16-18FT<br>R1243-02<br>16-18'<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-22 24-25FT<br>R1243-03<br>24-25'<br>Chemtech<br>R1243<br>Soil<br>1/15/2003<br>4/19/2003 | SB-23 9-11FT<br>R1285-01<br>9-11'<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 | SB-23 22-24.5FT<br>R1285-02<br>22-24.5'<br>Chemtech<br>R1285<br>Soil<br>1/20/2003<br>4/21/2003 | SB24-0507<br>R2286-02<br>5-7'<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | SB24-0507DUP<br>R2286-03<br>5-7'<br>ChemTech<br>R2286<br>Soil<br>4/24/2003<br>6/13/2003 | TAR DRIP<br>R1359-03<br><br>Chemtech<br>R1359<br>Soil<br>1/28/2003<br>4/22/2003 | PUR-1<br>R2279-02<br><br>ChemTech<br>R2279<br>Soil<br>4/23/2003<br>6/11/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | | UNITS: | | | | | | | | |
| | METALS | | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | -- | mg/Kg | 6880 | 8820 | 13500 | 7650 | 11100 | 12500 | 4860 J | 211 J |
| 7440-36-0 | Antimony | -- | -- | mg/Kg | ND | ND | ND | ND | ND | ND | ND | 15.3 J |
| 7440-38-2 | Arsenic | 13 | 16 | mg/Kg | 1.7 | 2.3 | 4.3 | 2 | 1.6 | 2.3 | 2.5 | **86.1 J** |
| 7440-39-3 | Barium | 350 | 400 | mg/Kg | 94.1 | 65.4 | 309 | 80.1 | 211 | 317 | 55.3 | 89.8 J |
| 7440-41-7 | Beryllium | 7.2 | 590 | mg/Kg | 0.4 J | 0.53 J | 0.32 J | 0.49 J | 0.33 J | 0.33 J | 0.29 J | 0.1 J |
| 7440-43-9 | Cadmium | 2.5 | 9.3 | mg/Kg | ND | ND | ND | ND | 0.07 J | 0.08 J | ND | 2.3 J |
| 7440-70-2 | Calcium | -- | -- | mg/Kg | 2500 J | 1440 | 15200 | 3560 | 3300 | 4480 | 7020 J | 3000 J |
| 7440-47-3 | Chromium | -- | -- | mg/Kg | 18.4 J | 20.8 | 31.8 J | 20.7 J | 24.9 | 27.5 | 11.6 | 9.9 J |
| 7440-48-4 | Cobalt | -- | -- | mg/Kg | 9.9 | 9.1 | 14.9 | 9.5 | 14 | 15.3 | 5.3 J | 5.3 J |
| 7440-50-8 | Copper | 50 | 270 | mg/Kg | 21.5 | 19.2 | 26 J | 22 J | 23.8 | 22.5 | 19.7 | **350 J** |
| 57-12-5 | Cyanide | 27 | 27 | mg/Kg | ND | ND | ND | ND | ND | ND | ND | **40 J** |
| 7439-89-6 | Iron | -- | -- | mg/Kg | 16200 J | 17600 | 28900 | 16700 | 18600 | 20400 | 12400 | 47900 J |
| 7439-92-1 | Lead | 63 | 1,000 | mg/Kg | 33.7 J | 31.4 | 44.8 | 39.2 | 57.4 | 329 | 83.5 | 449 J |
| 7439-95-4 | Magnesium | -- | -- | mg/Kg | 3520 J | 2780 | 9940 | 3290 | 5820 | 6960 | 2350 J | 232 J |
| 7439-96-5 | Manganese | 1,600 | 10,000 | mg/Kg | 323 J | 321 J | 549 | 314 | 258 | 319 | 357 J | 138 J |
| 7439-97-6 | Mercury | 0.18 | 2.8 | mg/Kg | 0.09 | 0.19 | 0.06 | 0.07 | 0.07 J | 0.06 J | 0.2 J | 0.06 J |
| 7440-02-0 | Nickel | 30 | 310 | mg/Kg | 18.8 J | 15.6 | 19.4 | 15 | 20.9 | 22.2 | 10.5 | 31.6 J |
| 7440-09-7 | Potassium | -- | -- | mg/Kg | 17100 J | 1790 J | 9790 J | 2550 J | 7530 J | 8690 J | 853 | 1580 J |
| 7782-49-2 | Selenium | 3.9 | 1,500 | mg/Kg | ND | ND | 1.5 | ND | ND | ND | 0.82 | 5.7 J |
| 7440-22-4 | Silver | 2 | 1,500 | mg/Kg | ND | ND | ND | ND | ND | ND | 0.55 J | 2.3 J |
| 7440-23-5 | Sodium | -- | -- | mg/Kg | 6590 J | 254 J | 351 J | 236 J | 211 J | 220 J | 284 J | 588 J |
| 7440-28-0 | Thallium | -- | -- | mg/Kg | ND | ND | ND | 0.39 J | ND | ND | ND | ND |
| 7440-62-2 | Vanadium | -- | -- | mg/Kg | 30 J | 29.5 | 64.7 | 27.4 | 56.5 | 64 | 14 J | 77.9 J |
| 7440-66-6 | Zinc | 109 | 10,000 | mg/Kg | 90.2 J | 37.2 | 61.2 | 37.6 | 86.9 | 107 | 47.1 J | 544 J |
| | TCLP | | | | | | | | | | | |
| 7439-92-1 | Lead[8] | 5000 | | µg/L | ND | 32.3 | 34.1 | 42 | 373 | NA | 204 | 88.2 J |

**Notes:**

(1) NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs (December 2006)

(2) -- indicates no cleanup objective is developed by NYSDEC.

(3) ND indicates compound was not detected.

(4) J indicates an estimated concentration.

(5) Shaded values exceed 6 NYCRR Part 375 Unrestricted use Soil Cleanup Objectives.

(6) **Bold** and sahded values exceed 6 NYCRR Part 375 Restricted Soil Cleanup Objectives for Commer

(7) Shaded and italicized values exceed TCLP concentration for Lead.

Table 10
OU-2 Summary of Groundwater Analytical Data
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU-2<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-1<br>MW-1<br>R2496-08<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-2<br>MW-2<br>R2496-03<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW- 2<br>MW- 2<br>Y2831-02<br>Chemtech<br>Y2831<br>Water<br>5/22/2007<br>6/26/2007 | MW- 2<br>MW- 2<br>D3127-01<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-3<br>MW-3<br>R2496-01<br>Chemtech<br>R2496<br>Water<br>5/13/2003<br>6/14/2003 | MW-4<br>MW-4<br>R2496-07<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-4DUP<br>MW-4DUP<br>R2496-09<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-5<br>MW-5<br>R2496-04<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | VOLATILES | | | | | | | | | | |
| 67-64-1 | ACETONE | 50 (G) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 50 (G) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND |
| 104-51-8 | N-BUTYLBENZENE | 5 | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 135-98-8 | SEC-BUTYLBENZENE | 5 | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 67-66-3 | CHLOROFORM | 7 | ug/l | ND | ND | ND | 3.6 J | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | 5 | ug/l | NA | NA | ND | 6.9 | NA | NA | NA | NA |
| 108-87-2 | METHYLCYCLOHEXANE | -- | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 103-65-1 | N-PROPYLBENZENE | 5 | ug/l | NA | NA | NA | 2.2 J | NA | NA | NA | NA |
| 100-42-5 | STYRENE | 5 | ug/l | 3100 | 1.8 JN | ND | ND | 10000 | 390 JN | 440 J | 160 J |
| 1634-04-4 | TERT-BUTYL METHYL ETHER | 10 (G) | ug/l | 4.9 J | ND | ND | ND | ND | ND | ND | 1.3 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 5 | ug/l | NA | NA | NA | 7.3 | NA | NA | NA | NA |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 5 | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| | BTEX VOLATILES | | | | | | | | | | |
| 71-43-2 | BENZENE | 1 | ug/l | 11000 | 280 | ND | 40 | 45000 | 4100 | 4000 | 1000 J |
| 100-41-4 | ETHYLBENZENE | 5 | ug/l | 3100 | 33 | ND | 24 | 13000 | 4200 | 4300 | 990 J |
| 108-88-3 | TOLUENE | 5 | ug/l | 16000 | 6.6 | ND | 1.4 J | 66000 | 3300 | 3400 | 790 J |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | 5 | ug/l | 5500 | 10 | ND | 2.4 J | 19000 | 3400 | 3600 | 690 J |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | 5 | ug/l | 2400 | 20 JN | ND | 6.9 | 8200 | 1400 JN | 1500 | 390 JN |
| 1330-20-7 | XYLENES, TOTAL | 5 | ug/l | 7900 | 30 JN | ND | 9.4 | 27200 | 4800 JN | 5100 | 1080 JN |
| | SEMIVOLATILES | | | | | | | | | | |
| 98-86-2 | ACETOPHENONE | -- | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | ug/l | NA | NA | NA | ND | NA | NA | NA | NA |
| 86-74-8 | CARBAZOLE | -- | ug/l | 16 | ND | ND | ND | 24 | 18 | 20 | 3.4 J |
| 132-64-9 | DIBENZOFURAN | -- | ug/l | 4.3 J | ND | 1.7 J | ND | 8.1 J | 4.1 J | 4.9 J | 3.2 J |
| 131-11-3 | DIMETHYL PHTHALATE | 50 (G) | ug/l | ND | ND | ND | 6.8 J | ND | ND | ND | ND |
| 105-67-9 | 2,4-DIMETHYLPHENOL | 50 (G) | ug/l | ND | ND | ND | ND | 9.2 J | ND | ND | ND |
| 95-48-7 | 2-METHYLPHENOL (O-CRESOL) | 1 | ug/l | ND | ND | ND | ND | 14 | ND | ND | ND |
| MEPH3MEPH | 3+4-METHYLPHENOLS | 1 | ug/l | 28 | ND | ND | ND | 13 | 2.3 J | 2.6 J | ND |
| 108-95-2 | PHENOL | 1 | ug/l | ND | ND | ND | ND | ND | ND | ND | ND |
| | PAHs | | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 (G) | ug/l | 10 J | 33 | 36 | 19 | 21 | 69 | 80 | 52 |
| 208-96-8 | ACENAPHTHYLENE | -- | ug/l | 58 | 4.7 J | 5.9 J | ND | 70 | 75 | 78 J | 11 |
| 120-12-7 | ANTHRACENE | 50 (G) | ug/l | 5.7 J | ND | ND | ND | 8.9 J | 6.5 J | 7.7 J | 4 J |
| | FLUORANTHENE | 50 (G) | µg/L | 2.8 J | 1.4 J | ND | ND | 6.3 J | 2.8 J | 3.2 J | 2.4 J |
| 86-73-7 | FLUORENE | 50 (G) | ug/l | ND | 4.7 J | 2.2 J | ND | 78 J | 36 | 43 | 23 |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | ug/l | 300 | ND | ND | ND | 220 | 550 | 630 | 190 |
| 91-20-3 | NAPHTHALENE | 10 (G) | ug/l | 1800 | ND | ND | 15 | 1600 | 2300 | 2300 | 290 |
| 85-01-8 | PHENANTHRENE | 50 (G) | ug/l | 46 | 2 J | ND | ND | 95 J | 59 | 70 | 8.7 J |
| | PYRENE | 50 (G) | µg/L | 3.8 J | 1.8 J | ND | ND | 7.8 J | 3.4 J | 4.1 J | 3 J |
| | TOTAL PAHs | | ug/l | 2226.3 | 47.6 | 44.1 | 34 | 2107 | 3101.7 | 3216 | 584.1 |
| | TOTAL SVOCs | | ug/l | 2274.6 | 47.6 | 45.8 | 40.8 | 2175.3 | 3126.1 | 3243.5 | 590.7 |

Notes:
(1) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.
(2) -- indicates no standard or guidance value available.
(3) ND indicates compound was not detected.
(4) J indicantes an estimated concentration.
(5) ug/L = micrograms per liter
(6) NA indicates constituent was not analyzed for.
(7) * indicates results were not valid.

Table 10
OU-2 Summary of Groundwater Analytical Data
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU-2<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW-1<br>MW-1<br>R2496-08<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-2<br>MW-2<br>R2496-03<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW- 2<br>MW- 2<br>Y2831-02<br>Chemtech<br>Y2831<br>Water<br>5/22/2007<br>6/26/2007 | MW- 2<br>MW- 2<br>D3127-01<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-3<br>MW-3<br>R2496-01<br>Chemtech<br>R2496<br>Water<br>5/13/2003<br>6/14/2003 | MW-4<br>MW-4<br>R2496-07<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-4DUP<br>MW-4DUP<br>R2496-09<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 | MW-5<br>MW-5<br>R2496-04<br>Chemtech<br>R2496<br>Water<br>5/14/2003<br>6/14/2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | INORGANICS | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | µg/L | 110 J | 875 | 202 | NA | 1250 | 78 J | 69.8 J | 55.1 J |
| 7440-36-0 | Antimony | 3 | µg/L | 17.8 J | 16.8 J | ND | NA | 20.3 J | ND | 15.4 J | 14.8 J |
| 7440-38-2 | Arsenic | 25 | µg/L | 5.9 J | ND | ND | NA | 13 | 6.3 J | 7.8 J | ND |
| 7440-39-3 | Barium | 1000 | µg/L | 90.9 J | 105 J | 93.1 | NA | 87.1 J | 55.6 J | 59.2 J | 148 J |
| 7440-43-9 | CADMIUM | 5 | ug/l | NA | NA | NA | NA | NA | NA | NA | NA |
| 7440-70-2 | Calcium | -- | µg/L | 78000 | 78600 | 66500 | NA | 48800 | 41700 | 44200 | 102000 |
| 7440-47-3 | Chromium | 50 | µg/L | 1.5 J | 2.9 J | ND | NA | 4.1 J | ND | 2.5 J | 2.1 J |
| 7440-48-4 | Cobalt | -- | µg/L | 3.5 J | ND | ND | NA | 2.4 J | ND | ND | ND |
| 7440-50-8 | Copper | 200 | µg/L | ND | 3.3 J | ND | NA | 6.2 J | ND | ND | ND |
| 57-12-5 | Cyanide | 200 | µg/L | 569 | 25 | ND | 1 | 34 | ND | 151 | 21 |
| 7439-89-6 | Iron | 300 | µg/L | 524 | 2370 | 2050 | NA | 2530 | 334 | 384 | 634 |
| 7439-92-1 | LEAD | 25 | ug/l | ND | ND | ND | NA | 24.4 | 4.8 | ND | ND |
| 7439-95-4 | Magnesium | 35000 (G) | µg/L | 9490 | 19100 | 5180 | NA | 4540 J | 9200 | 9910 | 19000 |
| 7439-96-5 | Manganese | 300 | µg/L | 81.4 J | 992 J | 395 | NA | 124 J | 245 J | 267 J | 662 J |
| 7440-02-0 | NICKEL | 100 | ug/l | ND | 2.7 J | ND | NA | ND | ND | 6.8 J | ND |
| 7440-09-7 | Potassium | -- | µg/L | 40200 | 22300 | 47700 J | NA | 21400 | 33100 | 36200 | 23500 |
| 7440-23-5 | Sodium | 20000 | µg/L | 150000 | 149000 | 89900 | NA | 213000 | 95600 | 101000 | 116000 |
| 7440-28-0 | Thallium | 0.5 | µg/L | ND | ND | NA | NA | ND | ND | 5 J | ND |
| 7440-62-2 | Vanadium | -- | µg/L | ND | 7 J | ND | NA | 10.6 J | 7.5 J | 9.7 J | ND |
| 7440-66-6 | ZINC | 2000 (G) | ug/l | 13.9 J | 20.7 | 35.1 | NA | 22.8 | 16.1 J | 17.1 J | 11.2 J |
| | DISSOLVED METALS | | | | | | | | | | |
| | Aluminum | -- | µg/L | NA | NA | ND | NA | NA | NA | NA | NA |
| | Barium | 1000 | µg/L | NA | NA | 68.6 | NA | NA | NA | NA | NA |
| | Calcium | -- | µg/L | NA | NA | 61800 | NA | NA | NA | NA | NA |
| | Iron | 300 | µg/L | NA | NA | 807 | NA | NA | NA | NA | NA |
| | Magnesium | 35000 (G) | µg/L | NA | NA | 4510 | NA | NA | NA | NA | NA |
| | Manganese | 300 | µg/L | NA | NA | 345 | NA | NA | NA | NA | NA |
| | Potassium | -- | µg/L | NA | NA | 46400 J | NA | NA | NA | NA | NA |
| | Sodium | 20000 | µg/L | NA | NA | 80100 | NA | NA | NA | NA | NA |
| | Zinc | 2000 (G) | µg/L | NA | NA | 25.8 | NA | NA | NA | NA | NA |
| | OTHER | | | | | | | | | | |
| 16887-00-6 | CHLORIDE (AS CL) | 250 | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| 57-12-5 | Available CYANIDE | 0.2 | mg/l | 0.063* | 0.011* | NA | NA | 0.090* | 0.014* | 0.018* | 0.080* |
| CBOD5 | CBOD5 | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| NITROGEN | Total Nitrogen | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| TS | TS | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| KN | NITROGEN, KJELDAHL, TOTAL | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| PH | PH | -- | pH | NA | NA | NA | NA | NA | NA | NA | NA |
| TSS | TOTAL SUSPENDED SOLIDS | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |

Notes:
(1) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.
(2) -- indicates no standard or guidance value available.
(3) ND indicates compound was not detected.
(4) J indicantes an estimated concentration.
(5) ug/L = micrograms per liter
(6) NA indicates constituent was not analyzed for.
(7) * indicates results were not valid.

Table 10
OU-2 Summary of Groundwater Analytical Data
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU-2<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 5<br>MW- 5<br>Y2831-01<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 5<br>MW- 5<br>D3127-10<br>Chemtech<br>D3127<br>WATER<br>6/19/2012<br>8/20/2012 | MW-19<br>MW-19<br>Y2831-03<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-19<br>MW-19<br>D3127-09<br>Chemtech<br>D3127<br>WATER<br>6/19/2012 11:50<br>8/20/2012 | MW-21<br>MW-21<br>D3127-07<br>Chemtech<br>D3127<br>WATER<br>6/19/2012<br>8/20/2012 | MW-22<br>MW-22<br>D3127-02<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-22DUP<br>MW-22DUP<br>D3127-03<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-23<br>MW-23<br>D3127-04<br>Chemtech<br>D3127<br>WATER<br>6/19/2012 8:35<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | VOLATILES | | | | | | | | | | |
| 67-64-1 | ACETONE | 50 (G) | ug/L | ND | ND | 21 J | ND | ND | ND | ND | ND |
| 78-93-3 | 2-Butanone | 50 (G) | ug/L | ND | ND | 16 J | ND | ND | ND | ND | ND |
| 104-51-8 | N-BUTYLBENZENE | 5 | ug/l | ND | ND | ND | ND | ND | 2.2 J | ND | ND |
| 135-98-8 | SEC-BUTYLBENZENE | 5 | ug/l | ND | 1.9 J | ND | 4 J | 2.9 J | 0.63 J | 0.8 J | 1 J |
| 67-66-3 | CHLOROFORM | 7 | ug/l | ND | 0.8 J | ND | ND | ND | ND | ND | ND |
| 110-82-7 | CYCLOHEXANE | -- | ug/l | ND | 2.7 J | 2.9 J | 6.4 | ND | ND | ND | 2.2 J |
| 98-82-8 | ISOPROPYLBENZENE (CUMENE) | 5 | ug/l | 32 | 63 | 94 | 210 J | 89 | 18 | 21 | 25 |
| 108-87-2 | METHYLCYCLOHEXANE | -- | ug/l | ND | 6.5 | ND | ND | ND | ND | ND | 5.1 |
| 103-65-1 | N-PROPYLBENZENE | 5 | ug/l | ND | 26 | ND | 74 | 49 | 7.8 | 8.8 | 17 |
| 100-42-5 | STYRENE | 5 | ug/l | 3.7 J | 180 | 28 | 38 | 1100 | 5.3 | 5.2 | 140 J |
| 1634-04-4 | TERT-BUTYL METHYL ETHER | 10 (G) | ug/l | 3.1 J | ND | ND | 2.7 J | 3.7 J | ND | ND | 1.8 J |
| 95-63-6 | 1,2,4-TRIMETHYLBENZENE | 5 | ug/l | ND | 190 J | ND | 440 J | 580 | 87 | 95 | 190 J |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE (MESITYLENE) | 5 | ug/l | ND | 53 | ND | 170 | 150 | 22 | 26 | 61 |
| | BTEX VOLATILES | | | | | | | | | | |
| 71-43-2 | BENZENE | 1 | ug/l | 200 | 1000 | 32000 | 55000 | 13000 | 16 | 18 | 1200 |
| 100-41-4 | ETHYLBENZENE | 5 | ug/l | 250 | 960 J | 8000 | 11000 | 1800 | 88 | 91 | 530 |
| 108-88-3 | TOLUENE | 5 | ug/l | 110 | 900 J | 13000 | 9300 | 5600 | 14 | 14 | 1200 |
| XYLMP | M,P-XYLENE (SUM OF ISOMERS) | 5 | ug/l | 150 | 750 | 6800 | 6100 J | 1800 | 91 | 94 | 670 |
| 95-47-6 | O-XYLENE (1,2-DIMETHYLBENZENE) | 5 | ug/l | 90 | 430 | 3000 | 2700 J | 970 | 49 | 49 | 330 |
| 1330-20-7 | XYLENES, TOTAL | 5 | ug/l | 240 | 1200 | 9800 | 8800 J | 2800 | 140 | 140 | 990 |
| | SEMIVOLATILES | | | | | | | | | | |
| 98-86-2 | ACETOPHENONE | -- | ug/l | ND | ND | 16 | 9.3 J | 11 | ND | ND | ND |
| 92-52-4 | BIPHENYL (DIPHENYL) | -- | ug/l | ND | 15 | 17 | 23 | 21 | ND | ND | 4.6 J |
| 86-74-8 | CARBAZOLE | -- | ug/l | ND | ND | 16 | 23 J | 7.3 J | ND | ND | ND |
| 132-64-9 | DIBENZOFURAN | -- | ug/l | ND | ND | 6.7 J | 9.2 J | ND | ND | ND | ND |
| 131-11-3 | DIMETHYL PHTHALATE | 50 (G) | ug/l | ND | ND | | ND | ND | ND | ND | ND |
| 105-67-9 | 2,4-DIMETHYLPHENOL | 50 (G) | ug/l | ND | ND | 39 | ND | 24 | ND | ND | ND |
| 95-48-7 | 2-METHYLPHENOL (O-CRESOL) | 1 | ug/l | ND | ND | 21 | 14 | 15 | ND | ND | ND |
| MEPH3MEPH | 3+4-METHYLPHENOLS | 1 | ug/l | ND | ND | 23 | 15 | 12 | ND | ND | ND |
| 108-95-2 | PHENOL | 1 | ug/l | ND | ND | 53 J | 26 | ND | ND | ND | ND |
| | PAHs | | | | | | | | | | |
| 83-32-9 | ACENAPHTHENE | 20 (G) | ug/l | 16 | 29 | 27 | 49 | 36 | 5.1 J | 5 J | 4.5 J |
| 208-96-8 | ACENAPHTHYLENE | -- | ug/l | 3.5 J | 11 | 4.9 J | ND | 72 | 5.1 J | 5.2 J | ND |
| 120-12-7 | ANTHRACENE | 50 (G) | ug/l | 1.8 J | ND | 4.9 J | 4.7 J | 7.3 J | ND | ND | ND |
| | FLUORANTHENE | 50 (G) | µg/L | 1.8 J | ND | 3.5 J | ND | ND | ND | ND | ND |
| 86-73-7 | FLUORENE | 50 (G) | ug/l | 11 | 20 | 60 | 74 | 28 | ND | ND | ND |
| 91-57-6 | 2-METHYLNAPHTHALENE | -- | ug/l | 45 | 220 | 130 | 240 | 400 | 33 | 33 | 54 |
| 91-20-3 | NAPHTHALENE | 10 (G) | ug/l | 460 | 1000 | 1400 | 2700 | 3100 | 320 | 320 | 1600 |
| 85-01-8 | PHENANTHRENE | 50 (G) | ug/l | 13 | 27 | 61 | 72 | 30 | ND | ND | ND |
| | PYRENE | 50 (G) | µg/L | 2.8 J | ND | 4.1 J | ND | ND | ND | ND | ND |
| | TOTAL PAHs | | ug/l | 554.9 | 1307 | 1695.4 | 3139.7 | 3673.3 | 363.2 | 363.2 | 1658.5 |
| | TOTAL SVOCs | | ug/l | 554.9 | 1322 | 1887.1 | 3259.2 | 3763.6 | 363.2 | 363.2 | 1663.1 |

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Interim Site Management Plan

| Consolidated Edison<br>Former West 45th Street Gas Works - OU-2<br>Validated Groundwater Analytical Data<br>Detected Compound Summary | | NYSDEC Class GA Groundwater Standards/Guidance Values [1] | Location ID:<br>Sample ID:<br>Lab Sample Id:<br>Source:<br>SDG:<br>Matrix:<br>Sampled:<br>Validated: | MW- 5<br>MW- 5<br>Y2831-01<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW- 5<br>MW- 5<br>D3127-10<br>Chemtech<br>D3127<br>WATER<br>6/19/2012<br>8/20/2012 | MW-19<br>MW-19<br>Y2831-03<br>Chemtech<br>Y2831<br>WATER<br>5/22/2007<br>6/26/2007 | MW-19<br>MW-19<br>D3127-09<br>Chemtech<br>D3127<br>WATER<br>6/19/2012 11:50<br>8/20/2012 | MW-21<br>MW-21<br>D3127-07<br>Chemtech<br>D3127<br>WATER<br>6/19/2012<br>8/20/2012 | MW-22<br>MW-22<br>D3127-02<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-22DUP<br>MW-22DUP<br>D3127-03<br>Chemtech<br>D3127<br>WATER<br>6/18/2012<br>8/20/2012 | MW-23<br>MW-23<br>D3127-04<br>Chemtech<br>D3127<br>WATER<br>6/19/2012 8:35<br>8/20/2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS NO. | COMPOUND | | UNITS: | | | | | | | | |
| | INORGANICS | | | | | | | | | | |
| 7429-90-5 | Aluminum | -- | µg/L | 2820 | NA | ND | NA | NA | NA | NA | NA |
| 7440-36-0 | Antimony | 3 | µg/L | ND | NA | ND | NA | NA | NA | NA | NA |
| 7440-38-2 | Arsenic | 25 | µg/L | ND | NA | 4.78 J | NA | NA | NA | NA | NA |
| 7440-39-3 | Barium | 1000 | µg/L | 88.6 | NA | 870 | NA | NA | NA | NA | NA |
| 7440-43-9 | CADMIUM | 5 | ug/l | NA | 1.03 J | NA | NA | NA | NA | NA | NA |
| 7440-70-2 | Calcium | -- | µg/L | 77400 | NA | 195000 | NA | NA | NA | NA | NA |
| 7440-47-3 | Chromium | 50 | µg/L | 6.47 | 0.005 U | ND | NA | NA | NA | NA | NA |
| 7440-48-4 | Cobalt | -- | µg/L | ND | NA | ND | NA | NA | NA | NA | NA |
| 7440-50-8 | Copper | 200 | µg/L | 20.9 | 2.6 U | ND | NA | NA | NA | NA | NA |
| 57-12-5 | Cyanide | 200 | µg/L | ND | 41 | 18 | 55 | 788 | 15 | 16 | 234 |
| 7439-89-6 | Iron | 300 | µg/L | 1530 | NA | 24500 | NA | NA | NA | NA | NA |
| 7439-92-1 | LEAD | 25 | ug/l | 8.49 | 23.9 J | ND | NA | NA | NA | NA | NA |
| 7439-95-4 | Magnesium | 35000 (G) | µg/L | 286 J | NA | 43000 | NA | NA | NA | NA | NA |
| 7439-96-5 | Manganese | 300 | µg/L | 22.4 | NA | 12500 | NA | NA | NA | NA | NA |
| 7440-02-0 | NICKEL | 100 | ug/l | 11.5 J | 4.11 J | ND | NA | NA | NA | NA | NA |
| 7440-09-7 | Potassium | -- | µg/L | 22600 J | NA | 45700 J | NA | NA | NA | NA | NA |
| 7440-23-5 | Sodium | 20000 | µg/L | 235000 | NA | 652000 | NA | NA | NA | NA | NA |
| 7440-28-0 | Thallium | 0.5 | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 7440-62-2 | Vanadium | -- | µg/L | 14.9 J | NA | ND | NA | NA | NA | NA | NA |
| 7440-66-6 | ZINC | 2000 (G) | ug/l | 65.7 | 35.4 J | 39.5 | NA | NA | NA | NA | NA |
| | DISSOLVED METALS | | | | | | | | | | |
| | Aluminum | -- | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Barium | 1000 | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Calcium | -- | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Iron | 300 | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Magnesium | 35000 (G) | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Manganese | 300 | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Potassium | -- | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Sodium | 20000 | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | Zinc | 2000 (G) | µg/L | NA | NA | NA | NA | NA | NA | NA | NA |
| | OTHER | | | | | | | | | | |
| 16887-00-6 | CHLORIDE (AS CL) | 250 | mg/l | NA | 100 | NA | NA | NA | NA | NA | NA |
| 57-12-5 | Available CYANIDE | 0.2 | mg/l | NA | NA | NA | NA | NA | NA | NA | NA |
| CBOD5 | CBOD5 | -- | mg/l | NA | 17 | NA | NA | NA | NA | NA | NA |
| NITROGEN | Total Nitrogen | -- | mg/l | NA | 1.1 | NA | NA | NA | NA | NA | NA |
| TS | TS | -- | mg/l | NA | 339 | NA | NA | NA | NA | NA | NA |
| KN | NITROGEN, KJELDAHL, TOTAL | -- | mg/l | NA | 1.1 | NA | NA | NA | NA | NA | NA |
| PH | PH | -- | pH | NA | 8.45 | NA | NA | NA | NA | NA | NA |
| TSS | TOTAL SUSPENDED SOLIDS | -- | mg/l | NA | 6 | NA | NA | NA | NA | NA | NA |

Notes:
(1) Shaded values exceed NYSDEC Class GA Groundwater Standards and Guidance Values.
(2) -- indicates no standard or guidance value available.
(3) ND indicates compound was not detected.
(4) J indicantes an estimated concentration.
(5) ug/L = micrograms per liter
(6) NA indicates constituent was not analyzed for.
(7) * indicates results were not valid.

Table 11
OU-2 Summary of NAPL Physical Characteristics
Former West 45th Street Gas Works Site
Interim Site Management Plan

| Physical Characteristic | Units | MW-4 NAPL Sample | MW-6 NAPL Sample |
|---|---|---|---|
| **Density** | $g/cm^3$ | 1.1115 | 1.0732 |
| **Viscosity** | CentiStoke (cSt) | 304.3 | 140.6 |
| **Water by Distillation** | Volume % | 1.6 | 32 |
| **Interfacial Tension** | Millinewton per meterm (N/m) | 19.3 | 20.2 |
| **Surface Tension** | mN/m | 34.8 | 34.2 |

# FIGURES



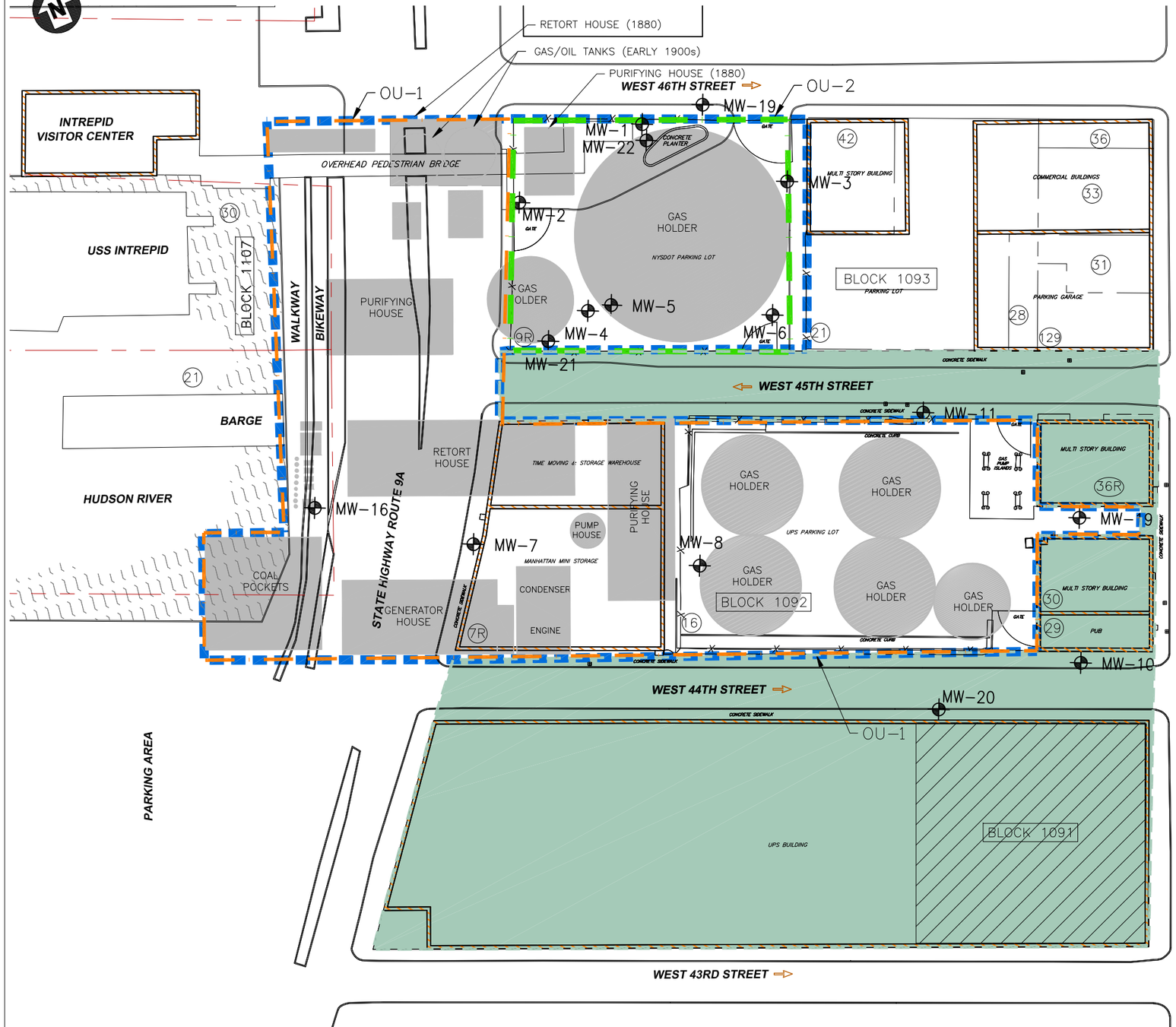

**FIGURE 1**

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45TH STREET GAS WORKS
INTERIM SITE MANAGEMENT PLAN
NEW YORK, NEW YORK

SITE LOCATION MAP

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\ConEd\450089 - W45th OU-2 AAR 2016\ENGR\OU2\Figure 1 Site Location.mxd
DATE: 10/4/2016 CREATED BY: S. Liberatore




LEGEND:

- CURRENT FEATURES
- HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)
- EXISTING BUILDING
- CHAIN LINK FENCE
- LIMITS OF OU-1 (ON-SITE)
- LIMITS OF OU-2 (ON-SITE)
- OVERALL SITE BOUNDARY (ON-SITE)
- OU-1 OFF-SITE
- BLOCK 1093 — TAX BLOCK NUMBER
- (21) — TAX LOT NUMBER FOR PARCELS WITHIN FORMER MGP
- TAX LOT BOUNDARIES
- APPROXIMATE EXTENT OF UPS PARKING GARAGE
- MONITORING WELL

100 50 0 100 200

SCALE: 1"=100'

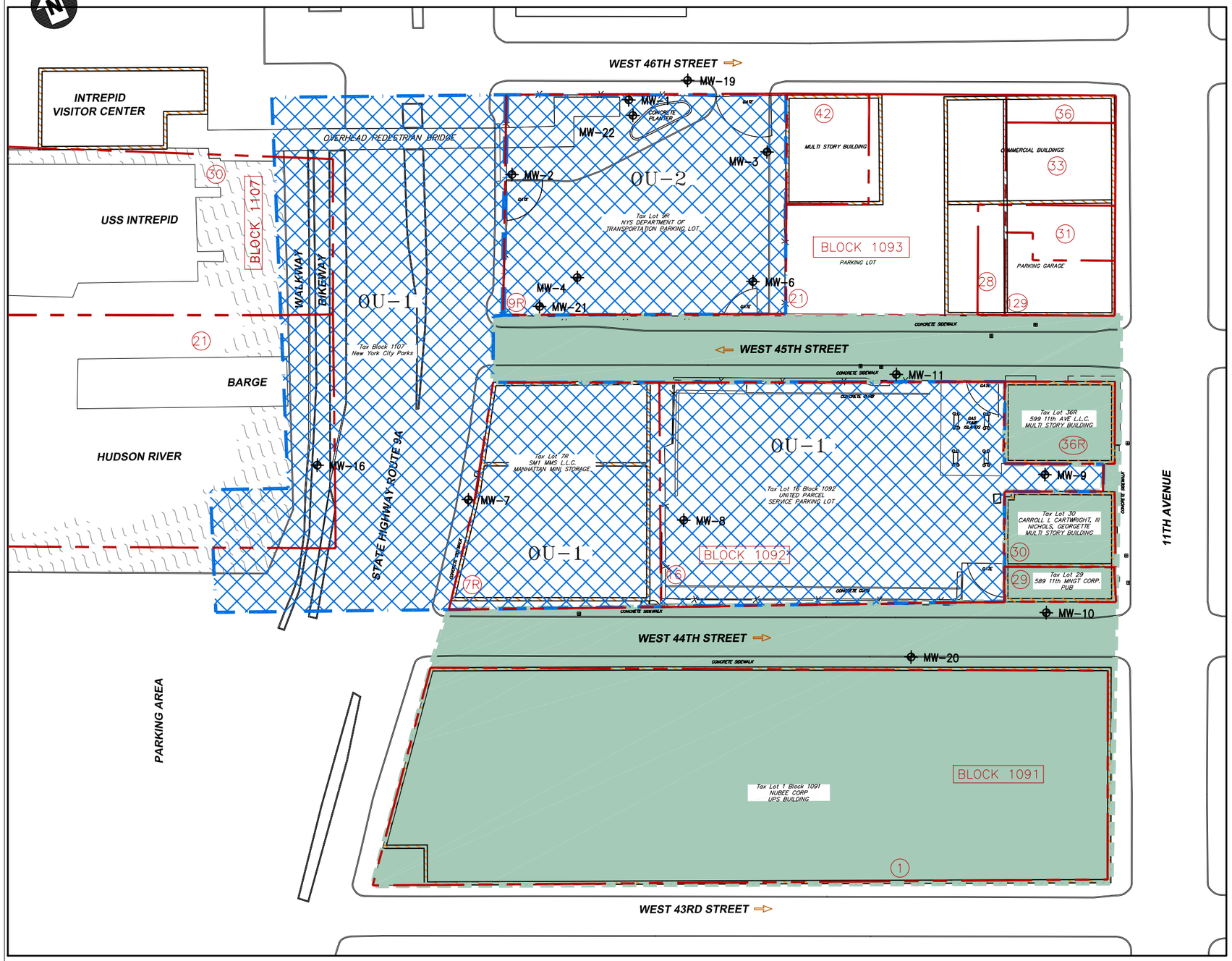
# FIGURE 2

CONSOLIDATED EDISON OF NEW YORK
WEST 45th STREET
NEW YORK, NEW YORK

## SITE BOUNDARIES AND FORMER MGP STRUCTURES

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\448953 - WEST 45TH STREET RAWP - SMP\CAD\FIGURES\448953-SK004A.DWG
PLOT DATE: 12/19/2022 4:20 PM PLOTTED BY: RUSSO, JILL [US-US]




LEGEND:

- CURRENT FEATURES
- HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)
- EXISTING BUILDING
- CHAIN LINK FENCE
- MONITORING WELL
- ON-SITE (SEE NOTE 1)
- OFF-SITE (SEE NOTE 2)
- BLOCK 1093 — TAX BLOCK NUMBER
- 21 — TAX LOT NUMBER FOR PARCELS WITHIN FORMER MGP
- TAX LOT BOUNDARIES

NOTES:

1. THE FULL LIST OF INSTITUTIONAL CONTROLS (ICS) AND ENGINEER CONTROLS (ECS), WHICH APPLY TO THE OU-1 AND OU-2 PROPERTIES ARE DESCRIBED IN THE INTERIM SITE MANAGEMENT PLAN.

2. LIMITED INSTITUTIONAL CONTROLS APPLY TO THE OU-1 OFF-SITE AREAS INCLUDING (1) THE POTENTIAL NEED FOR A VAPOR INTRUSION EVALUATION, MONITORING, AND/OR MITIGATION FOR ANY BUILDINGS DEVELOPED IN THE AREA WITHIN THE IC BOUNDARIES ,AND (2) THE POTENTIAL NEED TO EVALUATE IF FURTHER INVESTIGATION OR REMEDIATION IS REQUIRED SHOULD LARGE-SCALE REDEVELOPMENT OCCUR, IF ANY OF THE EXISTING STRUCTURES ARE DEMOLISHED, OR IF THE SUBSURFACE IS OTHERWISE MADE ACCESSIBLE.

100 50 0 100 200

SCALE: 1"=100'

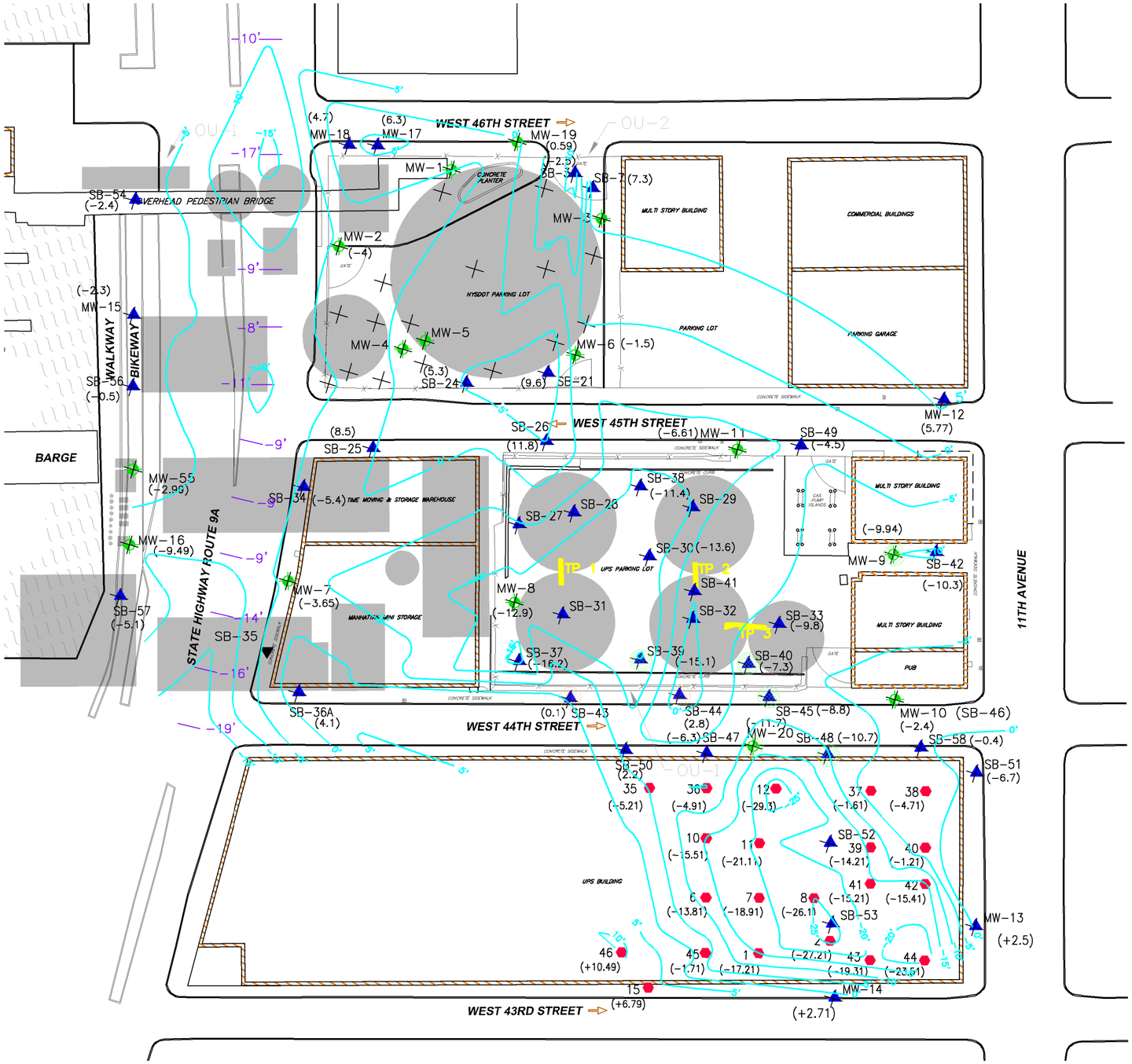
# FIGURE 3

CONSOLIDATED EDISON OF NEW YORK
WEST 45th STREET
NEW YORK, NEW YORK

## INSTITUTIONAL CONTROLS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\448953 - WEST 45TH STREET RAWP - SMP\CAD\FIGURES\448953-SK007A.DWG
PLOT DATE: 12/19/2022 4:23 PM PLOTTED BY: RUSSO, JILL [US-US]




LEGEND:

- CURRENT FEATURES
- HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)
- EXISTING BUILDING
- CHAIN LINK FENCE
- MEDIAN
- MW-1 — MONITORING WELL
- SB-5 — SOIL BORING
- TEST PIT
- HISTORICAL BORINGS
- (10.15) — SUSPECTED BEDROCK ELEVATION (NAVD88)
- SOLIDIFIED COAL TAR OBSERVED
- NAPL OBSERVED
- −10 — INTERCEPTING SEWER
- −10 — SUSPECTED BEDROCK ELEVATION 5 FT CONTOURS (DASHED WHERE INFERRED)
- SB-35 ▼ — SOIL BORING SB-35 WAS NOT ADVANCED DUE TO THE PRESENCE SUBSURFACE OBSTRUCTION.

COAL TAR OBSERVATIONS

| LOCATION | APPROXIMATE DEPTH OBSERVED (FEET bgs) |
|---|---|
| SB-43 | 3-5' |
| SB-44 | 4-5' |

NAPL OBSERVATIONS

| LOCATION | APPROXIMATE DEPTH OBSERVED (FEET bgs) |
|---|---|
| MW-9 | 21-24' |
| MW-20 | 12-13'; 15-23' |
| SB-39 | 31-33' |
| SB-40 | 23-25' |
| SB-45 | 15-17' |
| SB-48 | 20-23' |

NOTES:

1. CONTOURS TO BEDROCK ARE BASED ON INTERPRETATION OF AVAILABLE DESCRIPTIONS OF BORING LOGS AND FIELD NOTES.

2. CONTOURS HAVE BEEN DRAWN IN REFERENCE TO NATURAL BEDROCK STRUCTURE, TRENDING IN A NORTHEAST DIRECTION, DIPPING AT APPROXIMATELY 55 TO 75 DEGREES SOUTHWEST.

3. ELEVATIONS ALONG STATE HIGHWAY ROUTE 9A WERE TAKEN FROM THE CITY OF NEW YORK BUREAU OF WATER POLLUTION CONTROL SEWER MAPS (INTERCEPTING SEWER), JULY 1968.

4. NON-BEDROCK REFUSAL WAS ENCOUNTERED AT MW-1, MW-3, MW-4, MW-5, SB-27, SB-28, SB-29, SB-31, SB-32 AND SB-41.

5. HISTORICAL BORING LOCATIONS AND ELEVATIONS ARE ESTIMATED BASED ON HISTORICAL DRAWINGS OBTAINED FROM UPS DATED 1959. IT WAS ASSUMED ELEVATIONS ILLUSTRATED ON THE HISTORICAL DRAWINGS WERE BASED ON NGVD29. ELEVATIONS WERE CONVERTED TO NAVD88.

6. ELEVATIONS BASED ON NAVD88.

80 40 0 80 160

SCALE: 1"=80'

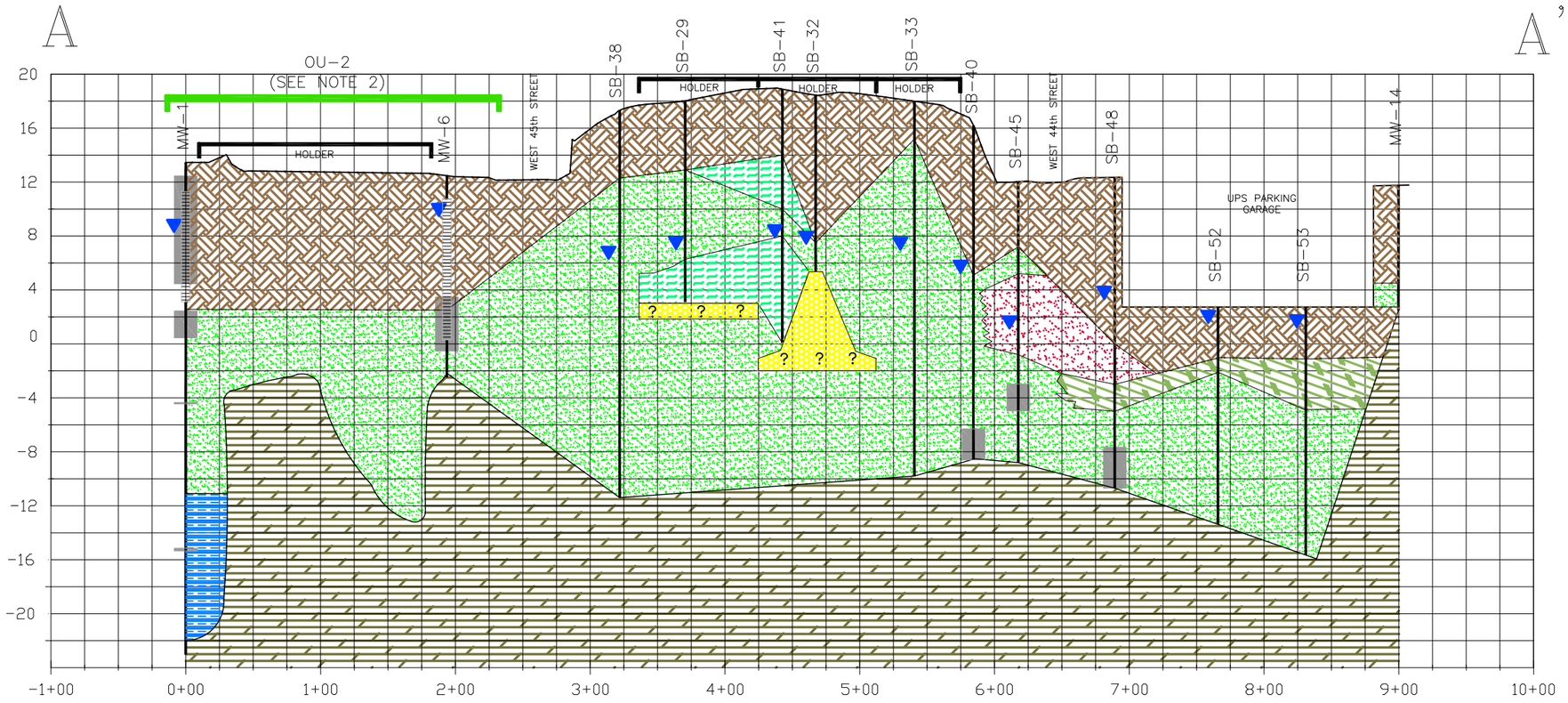
FIGURE 4

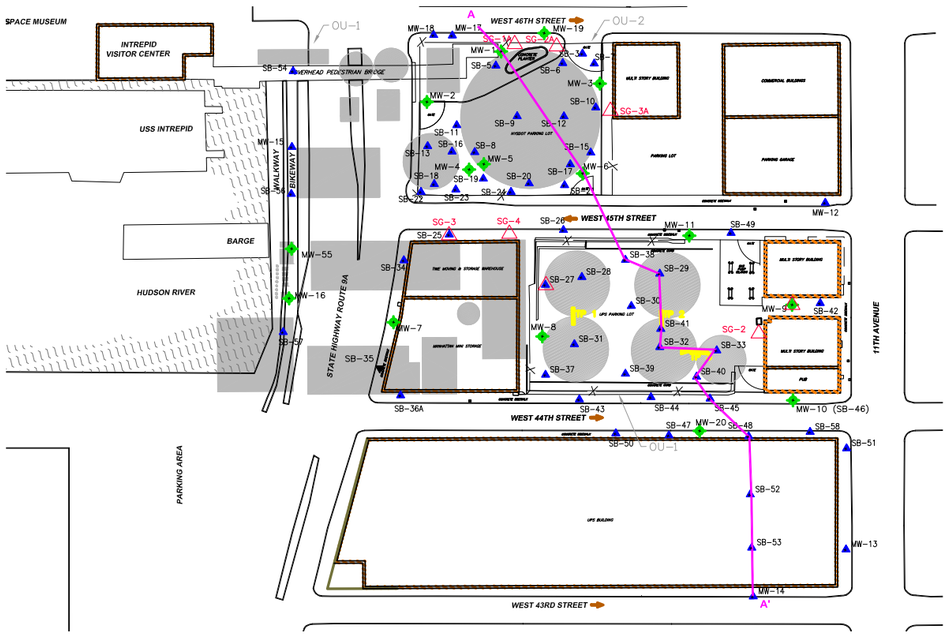
CONSOLIDATED EDISON OF NEW YORK
WEST 45th STREET
NEW YORK, NEW YORK

BEDROCK ELEVATIONS AND NAPL SUMMARY BASED ON OU-1 INVESTIGATION

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\446340 - W45TH ST\CAD\446340-C004.DWG
PLOT DATE: 4/29/2021 3:03 PM PLOTTED BY: RUSSO, JILL




KEY MAP SHOWING CROSS-SECTION LINE A-A'

LEGEND:

- FILL (SAND, GRAVEL, BRICK, CONCRETE)
- SILT
- SAND
- PEAT
- CLAY
- GRAVEL
- SUSPECTED BEDROCK
- SUSPECTED HOLDER BOTTOM
- VISIBLE NAPL OR SOLIDIFIED COAL TAR
- ELEVATION OF WATER TABLE
- WELL SCREEN FOR MONITORING WELL
- SOIL BORING

NOTES:

1. ELEVATIONS BASED ON NAVD88.
2. SUBSURFACE CONDITIONS AT OU-2 WERE TAKEN FROM THE SITE CHARACTERIZATION REPORT FOR THE FORMER WEST 45th STREET WORKS SITE OU-2 (PARSONS, 2003).

10 5 0 10 20

SCALE: 1"=10'

VERTICAL SCALE

100 50 0 100 200

SCALE: 1"=100'

HORIZONTAL SCALE

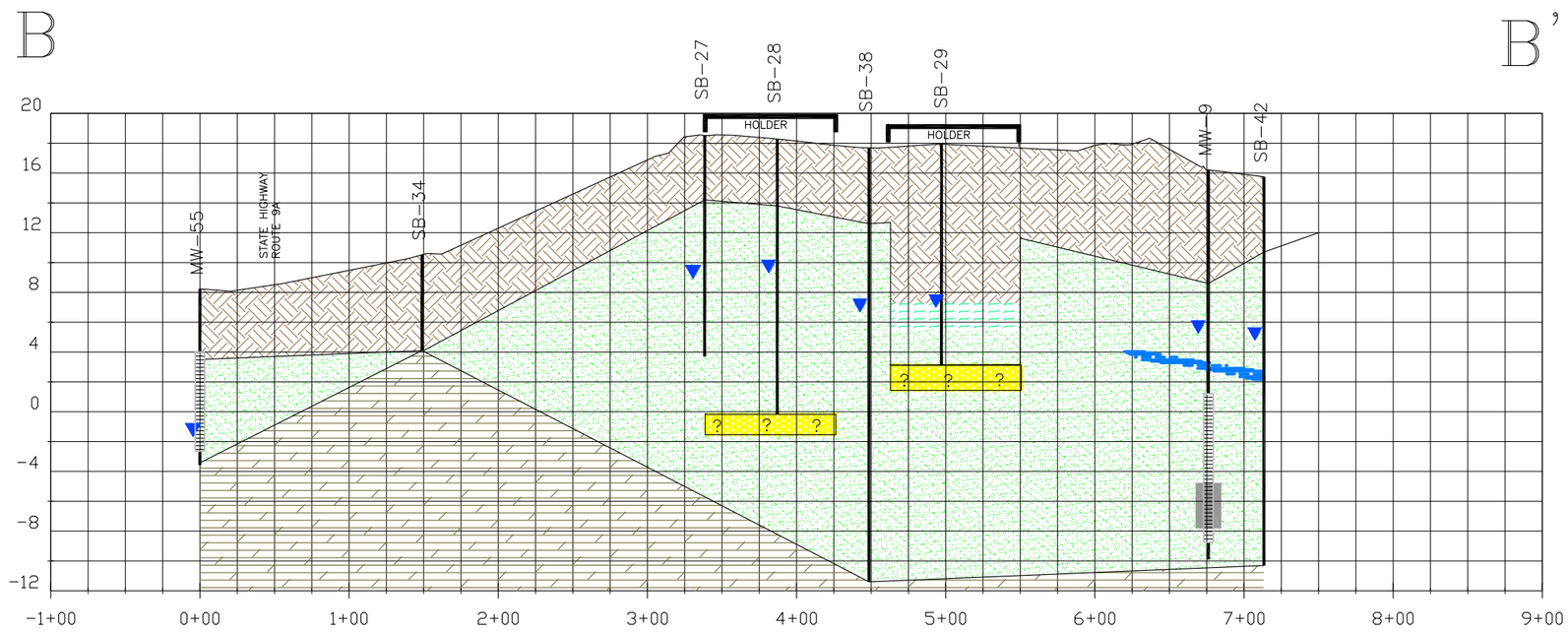
# FIGURE 5-1

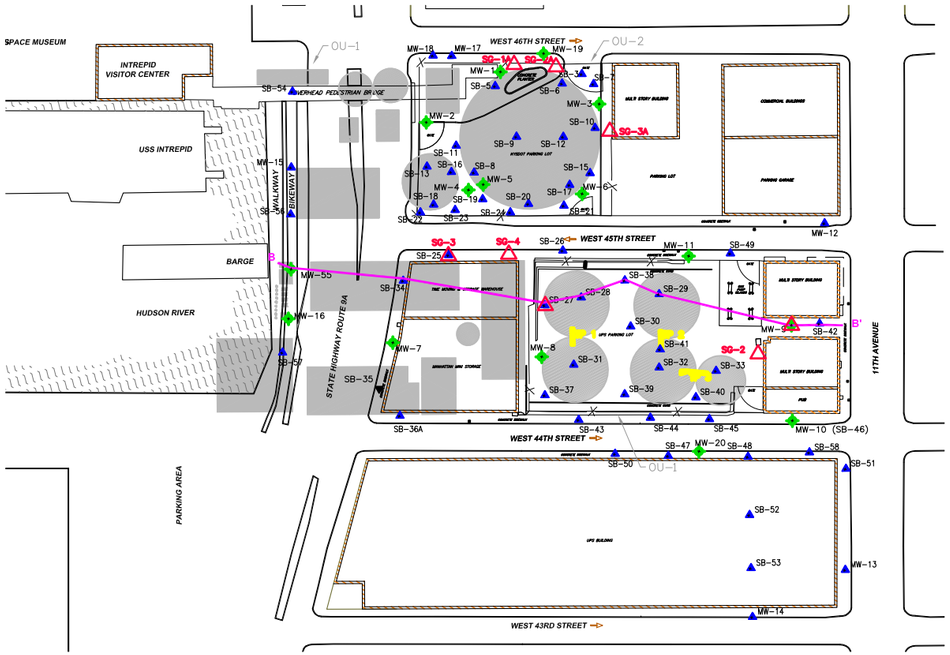
**CONSOLIDATED EDISON OF NEW YORK**
**WEST 45th STREET**
**NEW YORK, NEW YORK**

## OU-1 INVESTIGATION
## CROSS SECTION A-A'

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

FILE NAME: P:\CONED\442145 - WEST 45TH STREET\CAD\RIR REPORT\442145RIR006.DWG
PLOT DATE: 4/29/2021 10:22 AM PLOTTED BY: RUSSO, JILL




KEY MAP
SHOWING CROSS-SECTION LINE B-B'

LEGEND:

- FILL (SAND, GRAVEL, BRICK, CONCRETE)
- SILT
- SAND
- PEAT
- CLAY
- GRAVEL
- SUSPECTED BEDROCK
- SUSPECTED HOLDER BOTTOM
- VISIBLE NAPL OR SOLIDIFIED COAL TAR
- ELEVATION OF WATER TABLE
- WELL SCREEN FOR MONITORING WELL
- SOIL BORING

NOTE: ELEVATIONS BASED ON NAVD88.

10 5 0 10 20

SCALE: 1"=10'
VERTICAL SCALE

100 50 0 100 200

SCALE: 1"=100'
HORIZONTAL SCALE

**FIGURE 5-2**

**CONSOLIDATED EDISON OF NEW YORK**
**WEST 45th STREET**
**NEW YORK, NEW YORK**

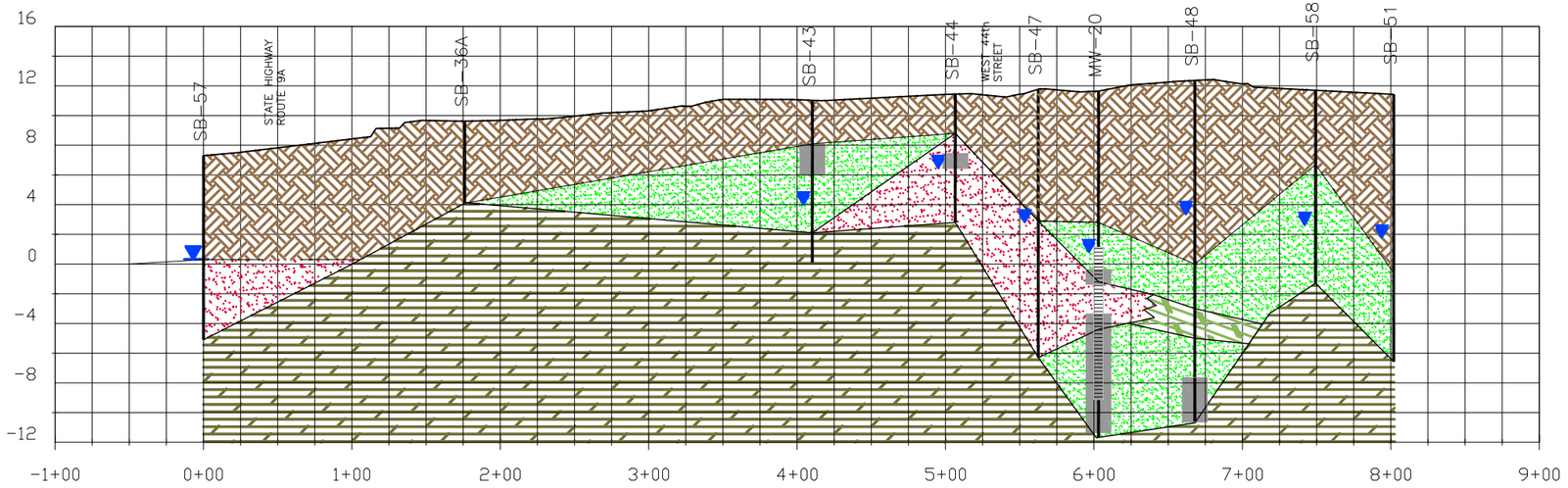
OU-1 INVESTIGATION
CROSS SECTION B-B'

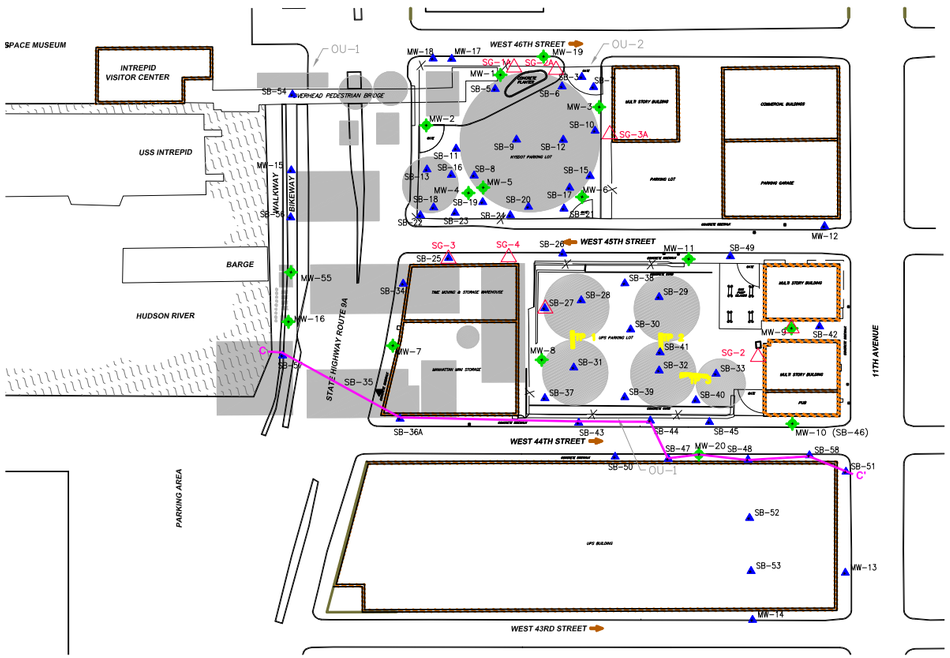
PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

FILE NAME: P:\CONED\442145 - WEST 45TH STREET\CAD\RIR REPORT\442145RIR006.DWG
PLOT DATE: 4/29/2021 10:23 AM PLOTTED BY: RUSSO, JILL

C

C'




KEY MAP
SHOWING CROSS-SECTION LINE C-C'

LEGEND:

- FILL (SAND, GRAVEL, BRICK, CONCRETE)
- SILT
- SAND
- PEAT
- CLAY
- GRAVEL
- SUSPECTED BEDROCK
- SUSPECTED HOLDER BOTTOM
- VISIBLE NAPL OR SOLIDIFIED COAL TAR
- ELEVATION OF WATER TABLE
- WELL SCREEN FOR MONITORING WELL
- SOIL BORING

NOTE: ELEVATIONS BASED ON NAVD88.

10 5 0 10 20

SCALE: 1"=10'
VERTICAL SCALE

100 50 0 100 200

SCALE: 1"=100'
HORIZONTAL SCALE

**FIGURE 5-3**

**CONSOLIDATED EDISON OF NEW YORK**
**WEST 45th STREET**
**NEW YORK, NEW YORK**

**OU-1 INVESTIGATION**
**CROSS SECTION C-C'**


PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560



FILE NAME: P:\CONED\442145 - WEST 45TH STREET\CAD\RIR REPORT\442145RIR006.DWG
PLOT DATE: 4/29/2021 10:25 AM PLOTTED BY: RUSSO, JILL

WEST 46th STREET
( TRAFFIC FLOW )

HIGHWAY 9A
( TRAFFIC FLOW )
12th AVENUE - STATE

WEST 45th STREET
( TRAFFIC FLOW )

A
A'
B
B'
C
C'
D
D'

MW-19
PDI-32 (-1.4')/-15'
MW-1
(-30.4')/-45'*
PW-2
PDI-2 PDI-3
(-28.8')/-43'
(-2.7')/-17'
PDI-1
MW-22
(-24.1')/-37.5'*
PDI-5
(-33.6')/-47.5'*
PDI-4
(-25.5')/-39.5'*
PDI-6
(1.2')/-13'
PDI-7
(-27.3')/-41.5'*
MW-3
(-17.4')/-30'
PDI-33
CONT-1
(-16.2')/-30'
PDI-34
(5')/-7'
MW-2
CONT-7
(-3.1')/-15'*
CONT-2
(-16.7')/-30'
PDI-9 (-21.6')/-36'
PDI-28
(1.9')/-9'
PDI-27
(-26')/-37'
PDI-10
(-19.3')/-32'
PDI-11
(-27.8')/-41'
(-16.2')/-27'
PDI-30
PDI-26
(-11')/-22'*
(-4.8')/-16'*
CONT-5
MW-24
(-1.8')/-13'*
PW-1
(-1.3')/-12.5'*
PDI-29
(-24.3')/-35'
PDI-22
(-19.8')/-30.5'*
PDI-21
(-29')/-40'*
(-12.3')/-24.5'
CONT-8
(-22.5')/-35'
CONT-3
PDI-13
(-27.5')/-40'
PDI-12
(0.9')/-12.5'
(-14.7')/-25'
MW-4
MW-5
PDI-18/
MW-23
(-13.4')/-25'
PDI-19
(-21.7')/-33'
PDI-16
(-18.2')/-30'
MW-6
PDI-25
(-9.5')/-20'*
PDI-23
PDI-24/
MW-21
(-16.6')/-27'
PDI-20
(-12.5')/-23.5'
PDI-17
(-27.2')/-39'
PDI-15
(1.2')/-11'
(4.6')/-8'
CONT-4
PDI-31
(-5')/-15'

TANK
WAGON SHED (PUMPING HOUSE)
OVERHEAD DECK
OVERHEAD CANOPY
OVERHEAD PEDESTRIAN BRIDGE
CONCRETE SIDEWALK
CONCRETE RAMP
STAIRS
GATE
CHAIN LINK FENCE
SLIDING GATE
GRANITE CURB
SHED
CONCRETE
ASPHALT PARKING LOT
GAS HOLDER
TRENCH DRAIN
APPROXIMATE LOCATION OF BURIED BRICK WALL
PST
SLIDING GATE

## LEGEND:

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURES
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- ABANDONED MONITORING WELL
- ABANDONED PUMPING WELL
- EXISTING PUMPING WELL
- (-27.3')/-41.5' (BEDROCK ELEVATION)/DEPTH RELATIVE TO GROUND SURFACE (NAVD88)
- * NX CORE WAS NOT COLLECTED AT THIS LOCATION BECAUSE OF DRILLING ISSUES (e.g., ARTESIAN CONDITIONS, PRESENCE OF DEBRIS) OR PROXIMITY TO A LOCATION WHERE A NX CORE WAS TAKEN
- BEDROCK ELEVATION CONTOURS (DASHED WHERE INFERRED)
- CROSS SECTION LOCATION

NOTES:

1. GROUND SURFACE ELEVATIONS RANGE FROM 10 FT TO 14.6 FT (NAVD88) ACROSS THE SITE.

30 15 0 30 60

SCALE: 1"=30'

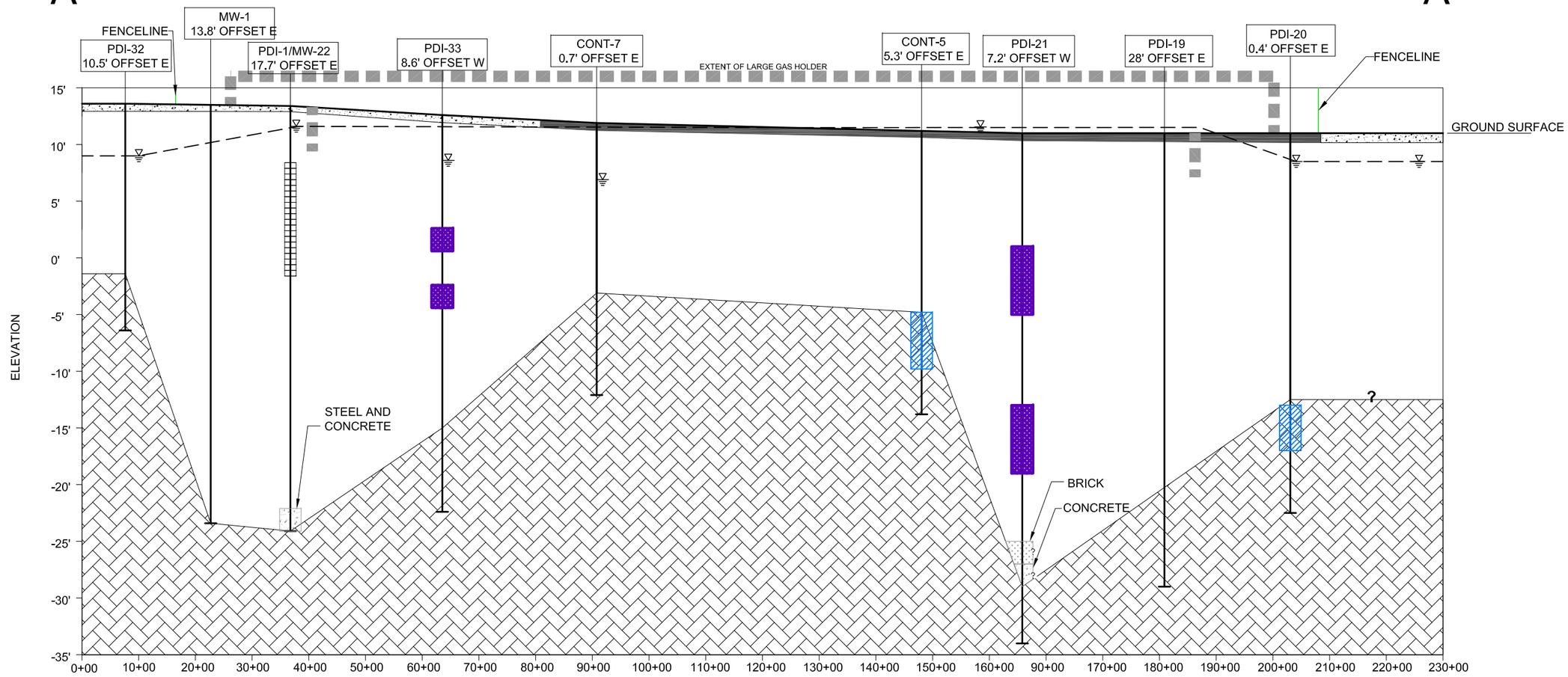
FIGURE 6

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

OU-2 PRE-DESIGN INVESTIGATION
REVISED BEDROCK ELEVATIONS

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500

FILE NAME: P:\CONED\448953 – WEST 45TH STREET RAWP – SMP\CAD\FIGURES\448953-SK006.DWG
PLOT DATE: 4/29/2021 10:37 AM PLOTTED BY: RUSSO, JILL




CONCRETE

ASPHALT

BEDROCK

VISIBLE NAPL IN SOIL SAMPLE

VISIBLE NAPL IN WASH WATER

? BEDROCK DEPTH ESTIMATED FROM FIELD OBSERVATIONS WITHOUT BEDROCK CORE

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION

MONITORING WELL SCREEN INTERVAL

SOIL BORING

FORMER HOLDER WALL LOCATION (APPROX)

20 10 0 20 40

SCALE: 1"=20'

HORIZONTAL SCALE

10 5 0 10 20

SCALE: 1"=10'

VERTICAL SCALE

NOTES:

1. ELEVATIONS ARE BASED ON NAVD88.
2. NO HATCHING BELOW GROUND SURFACE INDICATES FILL MATERIALS, WHICH INCLUDE SAND, GRAVEL, COBBLES, WEATHERED GNEISSIC SCHIST, AND DEBRIS (BRICK, CONCRETE, WOOD, METAL).
3. BEDROCK ELEVATIONS BASED ON BORING LOGS AND CONTOURS SHOWN ON FIGURE 3.
4. GROUNDWATER ELEVATIONS BASED ON CONTOURS SHOWN ON FIGURE 8.

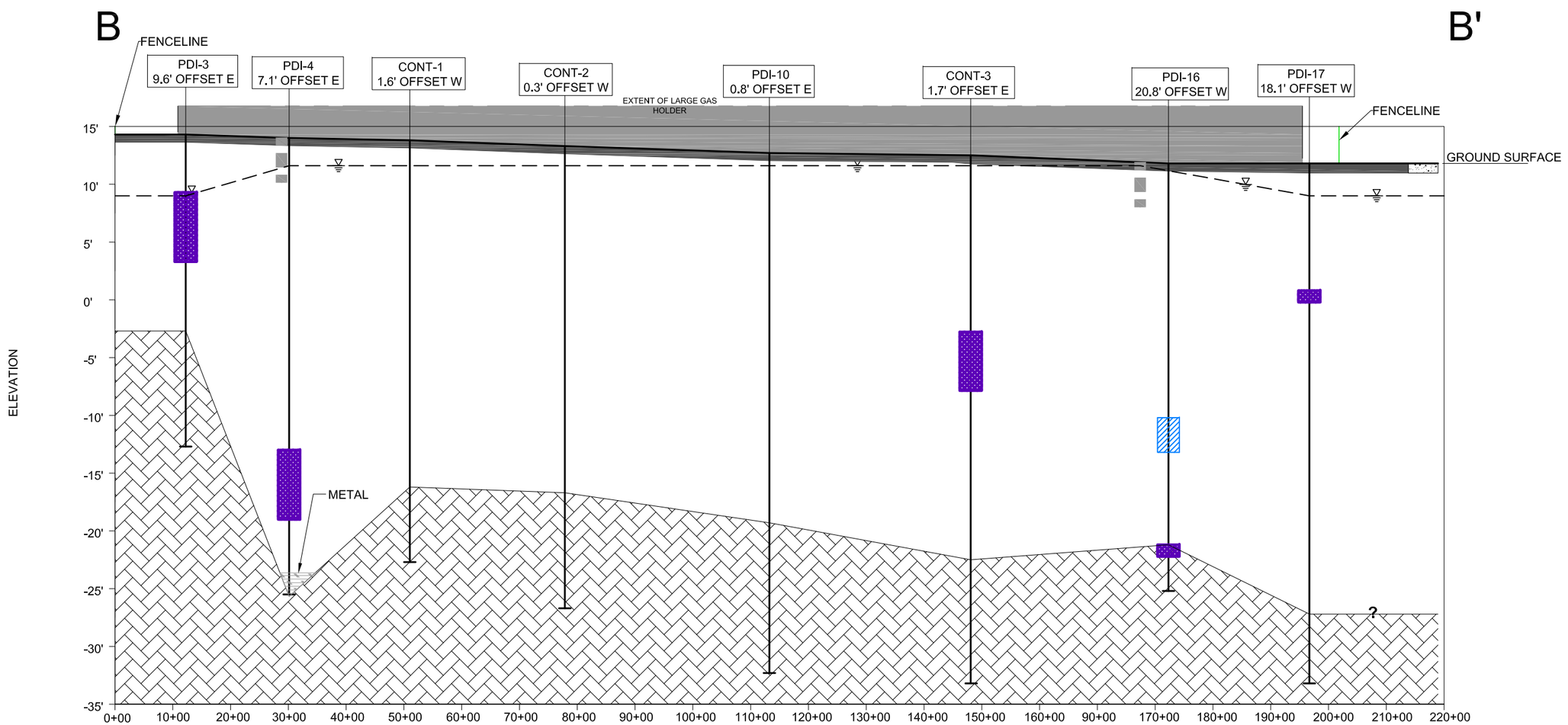
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PLOT DATE: 4/29/2021 10:49 AM PLOTTED BY: RUSSO, JILL

FIGURE 7-1

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

OU-2 PRE-DESIGN INVESTIGATION
CROSS SECTION A-A'

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500




CONCRETE

ASPHALT

BEDROCK

VISIBLE NAPL IN SOIL SAMPLE

VISIBLE NAPL IN WASH WATER

? BEDROCK DEPTH ESTIMATED FROM FIELD OBSERVATIONS WITHOUT BEDROCK CORE

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION

MONITORING WELL SCREEN INTERVAL

SOIL BORING

FORMER HOLDER WALL LOCATION (APPROX)

20 10 0 20 40

SCALE: 1"=20'

HORIZONTAL SCALE

10 5 0 10 20

SCALE: 1"=10'

VERTICAL SCALE

NOTES:

1. ELEVATIONS ARE BASED ON NAVD88.
2. NO HATCHING BELOW GROUND SURFACE INDICATES FILL MATERIALS, WHICH INCLUDE SAND, GRAVEL, COBBLES, WEATHERED GNEISSIC SCHIST, AND DEBRIS (BRICK, CONCRETE, WOOD, METAL).
3. BEDROCK ELEVATIONS BASED ON BORING LOGS AND CONTOURS SHOWN ON FIGURE 3.
4. GROUNDWATER ELEVATIONS BASED ON CONTOURS SHOWN ON FIGURE 8.

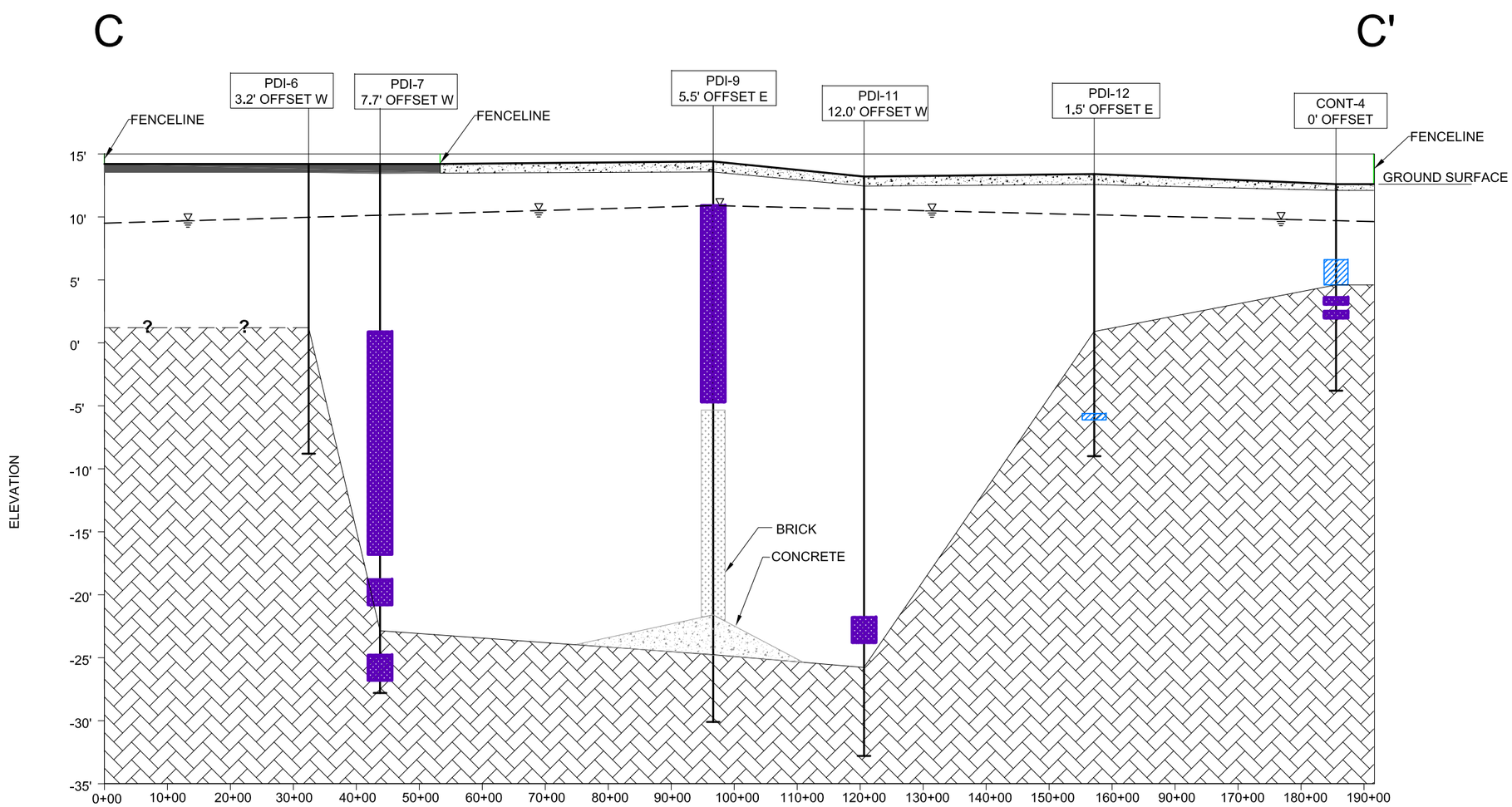
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PLOT DATE: 4/29/2021 10:51 AM PLOTTED BY: RUSSO, JILL

FIGURE 7-2

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

OU-2 PRE-DESIGN INVESTIGATION
CROSS SECTION B-B'

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500




CONCRETE

ASPHALT

BEDROCK

VISIBLE NAPL IN SOIL SAMPLE

VISIBLE NAPL IN WASH WATER

? BEDROCK DEPTH ESTIMATED FROM FIELD OBSERVATIONS WITHOUT BEDROCK CORE

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION

MONITORING WELL SCREEN INTERVAL

SOIL BORING

FORMER HOLDER WALL LOCATION (APPROX)

20 10 0 20 40

SCALE: 1"=20'

HORIZONTAL SCALE

10 5 0 10 20

SCALE: 1"=10'

VERTICAL SCALE

NOTES:

1. ELEVATIONS ARE BASED ON NAVD88.
2. NO HATCHING BELOW GROUND SURFACE INDICATES FILL MATERIALS, WHICH INCLUDE SAND, GRAVEL, COBBLES, WEATHERED GNEISSIC SCHIST, AND DEBRIS (BRICK, CONCRETE, WOOD, METAL).
3. BEDROCK ELEVATIONS BASED ON BORING LOGS AND CONTOURS SHOWN ON FIGURE 3.
4. GROUNDWATER ELEVATIONS BASED ON CONTOURS SHOWN ON FIGURE 8.

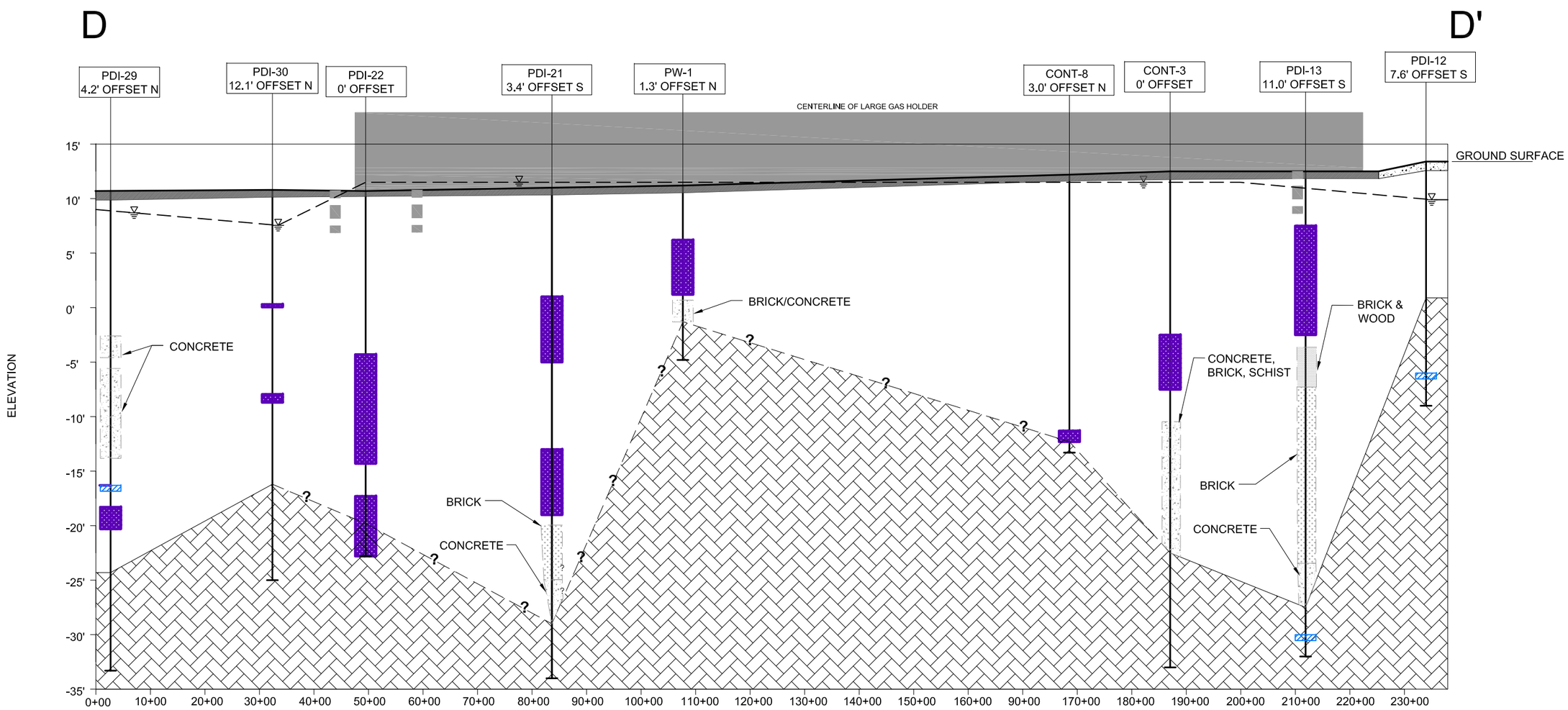
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PLOT DATE: 4/29/2021 10:54 AM PLOTTED BY: RUSSO, JILL

FIGURE 7-3

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS - OU2
NEW YORK, NEW YORK

OU-2 PRE-DESIGN INVESTIGATION
CROSS SECTION C-C'

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500




CONCRETE

ASPHALT

BEDROCK

VISIBLE NAPL IN SOIL SAMPLE

VISIBLE NAPL IN WASH WATER

? BEDROCK DEPTH ESTIMATED FROM FIELD OBSERVATIONS WITHOUT BEDROCK CORE

ESTIMATED POTENTIOMETRIC SURFACE ELEVATION

MONITORING WELL SCREEN INTERVAL

SOIL BORING

FORMER HOLDER WALL LOCATION (APPROX)

20 10 0 20 40

SCALE: 1"=20'

HORIZONTAL SCALE

10 5 0 10 20

SCALE: 1"=10'

VERTICAL SCALE

NOTES:

1. ELEVATIONS ARE BASED ON NAVD88.
2. NO HATCHING BELOW GROUND SURFACE INDICATES FILL MATERIALS, WHICH INCLUDE SAND, GRAVEL, COBBLES, WEATHERED GNEISSIC SCHIST, AND DEBRIS (BRICK, CONCRETE, WOOD, METAL).
3. BEDROCK ELEVATIONS BASED ON BORING LOGS AND CONTOURS SHOWN ON FIGURE 3.
4. GROUNDWATER ELEVATIONS BASED ON CONTOURS SHOWN ON FIGURE 8.

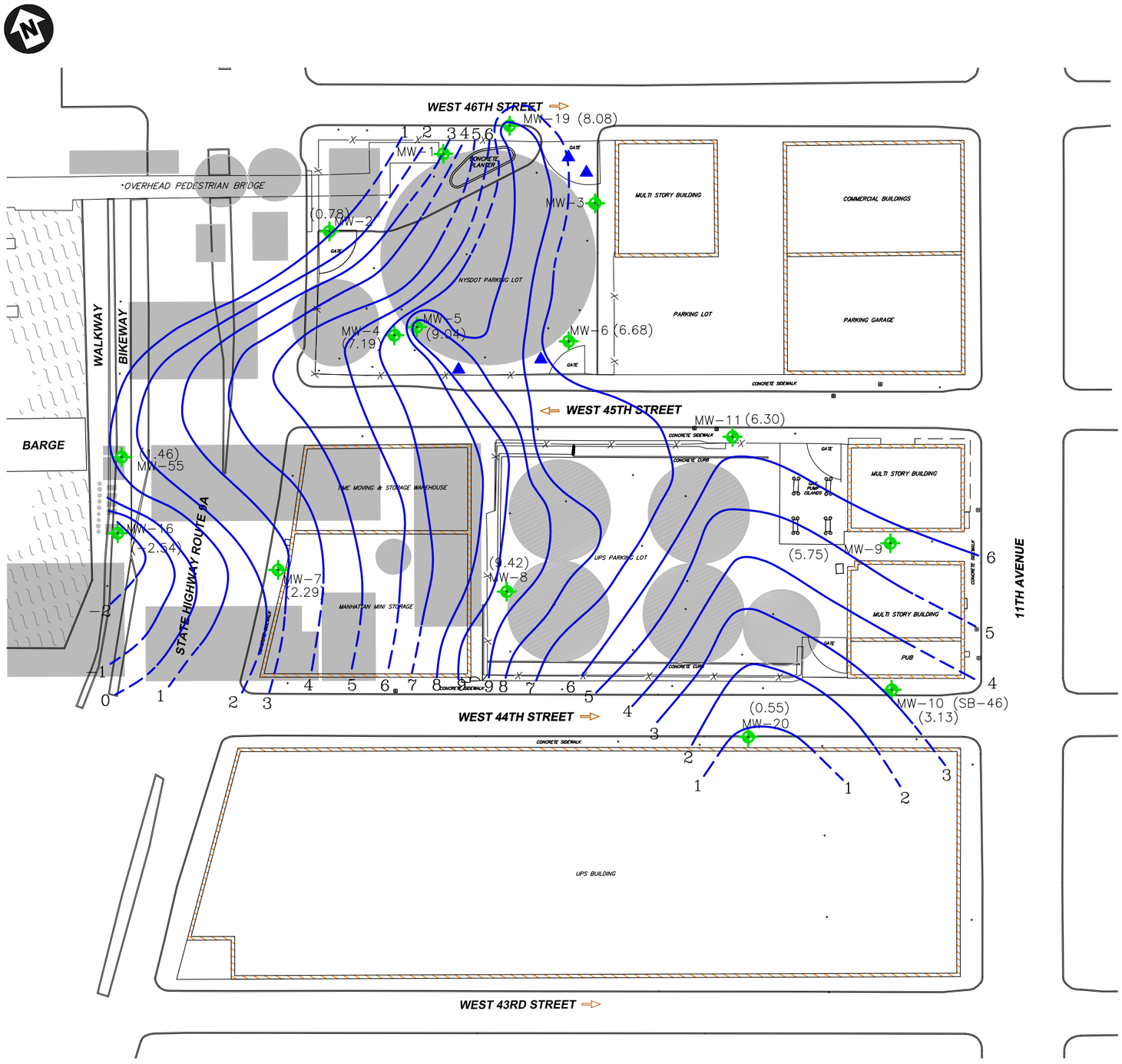
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PLOT DATE: 4/29/2021 10:55 AM PLOTTED BY: RUSSO, JILL

FIGURE 7-4

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS - OU2
NEW YORK, NEW YORK

OU-2 PRE-DESIGN INVESTIGATION
CROSS SECTION D-D'

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500




LEGEND

CURRENT FEATURES

HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)

EXISTING BUILDING

(0.39) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (NAVD 88) BASED ON 5/22/07 WATER LEVEL MEASUREMENTS.

CHAIN LINK FENCE

MW-7 MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTES:

1. MW-1 WAS DAMAGED AND NOT USEABLE.

2. MW-3 NOT ACCESSIBLE, COVERED BY CONSTRUCTION TRAILER.

100 50 0 100 200

SCALE: 1"=100'

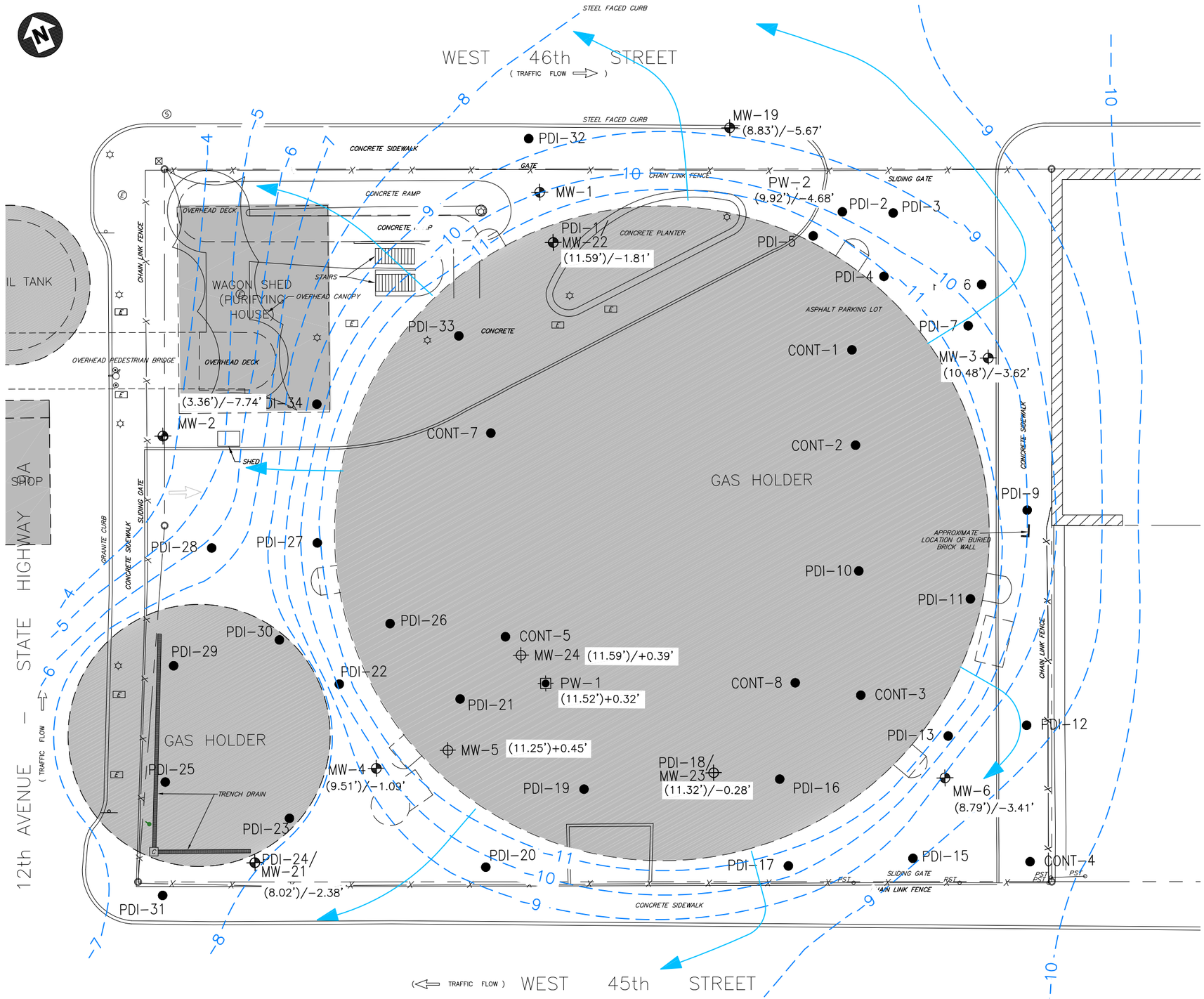
# FIGURE 8

CONSOLIDATED EDISON OF NEW YORK
WEST 45th STREET
NEW YORK, NEW YORK

## OU-1 INVESTIGATION
## 2007 GROUNDWATER CONTOURS

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

FILE NAME: P:\CONED\442145 - WEST 45TH STREET\CAD\RIR REPORT\442145RIR007.DWG
PLOT DATE: 4/29/2021 11:04 AM PLOTTED BY: RUSSO, JILL




## LEGEND:

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURES
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- ABANDONED MONITORING WELL
- ABANDONED PUMPING WELL
- EXISTING PUMPING WELL
- (11.32')/-0.28' (GROUNDWATER ELEVATION)/DEPTH RELATIVE TO GROUND SURFACE
- INFERRED GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1. GROUND SURFACE ELEVATIONS RANGE FROM 10 FT TO 14.6 FT (NAVD88) ACROSS THE SITE.
2. GROUNDWATER ELEVATIONS REPRESENT AVERAGE VALUES OBSERVED DURING THE PRE-DESIGN INVESTIGATION FROM MARCH TO JULY IN 2012.

30 15 0 30 60

SCALE: 1"=30'

# FIGURE 9

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS - OU2
NEW YORK, NEW YORK

## OU-2 PRE-DESIGN INVESTIGATION 2012 GROUNDWATER ELEVATIONS

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500

FILE NAME: P:\CONED\450089 - W45TH OU-2 AAR 2016\ENGR\AAR-FIGURES\450089-AAR-SK005.DWG
PLOT DATE: 4/29/2021 10:59 AM PLOTTED BY: RUSSO, JILL

WEST 46th STREET
( TRAFFIC FLOW ⇒ )

CONCRETE SIDEWALK
STEEL FACED CURB
STEEL FACED CURB
CONCRETE SIDEWALK
GATE
CHAIN LINK FENCE
SLIDING GATE
CONCRETE RAMP
CONCRETE RAMP
OVERHEAD DECK
CHAIN LINK FENCE
STAIRS
OVERHEAD CANOPY
GAS OIL TANK
WAGON SHED (PUMPING HOUSE)
CONCRETE PLANTER
ASPHALT PARKING LOT
CONCRETE
OVERHEAD PEDESTRIAN BRIDGE
OVERHEAD DECK
SHED
GAS HOLDER
GAS HOLDER
APPROXIMATE LOCATION OF BURIED BRICK WALL
CONCRETE SIDEWALK
SLIDING GATE
CHAIN LINK FENCE
GRANITE CURB
CONCRETE SIDEWALK
SLIDING GATE
CHAIN LINK FENCE
TRENCH DRAIN
CONCRETE SIDEWALK
SLIDING GATE
CHAIN LINK FENCE
CONCRETE SIDEWALK
TAR DRIP

MW-19
PDI-32
MW-1
SG-1
PW-2
SG-2
PDI-2
PDI-3
SB-3
PDI-1 / MW-22
PDI-5
TP-1
TP-2
SB-7
SB-6
PDI-4
PDI-6
SB-5
PDI-33
PDI-7
CONT-1
MW-3
PDI-34
SG-3
MW-2
CONT-7
TP-10
CONT-2
SB-10
PDI-9
SB-9
SB-12
PDI-10
PDI-28
PDI-27
SB-11
TP-14
TP-8
PDI-11
TP-3, 4
PUR-1
PDI-26
PDI-30
CONT-5
MW-24
PDI-29
SB-16
PDI-22
PW-1
CONT-8
SB-15
CONT-3
SB-13
SB-8
PDI-21
PDI-12
PDI-13
SB-17
MW-5
PDI-18 / MW-23
TP-5
MW-4
PDI-25
PDI-16
MW-6
PDI-19
PDI-23
SB-18
SB-19
TP-6
SB-20
SB-21
PDI-15
CONT-4
PDI-24
MW-21
TP-13
PDI-20
PDI-17
SB-22
TP-11
SB-23
SB-24
TP-12
PDI-31

12th AVENUE – STATE HIGHWAY 9A ( TRAFFIC FLOW ⇒ )

( ⇐ TRAFFIC FLOW ) WEST 45th STREET

## LEGEND:

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURES
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- ABANDONED MONITORING WELL
- ABANDONED PUMPING WELL
- PREVIOUS SOIL GAS SAMPLE LOCATION
- PREVIOUS GRAB SOIL SAMPLE
- EXISTING PUMPING WELL
- TEST PIT LOCATION

30 15 0 30 60

SCALE: 1"=30'

# FIGURE 10

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

## OU-2 SITE SAMPLE LOCATIONS

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500

FILE NAME: P:\CONED\450089 – W45TH OU-2 AAR 2016\ENGR\AAR-FIGURES\450089-AAR-SK002.DWG
PLOT DATE: 5/14/2021 8:15 AM PLOTTED BY: RUSSO, JILL

| MW-19 | 9-11' | 13-15' |
|---|---|---|
| BENZENE | 12 | 2 |
| ETHYL BENZENE | 46 | 3.7 |
| ISOPROPYLBENZENE | 1.8 | 0.2 |
| STYRENE | 0.25 | 0.094 |
| TOLUENE | 2.1 | 2.1 |
| m/p-XYLENES | 51 | 4.6 |
| o-XYLENE | 22 | 2 |
| ***TOTAL VOCs*** | ***135.15*** | ***14.694*** |

| SB-30 | 7-9' | 32-32.5' | 32.5' |
|---|---|---|---|
| ACETONE | ND | ND | 0.017 |
| BENZENE | ND | 650 | 0.69 |
| BROMODICHLOROMETHANE | ND | 1.7 | ND |
| 2-BUTANONE | ND | 7 | ND |
| cis-1,3-DICHLOROPROPENE | ND | 27 | ND |
| CYCLOHEXANE | ND | 12 | ND |
| DIBROMODICHLOROMETHANE | ND | 2.8 | ND |
| 1,1-DICHLOROETHENE | ND | 1.8 | ND |
| 1,2-DICHLOROETHANE | ND | 18 | ND |
| ETHYL BENZENE | 0.007 | 1200 | 2.2 |
| 2-HEXANONE | ND | 45 | ND |
| ISOPROPYLBENZENE | ND | 100 | ND |
| 4-METHYL-2-PENTANONE | ND | 27 | ND |
| METHYLCYCLOHEXANE | ND | 51 | ND |
| METHYLENE CHLORIDE | 0.01 | ND | ND |
| STYRENE | ND | 190 | 0.93 |
| TOLUENE | ND | 1400 | 2.5 |
| 1,1,2,2-TETRACHLOROETHANE | ND | 5.3 | ND |
| 1,1,2-TRICHLOROETHANE | ND | 4.4 | ND |
| m/p-XYLENES | ND | 1400 | 4.6 |
| o-XYLENE | 0.0066 | 580 | 3.9 |
| ***TOTAL VOCs*** | ***0.0236*** | ***5770.7*** | ***14.837*** |

| SB-38 | 5-7' | 27-29' | 29' |
|---|---|---|---|
| BENZENE | 0.044 | 0.032 | 0.2 |
| CARBON DISULFIDE | 0.0046 | 0.0064 | 0.008 |
| ETHYL BENZENE | 0.047 | 0.02 | 0.055 |
| METHYLENE CHLORIDE | 0.013 | ND | ND |
| STYRENE | 0.0041 | ND | 0.011 |
| TOLUENE | 0.079 | 0.046 | 0.21 |
| m/p-XYLENES | 0.063 | 0.023 | 0.081 |
| o-XYLENE | 0.025 | 0.01 | 0.031 |
| ***TOTAL VOCs*** | ***0.2797*** | ***0.1374*** | ***0.596*** |

| SB-29 | 7-9' | 11-13' | 13-15' |
|---|---|---|---|
| BENZENE | ND | 0.19 | ND |
| CARBON DISULFIDE | ND | 0.0032 | ND |
| CYCLOHEXANE | ND | 0.0033 | ND |
| ETHYL BENZENE | ND | 0.016 | ND |
| ISOPROPYLBENZENE | 0.00064 | 0.011 | ND |
| METHYLCYCLOHEXANE | ND | 0.011 | ND |
| METHYLENE CHLORIDE | 0.0024 | ND | ND |
| STYRENE | ND | 0.011 | ND |
| TOLUENE | ND | 0.16 | ND |
| m/p-XYLENES | ND | 0.06 | ND |
| o-XYLENE | 0.002 | 0.028 | ND |
| ***TOTAL VOCs*** | ***0.00504*** | ***0.4935*** | ***ND*** |

| MW/SB-17 | 5-7' |
|---|---|
| ISOPROPYLBENZENE | 0.0012 |
| METHYLENE CHLORIDE | 0.016 |
| NAPHTHALENE | 0.0067 |
| n-BUTYLBENZENE | 0.0044 |
| SEC-BUTYLBENZENE | 0.0017 |
| 1,2,4-TRIMETHYLBENZENE | 0.015 |
| 1,3,5-TRIMETHYLBENZENE | 0.0054 |
| ***TOTAL VOCs*** | ***0.0504*** |

| MW-11 | 3.5-4' | 8-10' | 18-20' |
|---|---|---|---|
| ACETONE | 0.64 | ND | 0.0029 |
| BENZENE | ND | 0.003 | ND |
| ISOPROPYLBENZENE | ND | 0.0014 | ND |
| METHYLENE CHLORIDE | R | 0.0018 | 0.0013 |
| NAPHTHALENE | ND | 0.028 | 0.0024 |
| tert-BUTYLBENZENE | ND | 0.0012 | ND |
| 1,2,4-TRIMETHYLBENZENE | ND | 0.0015 | ND |
| ***TOTAL VOCs*** | ***0.64*** | ***0.0369*** | ***0.0066*** |

| SB-54 | 7-9' | 9-11' |
|---|---|---|
| ACETONE | 0.066 | 0.036 |
| ***TOTAL VOCs*** | ***0.066*** | ***0.036*** |

| MW/SB-15 | 7-9' |
|---|---|
| ACETONE | 0.034 |
| ***TOTAL VOCs*** | ***0.034*** |

| SB-26 | 5-7' |
|---|---|
| 2-BUTANONE | 0.02 |
| ***TOTAL VOCs*** | ***0.02*** |

| SB-56 | 7-9' |
|---|---|
| ACETONE | 0.066 |
| ***TOTAL VOCs*** | ***0.066*** |

| MW-8 | 9-11' | 31-33' |
|---|---|---|
| ACETONE | 4.4 | 3.8 |
| BENZENE | ND | 0.18 |
| 2-BUTANONE | 1.6 | 1.5 |
| ETHYL BENZENE | 0.083 | 0.95 |
| METHYLCYCLOHEXANE | ND | 0.19 |
| TETRACHLOROETHENE | 0.25 | 0.23 |
| TOLUENE | ND | 0.28 |
| m/p-XYLENES | 0.18 | 0.91 |
| o-XYLENE | 0.12 | 0.41 |
| ***TOTAL VOCs*** | ***6.633*** | ***8.45*** |

| MW-55 | 7-9' | 11-15' |
|---|---|---|
| ACETONE | ND | 0.035 |
| ***TOTAL VOCs*** | ***ND*** | ***0.035*** |

| MW-16 | 15-17' | 17-19' |
|---|---|---|
| ACETONE | 0.076 | 0.065 |
| BENZENE | ND | 0.0074 |
| CARBON DISULFIDE | 0.0069 | ND |
| CYCLOHEXANE | ND | 0.011 |
| ETHYL BENZENE | 0.021 | 0.019 |
| ISOPROPYLBENZENE | 0.0094 | ND |
| METHYLCYCLOHEXANE | ND | 0.063 |
| m/p-XYLENES | 0.0078 | 0.0073 |
| o-XYLENE | 0.012 | 0.0088 |
| ***TOTAL VOCs*** | ***0.1331*** | ***0.1815*** |

| SB-57 | 7-9' | 11-13' |
|---|---|---|
| CARBON DISULFIDE | 0.023 | 0.023 |
| ***TOTAL VOCs*** | ***0.023*** | ***0.023*** |

| MW-7 | 9-11' |
|---|---|
| ACETONE | 44 |
| BENZENE | 1.4 |
| 2-BUTANONE | 16 |
| ETHYL BENZENE | 88 |
| ISOPROPYLBENZENE | 17 |
| TOLUENE | 9.5 |
| m/p-XYLENES | 47 |
| o-XYLENE | 51 |
| ***TOTAL VOCs*** | ***273.9*** |

| SB-36A | 5-5.5' |
|---|---|
| ACETONE | 0.04 |
| BENZENE | 0.012 |
| ETHYL BENZENE | 0.0085 |
| STYRENE | 0.016 |
| TOLUENE | 0.024 |
| m/p-XYLENES | 0.068 |
| o-XYLENE | 0.074 |
| ***TOTAL VOCs*** | ***0.2425*** |

| SB-31 | 11-13' | 15-17' |
|---|---|---|
| BENZENE | 0.026 | ND |
| ETHYL BENZENE | 0.016 | ND |
| TOLUENE | 0.034 | ND |
| m/p-XYLENES | 0.03 | ND |
| o-XYLENE | 0.013 | ND |
| ***TOTAL VOCs*** | ***0.119*** | ***ND*** |

| SB-37 | 23-25' | 32-34' |
|---|---|---|
| BENZENE | 4.5 | 0.0037 |
| CARBON DISULFIDE | 0.014 | 0.006 |
| ETHYL BENZENE | 18 | ND |
| STYRENE | 0.088 | ND |
| TOLUENE | 8.2 | ND |
| m/p-XYLENES | 24 | ND |
| o-XYLENE | 11 | ND |
| ***TOTAL VOCs*** | ***65.802*** | ***0.0097*** |

| SB-43 | 1-3' | 7-9' |
|---|---|---|
| ACETONE | 0.044 | 0.05 |
| BENZENE | 0.016 | 0.16 |
| CARBON DISULFIDE | ND | 0.015 |
| ETHYL BENZENE | 0.23 | 2.5 |
| ISOPROPYLBENZENE | 0.065 | 0.74 |
| STYRENE | 0.012 | 0.047 |
| TOLUENE | 0.088 | 1 |
| m/p-XYLENES | 0.32 | 2.9 |
| o-XYLENE | 0.31 | 2.4 |
| ***TOTAL VOCs*** | ***1.085*** | ***9.812*** |

| SB-39 | 5-7' | 31-33' |
|---|---|---|
| ACETONE | ND | 0.32 |
| BENZENE | 0.015 | 330 |
| 2-BUTANONE | ND | 0.84 |
| ETHYL BENZENE | 0.031 | 960 |
| STYRENE | ND | 3.9 |
| TOLUENE | 0.039 | 1000 |
| m/p-XYLENES | 0.037 | 970 |
| o-XYLENE | 0.017 | 400 |
| ***TOTAL VOCs*** | ***0.139*** | ***3665.06*** |

| SB-50 | 5-7' | 9-11' |
|---|---|---|
| ACETONE | 0.024 | 0.024 |
| 2-BUTANE | 0.0049 | ND |
| CARBON DISULFIDE | ND | 0.0013 |
| ***TOTAL VOCs*** | ***0.0289*** | ***0.0037*** |

| SB-44 | 7-9' |
|---|---|
| ACETONE | 0.14 |
| BENZENE | 0.24 |
| 2-BUTANONE | 0.075 |
| ETHYL BENZENE | 0.75 |
| ISOPROPYLBENZENE | 0.18 |
| METHYLCYCLOHEXANE | 0.097 |
| STYRENE | 0.029 |
| TOLUENE | 0.031 |
| m/p-XYLENES | 0.47 |
| o-XYLENE | 0.4 |
| ***TOTAL VOCs*** | ***2.412*** |

| MW-20 | 15-17' | 21-23' | 23-25' |
|---|---|---|---|
| BENZENE | 0.016 | 0.98 | 0.23 |
| ETHYL BENZENE | 0.08 | 0.15 | 0.77 |
| ISOPROPYLBENZENE | 0.016 | 0.0058 | 0.11 |
| STYRENE | ND | 0.0042 | ND |
| TOLUENE | ND | 0.53 | 0.13 |
| m/p-XYLENES | 0.027 | 0.24 | 0.62 |
| o-XYLENE | 0.33 | 0.13 | 0.36 |
| ***TOTAL VOCs*** | ***0.172*** | ***2.04*** | ***2.22*** |

| TP-3 | 5-10' | 10' |
|---|---|---|
| BENZENE | ND | 0.0028 |
| ***TOTAL VOCs*** | ***ND*** | ***0.0028*** |

| SB-49 | 7-9' | 17-19' |
|---|---|---|
| METHYL tert-butyl ETHER | ND | 0.0064 |
| METHYLENE CHLORIDE | 0.0019 | ND |
| tert-butyl ALCOHOL | 0.011 | R |
| ***TOTAL VOCs*** | ***0.129*** | ***0.0064*** |

| MW-12 | 8-10' |
|---|---|
| METHYLENE CHLORIDE | 0.0074 |
| ***TOTAL VOCs*** | ***0.0074*** |

| SB-41 | 9-11' | 19-21' |
|---|---|---|
| CARBON DISULFIDE | ND | 0.014 |
| 2-HEXANONE | ND | 0.18 |
| ***TOTAL VOCs*** | ***ND*** | ***0.194*** |

| SB-32 | 11-13' |
|---|---|
| BENZENE | 0.14 |
| CARBON DISULFIDE | 0.023 |
| ETHYL BENZENE | 0.012 |
| METHYLENE CHLORIDE | 0.015 |
| TOLUENE | 0.034 |
| m/p-XYLENES | 0.02 |
| o-XYLENE | 0.0087 |
| ***TOTAL VOCs*** | ***0.2527*** |

| MW-9 | 21-23' | 25-27' |
|---|---|---|
| BENZENE | 2.6 | 0.019 |
| ETHYL BENZENE | 43 | 0.013 |
| TOLUENE | 6.8 | ND |
| m/p-XYLENES | 30 | 0.0098 |
| o-XYLENE | 17 | 0.0071 |
| ***TOTAL VOCs*** | ***99.4*** | ***0.0489*** |

| SB-42 | 17-19' | 25-27' |
|---|---|---|
| CARBON DISULFIDE | ND | 0.0043 |
| METHYL tert-butyl ETHER | ND | 0.0033 |
| ***TOTAL VOCs*** | ***ND*** | ***0.0076*** |

| SB-33 | 17-19' | DUP. 17-19' | 27-28' |
|---|---|---|---|
| ACETONE | 4.2 | 0.65 | ND |
| BENZENE | 22 | 13 | ND |
| 2-BUTANONE | 0.79 | 0.098 | ND |
| CARBON DISULFIDE | ND | 0.021 | ND |
| ETHYL BENZENE | 49 | 13 | ND |
| STYRENE | 0.023 | 0.025 | ND |
| TETRACHLOROETHENE | ND | ND | 0.033 |
| TOLUENE | 6.1 | 1.4 | ND |
| m/p-XYLENES | 47 | 16 | ND |
| o-XYLENE | 26 | 8.1 | ND |
| ***TOTAL VOCs*** | ***157.113*** | ***52.294*** | ***0.033*** |

| SB-40 | 0.5-1.0' | 9-11' | 23-25' |
|---|---|---|---|
| ACETONE | 0.032 | ND | ND |
| BENZENE | 0.0044 | 0.0066 | 14 |
| CARBON DISULFIDE | ND | ND | 0.0027 |
| ETHYL BENZENE | 0.084 | 0.069 | 58 |
| METHYLENE CHLORIDE | 0.13 | ND | ND |
| STYRENE | ND | ND | 0.021 |
| TOLUENE | 0.013 | 0.015 | 4.2 |
| m/p-XYLENES | 0.095 | 0.036 | 40 |
| o-XYLENE | 0.22 | 0.03 | 22 |
| ***TOTAL VOCs*** | ***0.5784*** | ***0.1566*** | ***138.22*** |

| SB-46(MW-10) | 11-13' | 13-15' |
|---|---|---|
| ACETONE | ND | 0.15 |
| BENZENE | ND | 0.2 |
| 2-BUTANONE | ND | 0.045 |
| CARBON DISULFIDE | ND | 0.0098 |
| ETHYL BENZENE | ND | 0.011 |
| ISOPROPYLBENZENE | ND | 0.033 |
| TOLUENE | ND | 0.0038 |
| m/p-XYLENES | ND | 0.016 |
| o-XYLENE | ND | 0.012 |
| ***TOTAL VOCs*** | ***ND*** | ***0.4806*** |

| SB-51 | 12-14' | 16-18' |
|---|---|---|
| METHYL CHLORIDE | ND | 0.0013 |
| tert-butyl-ALCOHOL | R | 0.0099 |
| ***TOTAL VOCs*** | ***ND*** | ***0.0112*** |

| SB-48 | 20-21' | 23' |
|---|---|---|
| BENZENE | 550 | ND |
| ETHYL BENZENE | 310 | ND |
| ISOPROPYLBENZENE | 6.7 | ND |
| STYRENE | 670 | 0.18 |
| TOLUENE | 1100 | ND |
| m/p-XYLENES | 870 | 0.17 |
| o-XYLENE | 400 | 0.1 |
| ***TOTAL VOCs*** | ***3906.7*** | ***0.45*** |

| SB-45 | 5-7' | 19-21' |
|---|---|---|
| BENZENE | 0.32 | 0.75 |
| 2-BUTANONE | 0.035 | ND |
| ETHYL BENZENE | 0.027 | 26 |
| ISOPROPYLBENZENE | ND | 4.3 |
| METHYLCYCLOHEXANE | ND | 0.18 |
| STYRENE | 0.0077 | ND |
| TOLUENE | 0.056 | 0.68 |
| m/p-XYLENES | 0.017 | 21 |
| o-XYLENE | 0.0067 | 11 |
| ***TOTAL VOCs*** | ***0.4694*** | ***63.91*** |

| SB-52 | 12-14' | 14-16' |
|---|---|---|
| BENZENE | 0.021 | ND |
| ETHYL BENZENE | 0.058 | 0.42 |
| ISOPROPYLBENZENE | ND | 0.041 |
| m/p-XYLENES | 0.027 | 0.3 |
| o-XYLENE | 0.026 | 0.2 |
| ***TOTAL VOCs*** | ***0.132*** | ***0.961*** |

SEE FIGURE 10 FOR OU-2 SVOC DATA

WEST 46TH STREET

WEST 45TH STREET

WEST 44TH STREET

WEST 43RD STREET

11TH AVENUE

STATE HIGHWAY ROUTE 9A

OVERHEAD PEDESTRIAN BRIDGE

WALKWAY

BIKEWAY

CONCRETE PLANTER

NYSDOT PARKING LOT

MULTI STORY BUILDING

COMMERCIAL BUILDINGS

PARKING LOT

PARKING GARAGE

CONCRETE SIDEWALK

TIME MOVING & STORAGE WAREHOUSE

UPS PARKING LOT

MANHATTAN MINI STORAGE

CONCRETE CURB

GAS PUMP ISLANDS

PUB

UPS BUILDING

GATE

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 (SB-46) MW-11 MW-12 MW-13 (NOTE 7) MW-14 MW-15 MW-16 MW-17 MW-18 MW-19 MW-20 MW-55

SB-1A SB-2A SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10 SB-11 SB-12 SB-13 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-24 SB-25 (NOTE 7) SB-26 SB-27 SB-28 (NOTE 7) SB-29 SB-30 SB-31 SB-32 SB-33 SB-34 (NOTE 7) SB-35 SB-36 SB-36A SB-37 SB-38 SB-39 SB-40 SB-41 SB-42 SB-43 SB-44 SB-45 SB-46 SB-47 SB-48 SB-49 SB-50 SB-51 SB-52 SB-53 SB-54 SB-56 SB-57 SB-58

SG-1A SG-2A SG-2 SG-3 SG-3A SG-4

TP 1 TP 2 TP 3

LEGEND

CURRENT FEATURES

HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)

EXISTING BUILDING

CHAIN LINK FENCE

SG-2 SOIL GAS LOCATION

SB-28 SOIL BORING

MW-7 MONITORING WELL

TP 1 TEST PIT LOCATION

SOIL CLEANUP OBJECTIVE(S) EXCEEDED

NOTES:

1. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
2. GREY SHADED VALUES EXCEED 6 NYCRR PART 375 UNRESTRICTED SOIL CLEANUP OBJECTIVES.
3. ORANGE SHADED VALUES EXCEED BOTH THE 6 NYCRR PART 375 UNRESTRICTED AND RESTRICTED COMMERCIAL SOIL CLEANUP OBJECTIVES.
4. ND = NOT DETECTED
5. R = REJECTED VALUE
6. VOCs WERE NOT DETECTED IN SUBSURFACE SOIL SAMPLES FROM MW-14, MW-18, SB-27, SB-47, SB-53, SB-58 AND TP-2.
7. SOIL SAMPLES WERE NOT ANALYZED FOR VOCs AT MW-13, SB-25, SB-28 AND SB-34 DUE TO POOR RECOVERY.
8. ANALYTICAL RESULTS ARE NOT SHOWN FOR LOCATIONS AT OU-2.

80 40 0 80 160

SCALE: 1"=80'

# FIGURE 11

**CONSOLIDATED EDISON**
**FORMER WEST 45th STREET GAS WORKS (OU-1)**
**NEW YORK, NY**

## SUMMARY OF OU-1 VOCs DETECTED IN SUBSURFACE SOIL

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\446672 - W45TH OU2\CAD\10-28-14\446672-SK002-FIG 9.DWG
PLOT DATE: 5/14/2021 7:46 AM PLOTTED BY: RUSSO, JILL

| MW/SB-18 | 5-7' | DUP 5-7'' |
|---|---|---|
| FLUORANTHENE | ND | 0.11 |
| PHENANTHRENE | ND | 0.21 |
| PYRENE | ND | 0.13 |
| **TOTAL SVOCs** | **ND** | **0.45** |

| MW/SB-17 | 5-7' |
|---|---|
| ANTHRACENE | 0.029 |
| BENZO(a)ANTHRACENE | 0.014 |
| CHRYSENE | 0.026 |
| FLUORANTHENE | 0.035 |
| FLURENE | 0.064 |
| 2-METHYLNAPHTHALENE | 0.36 |
| NAPHTHALENE | 0.033 |
| INDENO(1,2,3-cd)PYRENE | ND |
| PHENANTHRENE | 0.18 |
| PYRENE | 0.051 |
| **TOTAL SVOCs** | **0.612** |

| MW-19 | 9-11' | 13-15' |
|---|---|---|
| 1,1-BIPHENYL | 0.43 | 0.083 |
| CARBAZOLE | 0.14 | ND |
| DIBENZOFURAN | 0.26 | ND |
| DI-N-BUTYLPHTHALATE | ND | 0.064 |
| ACENAPHTHENE | 0.76 | 0.18 |
| ACENAPHTHYLENE | 0.66 | 0.12 |
| ANTHRACENE | 1.1 | 0.25 |
| BENZO(a)ANTHRACENE | 1.3 | 0.25 |
| BENZO(a)PYRENE | 0.95 | 0.19 |
| BENZO(b)FLUORANTHENE | 0.76 | 0.16 |
| BENZO(g,h,i)PERYLENE | 0.27 | ND |
| BENZO(k)FLUORANTHENE | 0.25 | ND |
| CHRYSENE | 1.1 | 0.24 |
| FLUORANTHENE | 2.6 | 0.59 |
| FLURENE | 2.9 | 0.66 |
| INDENO(1,2,3-cd)PYRENE | 0.2 | ND |
| 2-METHYLNAPHTHALENE | 1.7 | 0.46 |
| NAPHTHALENE | 5.6 | 1.4 |
| PHENANTHRENE | 9.6 | 1.7 |
| PYRENE | 3.9 | 0.81 |
| **TOTAL SVOCs** | **34.05** | **7.074** |

| TP-2 | 3-7' | 7' |
|---|---|---|
| DIBENZOFURAN | ND | 0.059 |
| ACENAPHTHENE | ND | 0.069 |
| ACENAPHTHYLENE | 0.06 | 0.083 |
| ANTHRACENE | 0.13 | 0.23 |
| BENZO(a)ANTHRACENE | 0.58 | 0.95 |
| BENZO(a)PYRENE | 0.63 | 0.96 |
| BENZO(b)FLUORANTHENE | 0.95 | 1.3 |
| BENZO(g,h,i)PERYLENE | 0.14 | 0.17 |
| BENZO(k)FLUORANTHENE | 0.34 | 0.57 |
| CHRYSENE | 0.6 | 0.98 |
| FLUORANTHENE | 1.2 | 1.6 |
| FLURENE | ND | 0.077 |
| INDENO(1,2,3-cd)PYRENE | 0.15 | 0.24 |
| 2-METHYLNAPHTHALENE | ND | 0.082 |
| NAPHTHALENE | ND | 0.2 |
| PHENANTHRENE | 0.56 | 1.1 |
| PYRENE | 1.1 | 1.7 |
| **TOTAL SVOCs** | **6.44** | **10.37** |

| SB-29 | 11-13' | 13-15' |
|---|---|---|
| BENZO(b)FLUORANTHENE | 0.06 | ND |
| FLUORANTHENE | 0.092 | ND |
| 2-METHYLNAPHTHALENE | 0.4 | ND |
| NAPHTHALENE | 0.34 | ND |
| PHENANTHRENE | 0.12 | ND |
| PYRENE | 0.1 | ND |
| **TOTAL SVOCs** | **1.112** | **ND** |

| MW-11 | 3.5-4' | 8-10' | 18-20' |
|---|---|---|---|
| BIS(2-ETHYLHEXYL)PHTHALATE | 0.022 | 0.25 | 0.062 |
| CARBAZOLE | ND | 0.084 | ND |
| DI-N-BUTYLPHTHALATE | ND | 0.11 | 0.12 |
| DI-N-OCTYL PHTHALATE | 0.016 | ND | ND |
| ACENAPHTHYLENE | 0.077 | ND | ND |
| ANTHRACENE | 0.025 | 0.25 | ND |
| BENZO(a)ANTHRACENE | 0.11 | 0.14 | ND |
| BENZO(a)PYRENE | 0.15 | 0.13 | ND |
| BENZO(b)FLUORANTHENE | 0.13 | 0.12 | ND |
| BENZO(g,h,i)PERYLENE | 0.15 | 0.029 | ND |
| BENZO(k)FLUORANTHENE | 0.1 | 0.11 | ND |
| CHRYSENE | 0.13 | 0.19 | ND |
| DIBENZ(a,h)ANTHRACENE | 0.032 | ND | ND |
| FLUORANTHENE | 0.16 | 0.32 | ND |
| INDENO(1,2,3-cd)PYRENE | 0.11 | 0.026 | ND |
| 2-METHYLNAPHTHALENE | ND | 4.9 | ND |
| NAPHTHALENE | 0.031 | 1 | ND |
| PHENANTHRENE | 0.073 | 1.5 | ND |
| PYRENE | 0.15 | 0.31 | ND |
| **TOTAL SVOCs** | **1.466** | **9.469** | **0.182** |

| SB-30 | 32-32.5' |
|---|---|
| 1,1-BIPHENYL | 23 |
| ACENAPHTHENE | 4.2 |
| ACENAPHTHYLENE | 5.9 |
| ANTHRACENE | 3.7 |
| BENZO(a)ANTHRACENE | 6 |
| BENZO(a)PYRENE | 2.6 |
| BENZO(b)FLUORANTHENE | 3.5 |
| CHRYSENE | 8.6 |
| FLUORANTHENE | 12 |
| FLURENE | 8.5 |
| 2-METHYLNAPHTHALENE | 230 |
| NAPHTHALENE | 1600 |
| PHENANTHRENE | 35 |
| PYRENE | 18 |
| **TOTAL SVOCs** | **1961** |

| SB-26 | 5-7' |
|---|---|
| BENZO(a)ANTHRACENE | 0.098 |
| BENZO(a)PYRENE | 0.074 |
| BENZO(b)FLUORANTHENE | 0.094 |
| CHRYSENE | 0.11 |
| FLUORANTHENE | 0.16 |
| PHENANTHRENE | 0.1 |
| PYRENE | 0.22 |
| **TOTAL SVOCs** | **0.856** |

| SB-27 | 15-17' |
|---|---|
| BENZO(a)ANTHRACENE | 0.42 |
| BENZO(b)FLUORANTHENE | 0.49 |
| FLUORANTHENE | 1 |
| PHENANTHRENE | 0.75 |
| PYRENE | 0.83 |
| **TOTAL SVOCs** | **3.49** |

| MW-55 | 7-9' |
|---|---|
| BIS(2-ETHYLHEXYL)PHTHALATE | 0.22 |
| ACENAPHTHENE | 0.11 |
| ANTHRACENE | 0.13 |
| BENZO(a)ANTHRACENE | 0.59 |
| BENZO(a)PYRENE | 0.56 |
| BENZO(b)FLUORANTHENE | 0.68 |
| BENZO(g,h,i)PERYLENE | 0.22 |
| BENZO(k)FLUORANTHENE | 0.21 |
| CHRYSENE | 0.63 |
| FLUORANTHENE | 1 |
| INDENO(1,2,3-cd)PYRENE | 0.19 |
| PHENANTHRENE | 0.45 |
| PYRENE | 1.1 |
| **TOTAL SVOCs** | **6.09** |

| MW-8 | 9-11' |
|---|---|
| 1,1-BIPHENYL | 0.7 |
| ACENAPHTHENE | 0.41 |
| FLUORENE | 0.53 |
| 2-METHYLNAPHTHALENE | 6.6 |
| NAPHTHALENE | 2.1 |
| PHENANTHRENE | 1.4 |
| **TOTAL SVOCs** | **11.74** |

| SB-39 | 31-33' |
|---|---|
| 1,1-BIPHENYL | 4 |
| DIBENZOFURAN | 0.55 |
| 3+4-METHYLPHENOLS | 6.8 |
| ACENAPHTHENE | 1.1 |
| ACENAPHTHYLENE | 3.4 |
| ANTHRACENE | 2.8 |
| BENZO(a)ANTHRACENE | 2.5 |
| BENZO(a)PYRENE | 1.1 |
| BENZO(b)FLUORANTHENE | 1.4 |
| BENZO(k)FLUORANTHENE | 0.51 |
| CHRYSENE | 2.8 |
| FLUORANTHENE | 4.3 |
| FLUORENE | 4 |
| 2-METHYLNAPHTHALENE | 79 |
| NAPHTHALENE | 550 |
| PHENANTHRENE | 17 |
| PYRENE | 7.4 |
| **TOTAL SVOCs** | **688.66** |

| MW-16 | 15-17' |
|---|---|
| BENZO(a)ANTHRACENE | 0.14 |
| BENZO(a)PYRENE | 0.18 |
| BENZO(b)FLUORANTHENE | 0.17 |
| BENZO(g,h,i)PERYLENE | 0.11 |
| CHRYSENE | 0.15 |
| FLUORANTHENE | 0.26 |
| INDENO(1,2,3-cd)PYRENE | 0.089 |
| PHENANTHRENE | 0.2 |
| PYRENE | 0.35 |
| **TOTAL SVOCs** | **1.649** |

| SB-57 | 7-9' | 11-13' |
|---|---|---|
| BENZO(b)FLUORANTHENE | 0.075 | ND |
| PYRENE | 0.13 | ND |
| **TOTAL SVOCs** | **0.205** | **ND** |

| SB-36A | 5-5.5' |
|---|---|
| 1,1-BIPHENYL | 1.3 |
| CARBAZOLE | 0.32 |
| DIBENZOFURAN | 1.3 |
| N-NITROSODIPHENYLAMINE | 1.2 |
| ACENAPHTHENE | 2.9 |
| ACENAPHTHYLENE | 9.6 |
| ANTHRACENE | 11 |
| BENZO(a)ANTHRACENE | 20 |
| BENZO(a)PYRENE | 11 |
| BENZO(b)FLUORANTHENE | 11 |
| BENZO(g,h,i)PERYLENE | 2.7 |
| BENZO(k)FLUORANTHENE | 5.3 |
| CHRYSENE | 26 |
| DIBENZ(a,h)ANTHRACENE | 0.49 |
| FLUORANTHENE | 20 |
| FLURENE | 10 |
| INDENO(1,2,3-cd)PYRENE | 0.51 |
| 2-METHYLNAPHTHALENE | 11 |
| NAPHTHALENE | 6.2 |
| PHENANTHRENE | 50 |
| PYRENE | 36 |
| **TOTAL SVOCs** | **237.82** |

| SB-43 | 1-3' | 7-9' |
|---|---|---|
| 1,1-BIPHENYL | 0.87 | 8.1 |
| CARBAZOLE | ND | 0.8 |
| DIBENZOFURAN | ND | 1.5 |
| ACENAPHTHENE | 2.2 | 14 |
| ACENAPHTHYLENE | 3 | 6.8 |
| ANTHRACENE | 3 | 11 |
| BENZO(a)ANTHRACENE | 7.6 | 16 |
| BENZO(a)PYRENE | 6.1 | 10 |
| BENZO(b)FLUORANTHENE | 7.6 | 9.5 |
| BENZO(g,h,i)PERYLENE | 1.3 | 1.3 |
| BENZO(k)FLUORANTHENE | 2.6 | 2.5 |
| CHRYSENE | 8.7 | 16 |
| DIBENZ(a,h)ANTHRACENE | ND | 0.27 |
| FLUORANTHENE | 9.1 | 17 |
| FLURENE | 3.3 | 15 |
| INDENO(1,2,3-cd)PYRENE | 0.68 | 0.6 |
| 2-METHYLNAPHTHALENE | 7.7 | 72 |
| NAPHTHALENE | 7.1 | 81 |
| PHENANTHRENE | 13 | 56 |
| PYRENE | 12 | 37 |
| **TOTAL SVOCs** | **95.85** | **376.37** |

| SB-50 | 5-7' | 9-11' |
|---|---|---|
| DI-N-BUTYLPHTHALATE | 0.16 | 0.13 |
| DI-N-OCTYL-PHTHALATE | 0.071 | ND |
| ACENAPHTHYLENE | 0.015 | ND |
| ANTHRACENE | 0.019 | ND |
| BENZO(a)ANTHRACENE | 0.078 | ND |
| BENZO(a)PYRENE | 0.07 | ND |
| BENZO(b)FLUORANTHENE | 0.061 | ND |
| BENZO(g,h,i)PERYLENE | 0.058 | ND |
| BENZO(k)FLUORANTHENE | 0.052 | ND |
| CHRYSENE | 0.077 | ND |
| DIBENZ(a,h)ANTHRACENE | 0.012 | ND |
| FLUORANTHENE | 0.14 | ND |
| INDENO(1,2,3-cd)PYRENE | 0.045 | ND |
| PHENANTHRENE | 0.094 | ND |
| PYRENE | 0.14 | ND |
| **TOTAL SVOCs** | **1.092** | **0.13** |

| SB-44 | 7-9' |
|---|---|
| 1,1-BIPHENYL | 4.8 |
| CARBAZOLE | 0.9 |
| DIBENZOFURAN | 1.1 |
| ACENAPHTHENE | 9.1 |
| ACENAPHTHYLENE | 4.3 |
| ANTHRACENE | 6.6 |
| BENZO(a)ANTHRACENE | 8.3 |
| BENZO(a)PYRENE | 4.7 |
| BENZO(b)FLUORANTHENE | 4 |
| BENZO(g,h,i)PERYLENE | 0.92 |
| BENZO(k)FLUORANTHENE | 3 |
| CHRYSENE | 9.8 |
| DIBENZ(a,h)ANTHRACENE | 0.19 |
| FLUORANTHENE | 11 |
| FLURENE | 9.9 |
| INDENO(1,2,3-cd)PYRENE | 0.36 |
| 2-METHYLNAPHTHALENE | 40 |
| NAPHTHALENE | 48 |
| PHENANTHRENE | 31 |
| PYRENE | 21 |
| **TOTAL SVOCs** | **218.97** |

| SB-40 | 0.5-1.0' | 9-11' | 23-25' |
|---|---|---|---|
| 1,1-BIPHENYL | 1.9 | 0.35 | 6.6 |
| CARBAZOLE | ND | ND | 0.29 |
| DIBENZOFURAN | 0.46 | ND | 0.91 |
| ACENAPHTHENE | 5.7 | 0.67 | 16 |
| ACENAPHTHYLENE | 2.7 | 1.7 | 5.8 |
| ANTHRACENE | 4.3 | 1.3 | 5.7 |
| BENZO(a)ANTHRACENE | 5.6 | 1 | 7.7 |
| BENZO(a)PYRENE | 3.3 | 0.9 | 3.3 |
| BENZO(b)FLUORANTHENE | 3.6 | 0.29 | 3.4 |
| BENZO(g,h,i)PERYLENE | 0.74 | ND | ND |
| BENZO(k)FLUORANTHENE | 1.2 | 1 | 0.64 |
| CHRYSENE | 6.5 | 1 | 8.1 |
| FLUORANTHENE | 6.4 | 1.4 | 4 |
| FLURENE | 2.8 | 1.3 | 6.9 |
| INDENO(1,2,3-cd)PYRENE | 0.65 | ND | ND |
| 2-METHYLNAPHTHALENE | 5.1 | 0.39 | 63 |
| NAPHTHALENE | 16 | 3 | 110 |
| PHENANTHRENE | 15 | 4 | 27 |
| PYRENE | 8.8 | 1.6 | 16 |
| **TOTAL SVOCs** | **90.75** | **19.90** | **285.34** |

| SB-47 | 15' | 18' |
|---|---|---|
| NAPHTHALENE | 0.18 | 0.16 |
| **TOTAL SVOCs** | **0.18** | **0.16** |

| MW-20 | 15-17' | 21-23' | 23-25' |
|---|---|---|---|
| 1,1-BIPHENYL | 0.94 | 6.1 | 0.17 |
| BIS(2-ETHYLHEXYL)PHTHALATE | 0.34 | 0.11 | ND |
| CARBAZOLE | ND | 0.3 | ND |
| DIBENZOFURAN | 0.17 | 0.92 | ND |
| DI-N-BUTYLPHTHALATE | ND | ND | 0.076 |
| ACENAPHTHENE | 1.1 | 16 | 0.53 |
| ACENAPHTHYLENE | 1.6 | 7.7 | 0.19 |
| ANTHRACENE | 1.4 | 9.2 | 0.29 |
| BENZO(a)ANTHRACENE | 1.3 | 8.2 | 0.22 |
| BENZO(a)PYRENE | 0.96 | 5.6 | 0.15 |
| BENZO(b)FLUORANTHENE | 0.62 | 4.1 | 0.093 |
| BENZO(g,h,i)PERYLENE | 0.44 | 1.8 | ND |
| BENZO(k)FLUORANTHENE | 0.24 | 1.5 | ND |
| CHRYSENE | 1.2 | 7.2 | 0.21 |
| DIBENZ(a,h)ANTHRACENE | ND | 0.26 | ND |
| FLUORANTHENE | 1.8 | 10 | 0.34 |
| FLURENE | 1.8 | 13 | 0.37 |
| INDENO(1,2,3-cd)PYRENE | 0.34 | 1.2 | ND |
| 2-METHYLNAPHTHALENE | 7.4 | 65 | 1.3 |
| NAPHTHALENE | 16 | 110 | 2.6 |
| PHENANTHRENE | 6.5 | 30 | 0.95 |
| PYRENE | 2.5 | 18 | 0.46 |
| **TOTAL SVOCs** | **45.71** | **316.13** | **7.749** |

| MW-14 | 7-9' |
|---|---|
| DI-N-BUTYLPHTHALATE | 0.15 |
| ANTHRACENE | 0.013 |
| BENZO(a)ANTHRACENE | 0.046 |
| BENZO(a)PYRENE | 0.031 |
| BENZO(b)FLUORANTHENE | 0.021 |
| BENZO(g,h,i)PERYLENE | 0.027 |
| BENZO(k)FLUORANTHENE | 0.029 |
| CHRYSENE | 0.049 |
| FLUORANTHENE | 0.081 |
| INDENO(1,2,3-cd)PYRENE | 0.021 |
| PHENANTHRENE | 0.056 |
| PYRENE | 0.088 |
| **TOTAL SVOCs** | **0.612** |

| SB-52 | 12-14' | 14-16' |
|---|---|---|
| 1,1-BIPHENYL | 0.11 | 5.8 |
| CARBAZOLE | ND | 0.077 |
| DIBENZOFURAN | ND | 0.55 |
| ACENAPHTHENE | 0.37 | 19 |
| ACENAPHTHYLENE | 0.076 | 2.7 |
| ANTHRACENE | 0.21 | 8.9 |
| BENZO(a)ANTHRACENE | 0.17 | 6.4 |
| BENZO(a)PYRENE | 0.11 | 4.3 |
| BENZO(b)FLUORANTHENE | 0.082 | 3.5 |
| BENZO(g,h,i)PERYLENE | 0.045 | 1.9 |
| BENZO(k)FLUORANTHENE | ND | 1.1 |
| CHRYSENE | 0.15 | 5.7 |
| DIBENZ(a,h)ANTHRACENE | 0.26 | 0.57 |
| FLUORANTHENE | 0.23 | 10 |
| FLURENE | ND | 9.8 |
| INDENO(1,2,3-cd)PYRENE | ND | 1.6 |
| 2-METHYLNAPHTHALENE | 0.72 | 51 |
| NAPHTHALENE | 1.3 | 130 |
| PHENANTHRENE | 0.78 | 29 |
| PYRENE | 0.34 | 14 |
| **TOTAL SVOCs** | **4.953** | **305.897** |

| SB-48 | 20-21' | 23' |
|---|---|---|
| 1,1-BIPHENYL | 46 | 1.4 |
| CARBAZOLE | 1.6 | ND |
| DIBENZOFURAN | 11 | 0.21 |
| ACENAPHTHENE | 23 | 0.62 |
| ACENAPHTHYLENE | 170 | 4.7 |
| ANTHRACENE | 70 | 2.1 |
| BENZO(a)ANTHRACENE | 62 | 2 |
| BENZO(a)PYRENE | 36 | 1.2 |
| BENZO(b)FLUORANTHENE | 27 | 0.75 |
| BENZO(g,h,i)PERYLENE | 11 | 0.7 |
| BENZO(k)FLUORANTHENE | 13 | 0.34 |
| CHRYSENE | 60 | 1.9 |
| DIBENZ(a,h)ANTHRACENE | 5.2 | 0.088 |
| FLUORANTHENE | 93 | 2.7 |
| FLURENE | 110 | 2.7 |
| INDENO(1,2,3-cd)PYRENE | 28 | 0.45 |
| 2-METHYLNAPHTHALENE | 520 | 12 |
| NAPHTHALENE | 1200 | 25 |
| PHENANTHRENE | 240 | 7.1 |
| PYRENE | 140 | 3.9 |
| **TOTAL SVOCs** | **2866.8** | **69.858** |

| SB-51 | 12-14' | 16-18' |
|---|---|---|
| DI-N-BUTYLPHTHALATE | ND | 0.021 |
| FLUORANTHENE | 0.014 | ND |
| PHENANTHRENE | 0.015 | ND |
| PYRENE | 0.016 | ND |
| **TOTAL SVOCs** | **0.045** | **0.021** |

| SB-58 | 7-9' | 11-13' |
|---|---|---|
| BIS(2-ETHYLHEXYL)PHTHALATE | 0.35 | ND |
| 2-METHYLNAPHTHALENE | 0.17 | ND |
| PHENANTHRENE | 0.14 | ND |
| **TOTAL SVOCs** | **0.66** | **ND** |

| SB-45 | 5-7' | 19-21' |
|---|---|---|
| ACETOPHENONE | 0.15 | ND |
| 1,1-BIPHENYL | 1 | 3.8 |
| BIS(2-ETHYLHEXYL)PHTHALATE | ND | 0.12 |
| CARBAZOLE | 0.15 | 0.39 |
| DIBENZOFURAN | 0.44 | 0.78 |
| N-NITROSODIPHENYLAMINE | 0.5 | ND |
| ACENAPHTHENE | 10 | 12 |
| ACENAPHTHYLENE | 2.3 | 2.4 |
| ANTHRACENE | 4.8 | 5.8 |
| BENZO(a)ANTHRACENE | 4 | 5.5 |
| BENZO(a)PYRENE | 3.4 | 3.8 |
| BENZO(b)FLUORANTHENE | 2.9 | 3.4 |
| BENZO(g,h,i)PERYLENE | 0.96 | 0.93 |
| BENZO(k)FLUORANTHENE | 1.2 | 1.9 |
| CHRYSENE | 3.7 | 5.8 |
| DIBENZ(a,h)ANTHRACENE | 0.11 | 0.15 |
| FLUORANTHENE | 6.8 | 7 |
| FLURENE | 5.7 | 7.2 |
| INDENO(1,2,3-cd)PYRENE | 0.38 | 0.38 |
| 2-METHYLNAPHTHALENE | 19 | 38 |
| NAPHTHALENE | 1.1 | 74 |
| PHENANTHRENE | 18 | 21 |
| PYRENE | 14 | 13 |
| **TOTAL SVOCs** | **100.59** | **207.4** |

| MW-10 (SB-46) | 11-13' | 13-15' |
|---|---|---|
| BIS(2-ETHYLHEXYL)PHTHALATE | ND | 0.095 |
| ANTHRACENE | ND | 0.072 |
| BENZO(a)ANTHRACENE | ND | 0.38 |
| BENZO(a)PYRENE | ND | 0.29 |
| BENZO(b)FLUORANTHENE | ND | 0.38 |
| BENZO(g,h,i)PERYLENE | ND | 0.072 |
| BENZO(k)FLUORANTHENE | ND | 0.14 |
| CHRYSENE | ND | 0.36 |
| FLUORANTHENE | ND | 0.82 |
| 2-METHYLNAPHTHALENE | ND | 0.39 |
| PHENANTHRENE | ND | 0.22 |
| PYRENE | ND | 0.81 |
| **TOTAL SVOCs** | **ND** | **4.029** |

| SB-33 | 17-19' | 27-28' | DUP. 27-28' |
|---|---|---|---|
| 1,1-BIPHENYL | 1 | ND | 6.1 |
| CARBAZOLE | ND | ND | 0.75 |
| DIBENZOFURAN | ND | ND | 1.3 |
| 2,4-DIMETHYLPHENOL | 1.3 | ND | 1.2 |
| 3+4-METHYLPHENOLS | 0.56 | ND | 0.59 |
| PHENOL | ND | ND | 0.36 |
| ACENAPHTHENE | 2.5 | ND | 14 |
| ACENAPHTHYLENE | 1 | ND | 5.5 |
| ANTHRACENE | 1.6 | ND | 9.4 |
| BENZO(a)ANTHRACENE | 1.6 | ND | 9.8 |
| BENZO(a)PYRENE | 1.1 | ND | 5.5 |
| BENZO(b)FLUORANTHENE | 0.83 | ND | 4.6 |
| BENZO(g,h,i)PERYLENE | 0.41 | ND | 1.2 |
| BENZO(k)FLUORANTHENE | ND | ND | 1.8 |
| CHRYSENE | 1.8 | ND | 10 |
| FLUORANTHENE | 2 | ND | 11 |
| FLURENE | 1.9 | ND | 11 |
| INDENO(1,2,3-cd)PYRENE | 0.42 | ND | 1.3 |
| 2-METHYLNAPHTHALENE | 12 | 0.97 | 59 |
| NAPHTHALENE | 26 | 3 | 86 |
| PHENANTHRENE | 7 | ND | 32 |
| PYRENE | 2.6 | ND | 15 |
| **TOTAL SVOCs** | **65.62** | **3.97** | **287.4** |

| TP-3 | 5-10' | 10' |
|---|---|---|
| ANTHRACENE | ND | 0.11 |
| BENZO(a)ANTHRACENE | 0.096 | 0.2 |
| BENZO(a)PYRENE | 0.12 | 0.19 |
| BENZO(b)FLUORANTHENE | 0.15 | 0.2 |
| BENZO(g,h,i)PERYLENE | 0.065 | 0.085 |
| CHRYSENE | 0.16 | 0.21 |
| FLUORANTHENE | 0.1 | 0.27 |
| INDENO(1,2,3-cd)PYRENE | 0.26 | 0.28 |
| NAPHTHALENE | 0.069 | ND |
| PHENANTHRENE | 0.091 | 0.4 |
| PYRENE | 0.21 | 0.52 |
| **TOTAL SVOCs** | **1.321** | **2.465** |

| SB-49 | 17-19' |
|---|---|
| DI-N-BUTYLPHTHALATE | 0.2 |
| **TOTAL SVOCs** | **0.2** |

| MW-12 | 8-10' |
|---|---|
| BIS(2-ETHYLHEXYL)PHTHALATE | 0.24 |
| DI-N-BUTYLPHTHALATE | 0.089 |
| **TOTAL SVOCs** | **0.329** |

| SB-32 | 9-11' |
|---|---|
| 1,1-BIPHENYL | 0.17 |
| FLUORANTHENE | 0.12 |
| FLURENE | 0.16 |
| 2-METHYLNAPHTHALENE | 1.3 |
| NAPHTHALENE | 0.49 |
| PHENANTHRENE | 0.35 |
| PYRENE | 0.13 |
| **TOTAL SVOCs** | **2.72** |

| MW-9 | 21-23' | 25-27' |
|---|---|---|
| 1,1-BIPHENYL | 35 | ND |
| DIBENZOFURAN | 5.4 | ND |
| ACENAPHTHENE | 110 | 0.12 |
| ACENAPHTHYLENE | 15 | ND |
| ANTHRACENE | 58 | 0.15 |
| BENZO(a)ANTHRACENE | 33 | 0.12 |
| BENZO(a)PYRENE | 22 | 0.077 |
| BENZO(b)FLUORANTHENE | 15 | 0.049 |
| BENZO(g,h,i)PERYLENE | 3.7 | ND |
| BENZO(k)FLUORANTHENE | 6.2 | ND |
| CHRYSENE | 31 | 0.12 |
| DIBENZ(a,h)ANTHRACENE | 0.57 | ND |
| FLUORANTHENE | 66 | 0.17 |
| FLUORENE | 72 | 0.14 |
| INDENO(1,2,3-cd)PYRENE | 4.4 | ND |
| 2-METHYLNAPHTHALENE | 320 | ND |
| NAPHTHALENE | 770 | ND |
| PHENANTHRENE | 170 | 0.63 |
| PYRENE | 69 | 0.32 |
| **TOTAL SVOCs** | **1806.27** | **1.896** |

LEGEND

- CURRENT FEATURES
- HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)
- EXISTING BUILDING
- CHAIN LINK FENCE
- SG-2 SOIL GAS LOCATION
- SB-28 SOIL BORING
- MW-5 MONITORING WELL
- TP 1 TEST PIT LOCATION
- SOIL CLEANUP OBJECTIVE(S) EXCEEDED

NOTES:

1. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
2. GREY SHADED VALUES EXCEED 6 NYCRR PART 375 UNRESTRICTED SOIL CLEANUP OBJECTIVES.
3. ORANGE SHADED VALUES EXCEED BOTH THE 6 NYCRR PART 375 UNRESTRICTED AND RESTRICTED COMMERCIAL SOIL CLEANUP OBJECTIVES.
4. ND = NOT DETECTED
5. SVOCs WERE NOT DETECTED IN SUBSURFACE SOIL SAMPLES FROM SB-37, SB-42 AND SB-53.
6. SOIL SAMPLES WERE NOT ANALYZED FOR SVOCs AT MW-7, MW-13, MW-15, SB-25, SB-28, SB-31, SB-34, SB-38, SB-41, SB-54, AND SB-56 DUE TO POOR RECOVERY.
7. ANALYTICAL RESULTS ARE NOT SHOWN FOR LOCATIONS AT OU-2.

80 40 0 80 160

SCALE: 1"=80'

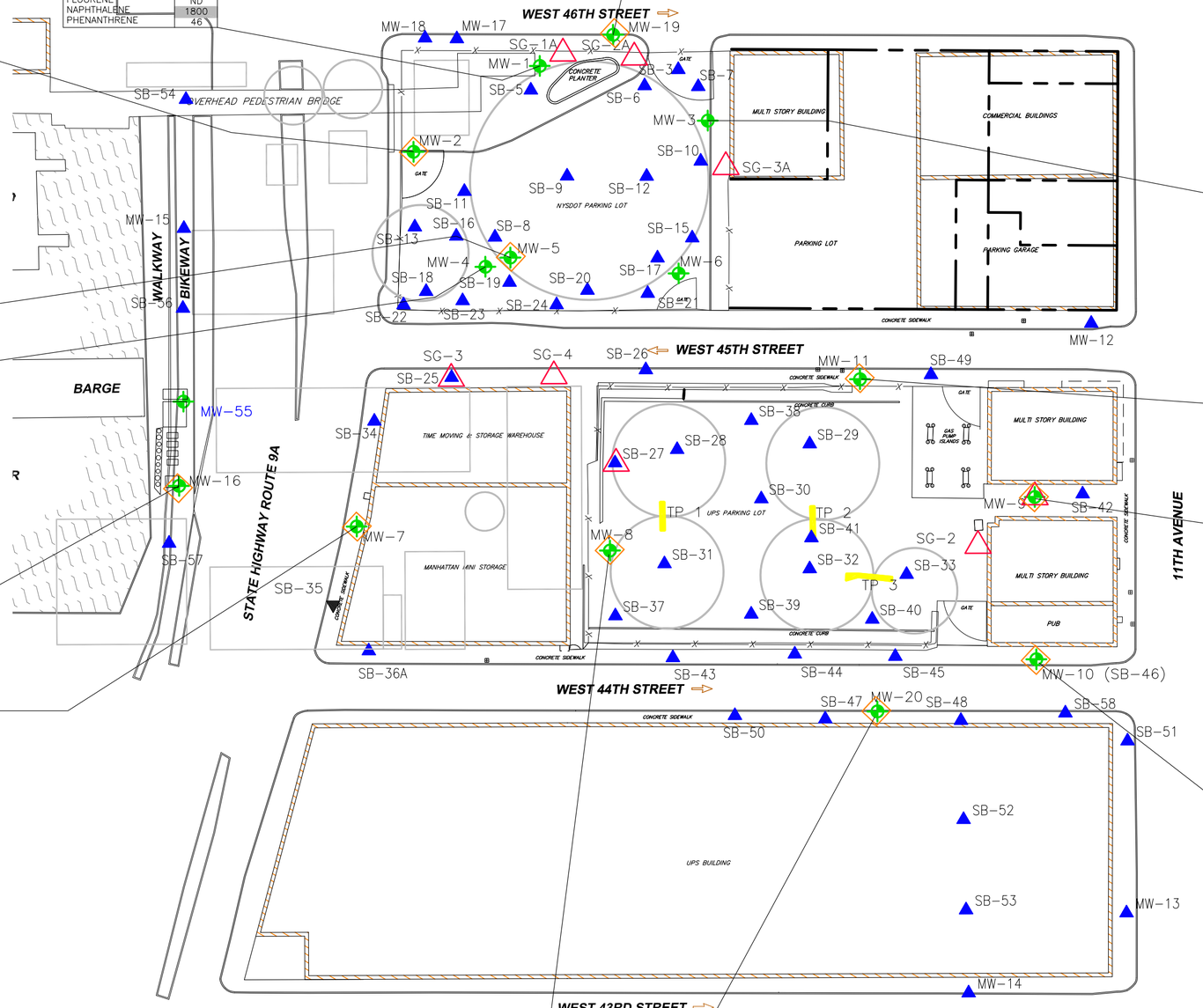
# FIGURE 12

**CONSOLIDATED EDISON**
**FORMER WEST 45th STREET GAS WORKS (OU-1)**
**NEW YORK, NY**

## SUMMARY OF OU-1 SVOCs DETECTED IN SUBSURFACE SOIL

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\446672 - W45TH OU2\CAD\10-28-14\446672-SK008-FIG 11.DWG
PLOT DATE: 5/14/2021 7:50 AM PLOTTED BY: RUSSO, JILL




| MW-2 | 5/03 | 5/07 |
|---|---|---|
| VOCs | | |
| BENZENE | 280 | ND |
| ETHYL BENZENE | 33 | ND |
| ISOPROPYLBENZENE | NA | ND |
| STYRENE | 1.8 JN | ND |
| TOLUENE | 6.6 | ND |
| m/p-XYLENES | 10 | ND |
| o-XYLENE | 20 JN | ND |
| SVOCs | | |
| ACENAPHTHENE | 33 | 36 |
| FLUORENE | 4.7 J | 2.2 J |
| PHENANTHRENE | 2 J | ND |

| MW-1 | 5/03 |
|---|---|
| VOCs | |
| BENZENE | 11000 |
| ETHYL BENZENE | 3100 |
| ISOPROPYLBENZENE | NA |
| STYRENE | 3100 |
| TOLUENE | 16000 |
| m/p-XYLENES | 5500 |
| o-XYLENE | 2400 |
| SVOCs | |
| 2-METHYLPHENOL | ND |
| 3+4-METHYLPHENOLS | 28 |
| ACENAPHTHENE | 10 J |
| FLUORENE | ND |
| NAPHTHALENE | 1800 |
| PHENANTHRENE | 46 |

| MW-19 | 5/10/07 |
|---|---|
| VOCs | |
| ACETONE | 21 |
| BENZENE | 32000 |
| 2-BUTANONE | 16 |
| CYCLOHEXANE | 2.9 |
| ETHYL BENZENE | 8000 |
| ISOPROPYLBENZENE | 94 |
| STYRENE | 28 |
| TOLUENE | 13000 |
| m/p-XYLENES | 6800 |
| o-XYLENE | 3000 |
| SVOCs | |
| ACETOPHENONE | 16 |
| 1,1-BIPHENYL | 17 |
| CARBAZOLE | 16 |
| DIBENZOFURAN | 6.7 |
| 2,4-DIMETHYLPHENOL | 39 |
| 2-METHYLPHENOL | 21 |
| 3+4-METHYLPHENOLS | 23 |
| PHENOL | 53 |
| ACENAPHTHENE | 27 |
| ACENAPHTHYLENE | 4.9 |
| ANTHRACENE | 4.9 |
| FLUORANTHENE | 3.5 |
| FLUORENE | 60 |
| 2-METHYLNAPHTHALENE | 130 |
| NAPHTHALENE | 1400 |
| PHENANTHRENE | 61 |
| PYRENE | 4.1 |

| MW-3 | 5/03 |
|---|---|
| VOCs | |
| BENZENE | 45000 |
| ETHYL BENZENE | 13000 |
| ISOPROPYLBENZENE | NA |
| STYRENE | 10000 |
| TOLUENE | 66000 |
| m/p-XYLENES | 19000 |
| o-XYLENE | 8200 |
| SVOCs | |
| 2-METHYLPHENOL | 14 |
| 3+4-METHYLPHENOLS | 13 |
| ACENAPHTHENE | 21 |
| FLUORENE | 78 J |
| NAPHTHALENE | 1600 |
| PHENANTHRENE | 95 J |

| MW-5 | 5/03 | 5/07 |
|---|---|---|
| VOCs | | |
| BENZENE | 1000 J | 200 |
| ETHYL BENZENE | 990 J | 250 |
| ISOPROPYLBENZENE | NA | 32 |
| STYRENE | 160 J | 3.7 J |
| TOLUENE | 790 J | 110 |
| m/p-XYLENES | 690 J | 150 |
| o-XYLENE | 390 JN | 90 |
| SVOCs | | |
| ACENAPHTHENE | 52 | 16 |
| FLUORENE | 23 | 11 |
| NAPHTHALENE | 290 | 460 |
| PHENANTHRENE | 8.7 J | 13 |

| MW-11 | 5/10/07 |
|---|---|
| VOCs | |
| ACETONE | 42 |
| BENZENE | 11 |
| CYCLOHEXANE | 2 |
| ISOPROPYLBENZENE | 2.2 |
| METHYLCYCLOHEXANE | 1.7 |
| TOLUENE | 1.2 |
| o-XYLENE | 1 |
| SVOCs | |
| NAPHTHALENE | 2.1 |

| MW-4 | 3/17/06 | 5/10/07 |
|---|---|---|
| VOCs | | |
| BENZENE | 4100 | 4000 |
| ETHYL BENZENE | 4200 | 4300 |
| ISOPROPYLBENZENE | NA | NA |
| STYRENE | 390 JN | 440 J |
| TOLUENE | 3300 | 3400 |
| m/p-XYLENES | 3400 | 3600 |
| o-XYLENE | 1400 JN | 1500 |
| SVOCs | | |
| 3+4-METHYLPHENOLS | 2.3 J | 2.6 J |
| ACENAPHTHENE | 69 | 80 |
| FLUORENE | 36 | 43 |
| NAPHTHALENE | 2300 | 2300 |
| PHENANTHRENE | 59 | 70 |

| MW-9 | 3/17/06 | 3/17/06 | DUP. | 5/22/07 |
|---|---|---|---|---|
| VOCs | | | | |
| BENZENE | | 6000 | 4800 | 4000 |
| CARBON DISULFIDE | | ND | ND | 1.2 |
| CYCLOHEXANE | | 2.7 | 2.7 | 2.4 |
| ETHYL BENZENE | | 1700 | 2200 | 2100 |
| ISOPROPYLBENZENE | | 100 | 100 | 71 |
| METHYLCYCLOHEXANE | | ND | ND | 35 |
| METHYL-TERT-BUTYL ETHER | | 2.6 | 2.7 | ND |
| STYRENE | | 21 | ND | 3 |
| TOLUENE | | 1500 | 1100 | 170 |
| m/p-XYLENES | | 1600 | 1200 | 1200 |
| o-XYLENE | | 1200 | 810 | 840 |
| SVOCs | | | | |
| ACETOPHENONE | | ND | ND | 7.2 |
| 1,1-BIPHENYL | | 44 | 42 | 39 |
| CARBAZOLE | | 6.1 | 6.1 | 4.4 |
| DIBENZOFURAN | | 4.4 | 4.1 | 4 |
| PHENOL | | 7.9 | 9.3 | ND |
| ACENAPHTHENE | | 150 | 130 | 110 |
| ACENAPHTHYLENE | | 12 | 11 | 10 |
| ANTHRACENE | | 11 | 9.8 | 6.7 |
| BENZO(a)ANTHRACENE | | 3.3 | 2.3 | NA |
| BENZO(a)PYRENE | | 2.1 | ND | NA |
| BENZO(b)FLUORANTHENE | | 1.4 | ND | NA |
| CHRYSENE | | 2.8 | 2.1 | NA |
| FLUORANTHENE | | 3 | 2.4 | 2.7 |
| FLUORENE | | 38 | 36 | 37 |
| 2-METHYLNAPHTHALENE | | 430 | 590 | 520 |
| NAPHTHALENE | | 4600 | 4400 | 4400 |
| PHENANTHRENE | | 53 | 48 | 38 |
| PYRENE | | 10 | 8.2 | 3.7 |

| MW-16 | 5/8/07 |
|---|---|
| VOCs | |
| BENZENE | 1.3 |
| SVOCs | |
| BIS(2-ETHYLHEXYL)PHTHALATE | 1.6 |

| MW-7 | 3/17/06 | 5/10/07 |
|---|---|---|
| VOCs | | |
| ACETONE | 490 | ND |
| BENZENE | 200 | 94 |
| 2-BUTANONE | 94 | ND |
| CARBON DISULFIDE | 5.7 | ND |
| CHLOROFORM | 5.1 | ND |
| ETHYL BENZENE | 530 | 260 |
| 2-HEXANONE | 2.6 | ND |
| ISOPROPYLBENZENE | 39 | 15 |
| STYRENE | 3.7 | 1.8 |
| TOLUENE | 300 | 160 |
| m/p-XYLENES | 290 | 150 |
| o-XYLENE | 350 | 180 |
| SVOCs | | |
| ACETOPHENONE | 8.4 | 8.1 |
| BENZALDEHYDE | ND | 25 |
| 1,1-BIPHENYL | 26 | 10 |
| BIS(2-ETHYLHEXYL)PHTHALATE | 3 | ND |
| CARBAZOLE | 7.1 | 2.6 |
| DIBENZOFURAN | ND | 1.8 |
| 2,4-DIMETHYLPHENOL | 29 | ND |
| 2-METHYLPHENOL | 3.6 | ND |
| 3+4-METHYLPHENOLS | 17 | ND |
| PHENOL | 12 | ND |
| ACENAPHTHENE | 64 | 27 |
| ACENAPHTHYLENE | 28 | 6.6 |
| ANTHRACENE | 34 | 2.9 |
| BENZO(a)ANTHRACENE | 40 | NA |
| BENZO(a)PYRENE | 27 | NA |
| BENZO(b)FLUORANTHENE | 28 | NA |
| BENZO(g,h,i)PERYLENE | 4.2 | NA |
| BENZO(k)FLUORANTHENE | 31 | NA |
| CHRYSENE | 46 | NA |
| DIBENZ(a,h)ANTHRACENE | 1.7 | NA |
| FLUORANTHENE | 44 | 1.5 |
| FLUORENE | 43 | 13 |
| 2-METHYLNAPHTHALENE | 360 | 170 |
| NAPHTHALENE | 1700 | 910 |
| PHENANTHRENE | 130 | 17 |
| PYRENE | 64 | 2.7 |

| MW-10 | 3-31-06 | 5-10-07 | 5-10-07 DUP |
|---|---|---|---|
| VOCs | | | |
| BENZENE | ND | 2300 | 2300 |
| CYCLOHEXANE | R | 2 | 2.3 |
| 1,2-DICHLOROETHANE | 9.4 | NA | NA |
| cis-1,2-DICHLOROETHENE | 30 | NA | NA |
| ETHYLBENZENE | ND | 17 | 18 |
| ISOPROPYLBENZENE | ND | 49 | 50 |
| METHYL-TERT-BUTYL ETHER | ND | 28 | 28 |
| METHYLCYCLOHEXANE | ND | 1.7 | 1.6 |
| TETRACHLOROETHENE | 0.73 | NA | NA |
| TOLUENE | ND | 2.4 | 2.1 |
| m/p-XYLENES | ND | 15 | 15 |
| o-XYLENE | ND | 13 | 13 |
| SVOCs | | | |
| 1,1-BIPHENYL | 1.9 | ND | ND |
| CARBAZOLE | 1.8 | 2.2 | 2.4 |
| DIBENZOFURAN | ND | 1.3 | 1.4 |
| PHENOL | 12 | ND | ND |
| ACENAPHTHENE | 130 | 84 | 91 |
| ACENAPHTHYLENE | 1.6 | 1.6 | ND |
| FLUORENE | 13 | 11 | 12 |
| 2-METHYLNAPHTHALENE | 130 | 98 | 110 |
| NAPHTHALENE | 36 | 15 | 16 |
| PHENANTHRENE | 8.2 | 9.1 | 9.9 |

| MW-8 | 3/17/06 | 5/22/07 |
|---|---|---|
| VOCs | | |
| BENZENE | 1200 | 1100 |
| CYCLOHEXANE | 3.1 | 1.8 |
| ETHYL BENZENE | 640 | 330 |
| ISOPROPYLBENZENE | 29 | 29 |
| METHYLCYCLOHEXANE | 8.9 | 3.8 |
| STYRENE | 8.7 | 1.4 |
| TOLUENE | 890 | 150 |
| m/p-XYLENES | 550 | 250 |
| o-XYLENE | 270 | 110 |
| SVOCs | | |
| 1,1-BIPHENYL | 1.8 | 1.6 |
| 3+4-METHYLPHENOLS | 2.9 | ND |
| PENTACHLOROPHENOL | ND | 13 |
| PHENOL | 7.3 | ND |
| ACENAPHTHENE | 2.8 | 2.5 |
| FLUORENE | ND | 1.5 |
| 2-METHYLNAPHTHALENE | 45 | 29 |
| NAPHTHALENE | 590 | 380 |
| PHENANTHRENE | 2.1 | 2.5 |

| MW-20 | 5/22/07 |
|---|---|
| VOCs | |
| BENZENE | 4700 |
| CYCLOBENZENE | 1.1 |
| ETHYL BENZENE | 740 |
| ISOPROPYLBENZENE | 64 |
| STYRENE | 1.8 |
| TOLUENE | 56 |
| m/p-XYLENES | 130 |
| o-XYLENE | 210 |
| SVOCs | |
| 1,1-BIPHENYL | 39 |
| CARBAZOLE | 3.8 |
| PHENOL | 6.7 |
| ACENAPHTHENE | 150 |
| ACENAPHTHYLENE | 9.9 |
| ANTHRACENE | 10 |
| FLUORANTHENE | 39 |
| FLUORENE | 44 |
| 2-METHYLNAPHTHALENE | 290 |
| NAPHTHALENE | 2400 |
| PHENANTHRENE | 57 |
| PYRENE | 4.8 |

| NYSDEC Class GA Groundwater Standards/Guidance Values | |
|---|---|
| **VOCs** | |
| Benzene | 1 |
| Ethyl Benzene | 5 |
| Isopropylbenzene | 5 |
| Styrene | 5 |
| Toluene | 5 |
| m/p-Xylenes | 5 |
| o-Xylene | 5 |
| **SVOCs** | |
| 2-Methylphenol | 1 |
| 3+4-Methylphenols | 1 |
| Acenaphthene | 20 (G) |
| Fluorene | 50 (G) |
| Naphthalene | 10 (G) |
| Phenanthrene | 50 (G) |

LEGEND

- CURRENT FEATURES
- HISTORICAL FEATURES (LOCATIONS ARE APPROXIMATE)
- EXISTING BUILDING
- CHAIN LINK FENCE
- SG-2 SOIL GAS LOCATION
- SB-28 SOIL BORING
- MW-5 MONITORING WELL
- TEST PIT LOCATION
- STANDARD OR GUIDANCE VALUE EXCEEDED
- 80 SHADED VALUES EXCEEDS NYSDEC TOGS 1.1.1 STANDARDS

ALL CONCENTRATIONS ARE IN PARTS PER BILLION (ug/L)

NOTES:

1. ALL CONCENTRATIONS ARE IN PARTS PER BILLION (ppb).
2. SHADED VALUES EXCEED NYSDEC GROUNDWATER QUALITY STANDARD OR GUIDANCE VALUE (TOGS 1.1.1).
3. ND = NOT DETECTED
4. NA = NOT ANALYZED
5. VOCs AND SVOCs WERE NOT DETECTED IN GROUNDWATER SAMPLES COLLECTED FROM MW-55.
6. GROUNDWATER SAMPLES WERE NOT COLLECTED FROM LOCATIONS MW-6, MW-12 THROUGH MW-15, 17 AND 18.

80 40 0 80 160

SCALE: 1"=80'

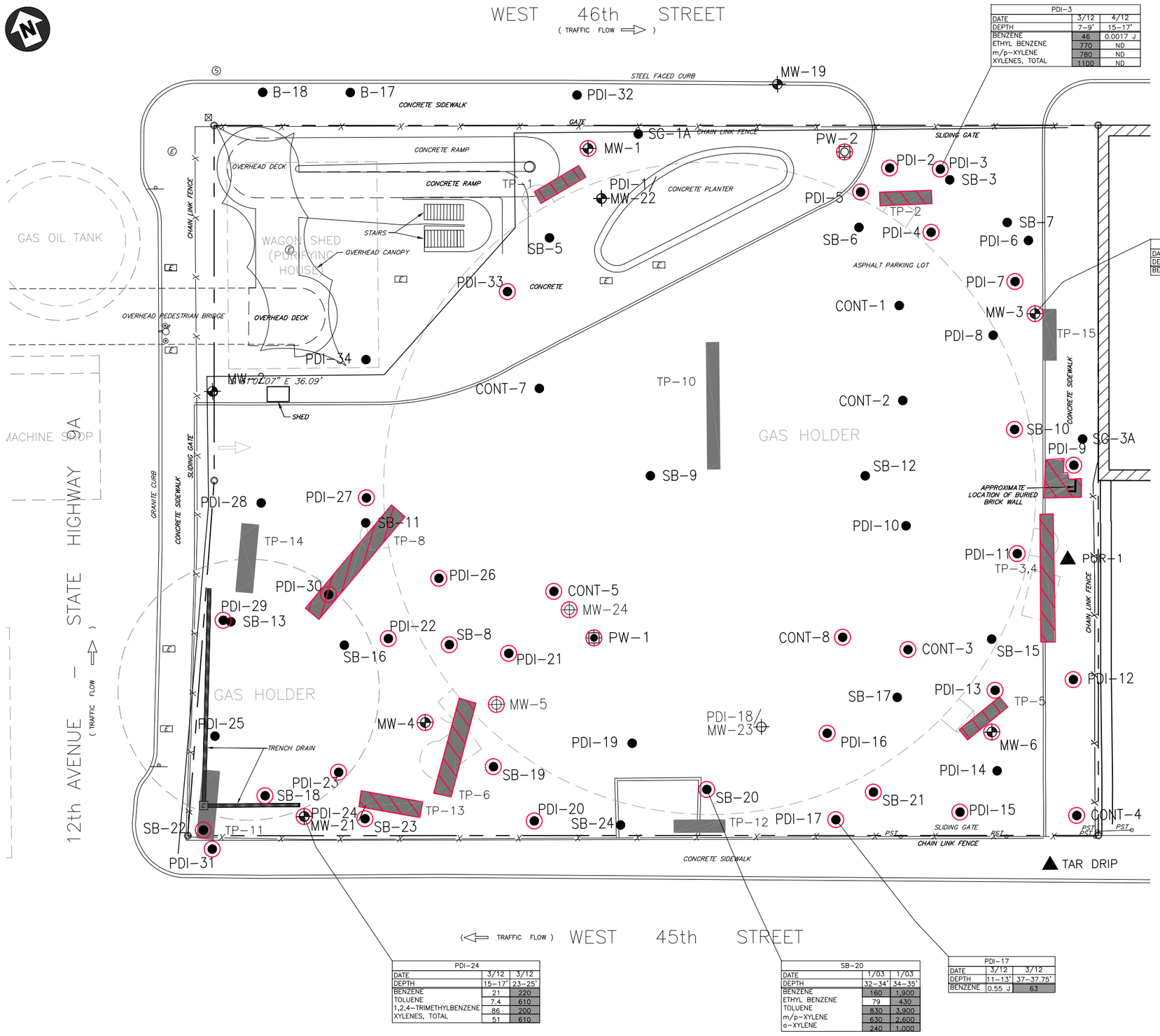
# FIGURE 13

**CONSOLIDATED EDISON**
**FORMER WEST 45th STREET GAS WORKS (OU-1)**
**NEW YORK, NY**

## SUMMARY OF VOCs & SVOCs IN GROUNDWATER 2003-2007

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\CONED\446672 - W45TH OU2\CAD\10-28-14\446672-SK007-FIG 13.DWG
PLOT DATE: 5/14/2021 7:52 AM PLOTTED BY: RUSSO, JILL




| PDI-3 | | |
|---|---|---|
| DATE | 3/12 | 4/12 |
| DEPTH | 7-9' | 15-17' |
| BENZENE | 46 | 0.0017 J |
| ETHYL BENZENE | 770 | ND |
| m/p-XYLENE | 780 | ND |
| XYLENES, TOTAL | 1100 | ND |

| MW-3 | | |
|---|---|---|
| DATE | 4/03 | 4/03 |
| DEPTH | 9-11' | 23-25' |
| BENZENE | 68 | 2,600 J |

| PDI-24 | | |
|---|---|---|
| DATE | 3/12 | 3/12 |
| DEPTH | 15-17' | 23-25' |
| BENZENE | 21 | 220 |
| TOLUENE | 7.4 | 610 |
| 1,2,4-TRIMETHYLBENZENE | 86 | 200 |
| XYLENES, TOTAL | 51 | 610 |

| SB-20 | | |
|---|---|---|
| DATE | 1/03 | 1/03 |
| DEPTH | 32-34' | 34-35' |
| BENZENE | 160 | 1,900 |
| ETHYL BENZENE | 79 | 430 |
| TOLUENE | 830 | 3,900 |
| m/p-XYLENE | 630 | 2,600 |
| o-XYLENE | 240 | 1,000 |

| PDI-17 | | |
|---|---|---|
| DATE | 3/12 | 3/12 |
| DEPTH | 11-13' | 37-37.75' |
| BENZENE | 0.55 J | 63 |

LEGEND:

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURES
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TEST PIT
- TEST PIT WITH AREA OF VISIBLE NAPL
- AREA OF VISIBLE NAPL (IN BORINGS OR MONITORING WELLS)
- ABANDONED MONITORING WELL (MW-24, MW-5, AND PDI-18/MW-23)
- ABANDONED PUMPING WELL
- EXISTING PUMPING WELL

| VOCs | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives |
|---|---|
| BENZENE | 44 |
| ETHYL BENZENE | 390 |
| TOLUENE | 500 |
| m/p-XYLENE | 500 |
| o-xYLENE | 500 |
| XYLENES, TOTAL | 500 |
| 1,2,4-TRIMETHYLBENZENE | 190 |

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (mg/Kg)

1.1 SHADED VALUES EXCEED 6 NYCRR PART 375 COMMERCIAL USE SOIL CLEANUP OBJECTIVES

J ESTIMATE VALUE

N SPIKED SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS

NA NOT AVAILABLE

ND NOT DETECTED

30 15 0 30 60

SCALE: 1"=30'

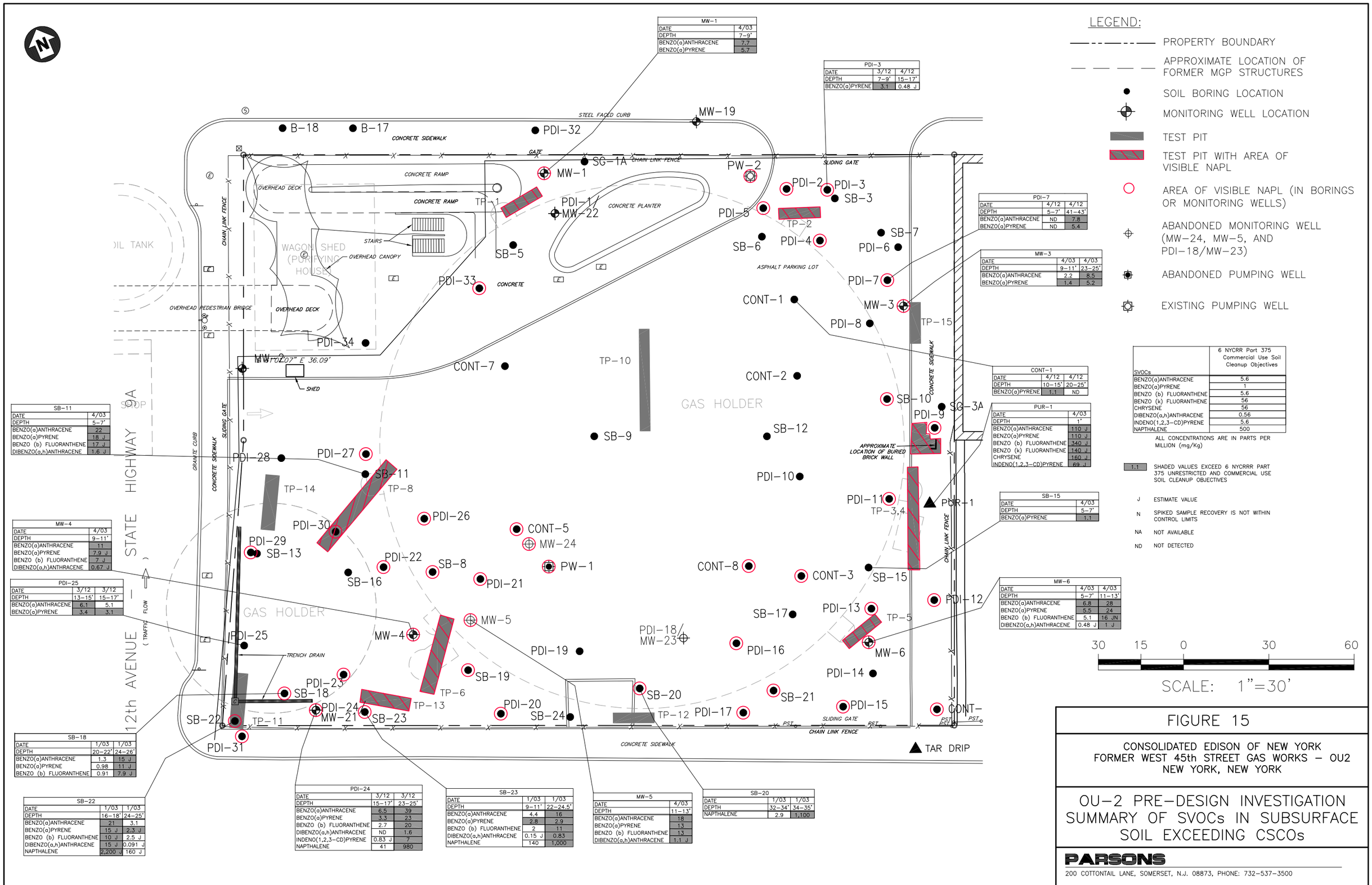
# FIGURE 14

CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS - OU2
NEW YORK, NEW YORK

## OU-2 PRE-DESIGN INVESTIGATION SUMMARY OF VOCs IN SUBSURFACE SOIL EXCEEDING CSCOs

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500

FILE NAME: P:\CONED\450089 - W45TH OU-2 AAR 2016\ENGR\AAR-FIGURES\450089-AAR-SK006.DWG
PLOT DATE: 5/14/2021 7:57 AM PLOTTED BY: RUSSO, JILL




| MW-1 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 7-9' |
| BENZO(a)ANTHRACENE | 7.7 |
| BENZO(a)PYRENE | 5.7 |

| PDI-3 | | |
|---|---|---|
| DATE | 3/12 | 4/12 |
| DEPTH | 7-9' | 15-17' |
| BENZO(a)PYRENE | 3.1 | 0.48 J |

| PDI-7 | | |
|---|---|---|
| DATE | 4/12 | 4/12 |
| DEPTH | 5-7' | 41-43' |
| BENZO(a)ANTHRACENE | ND | 7.8 |
| BENZO(a)PYRENE | ND | 5.4 |

| MW-3 | | |
|---|---|---|
| DATE | 4/03 | 4/03 |
| DEPTH | 9-11' | 23-25' |
| BENZO(a)ANTHRACENE | 2.2 | 8.5 |
| BENZO(a)PYRENE | 1.4 | 5.2 |

| CONT-1 | | |
|---|---|---|
| DATE | 4/12 | 4/12 |
| DEPTH | 10-15' | 20-25' |
| BENZO(a)PYRENE | 1.1 | ND |

| PUR-1 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 1' |
| BENZO(a)ANTHRACENE | 110 J |
| BENZO(a)PYRENE | 110 J |
| BENZO (b) FLUORANTHENE | 340 J |
| BENZO (k) FLUORANTHENE | 140 J |
| CHRYSENE | 160 J |
| INDENO(1,2,3-CD)PYRENE | 69 J |

| SB-15 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 5-7' |
| BENZO(a)PYRENE | 1.1 |

| MW-6 | | |
|---|---|---|
| DATE | 4/03 | 4/03 |
| DEPTH | 5-7' | 11-13' |
| BENZO(a)ANTHRACENE | 6.8 | 28 |
| BENZO(a)PYRENE | 5.5 | 24 |
| BENZO (b) FLUORANTHENE | 5.1 | 16 JN |
| DIBENZO(a,h)ANTHRACENE | 0.48 J | 1 J |

| SB-11 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 5-7' |
| BENZO(a)ANTHRACENE | 22 |
| BENZO(a)PYRENE | 18 J |
| BENZO (b) FLUORANTHENE | 17 J |
| DIBENZO(a,h)ANTHRACENE | 1.6 J |

| MW-4 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 9-11' |
| BENZO(a)ANTHRACENE | 11 |
| BENZO(a)PYRENE | 7.9 J |
| BENZO (b) FLUORANTHENE | 7 J |
| DIBENZO(a,h)ANTHRACENE | 0.67 J |

| PDI-25 | | |
|---|---|---|
| DATE | 3/12 | 3/12 |
| DEPTH | 13-15' | 15-17' |
| BENZO(a)ANTHRACENE | 6.1 | 5.1 |
| BENZO(a)PYRENE | 3.4 | 3.1 |

| SB-18 | | |
|---|---|---|
| DATE | 1/03 | 1/03 |
| DEPTH | 20-22' | 24-26' |
| BENZO(a)ANTHRACENE | 1.3 | 15 J |
| BENZO(a)PYRENE | 0.98 | 11 J |
| BENZO (b) FLUORANTHENE | 0.91 | 7.9 J |

| SB-22 | | |
|---|---|---|
| DATE | 1/03 | 1/03 |
| DEPTH | 16-18' | 24-25' |
| BENZO(a)ANTHRACENE | 21 | 3.1 |
| BENZO(a)PYRENE | 15 J | 2.3 J |
| BENZO (b) FLUORANTHENE | 10 J | 2.5 J |
| DIBENZO(a,h)ANTHRACENE | 15 J | 0.091 J |
| NAPTHALENE | 2,200 J | 160 J |

| PDI-24 | | |
|---|---|---|
| DATE | 3/12 | 3/12 |
| DEPTH | 15-17' | 23-25' |
| BENZO(a)ANTHRACENE | 6.5 | 39 |
| BENZO(a)PYRENE | 3.3 | 23 |
| BENZO (b) FLUORANTHENE | 2.7 | 20 |
| DIBENZO(a,h)ANTHRACENE | ND | 1.6 |
| INDENO(1,2,3-CD)PYRENE | 0.83 J | 7 |
| NAPTHALENE | 41 | 980 |

| SB-23 | | |
|---|---|---|
| DATE | 1/03 | 1/03 |
| DEPTH | 9-11' | 22-24.5' |
| BENZO(a)ANTHRACENE | 4.4 | 16 |
| BENZO(a)PYRENE | 2.8 | 2.9 |
| BENZO (b) FLUORANTHENE | 2 | 11 |
| DIBENZO(a,h)ANTHRACENE | 0.15 J | 0.83 |
| NAPTHALENE | 140 | 1,000 |

| MW-5 | |
|---|---|
| DATE | 4/03 |
| DEPTH | 11-13' |
| BENZO(a)ANTHRACENE | 18 |
| BENZO(a)PYRENE | 13 |
| BENZO (b) FLUORANTHENE | 13 |
| DIBENZO(a,h)ANTHRACENE | 1.1 J |

| SB-20 | | |
|---|---|---|
| DATE | 1/03 | 1/03 |
| DEPTH | 32-34' | 34-35' |
| NAPTHALENE | 2.9 | 1,100 |

| SVOCs | 6 NYCRR Part 375 Commercial Use Soil Cleanup Objectives |
|---|---|
| BENZO(a)ANTHRACENE | 5.6 |
| BENZO(a)PYRENE | 1 |
| BENZO (b) FLUORANTHENE | 5.6 |
| BENZO (k) FLUORANTHENE | 56 |
| CHRYSENE | 56 |
| DIBENZO(a,h)ANTHRACENE | 0.56 |
| INDENO(1,2,3-CD)PYRENE | 5.6 |
| NAPTHALENE | 500 |

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (mg/Kg)

1.1 SHADED VALUES EXCEED 6 NYCRR PART 375 UNRESTRICTED AND COMMERCIAL USE SOIL CLEANUP OBJECTIVES

J ESTIMATE VALUE

N SPIKED SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS

NA NOT AVAILABLE

ND NOT DETECTED

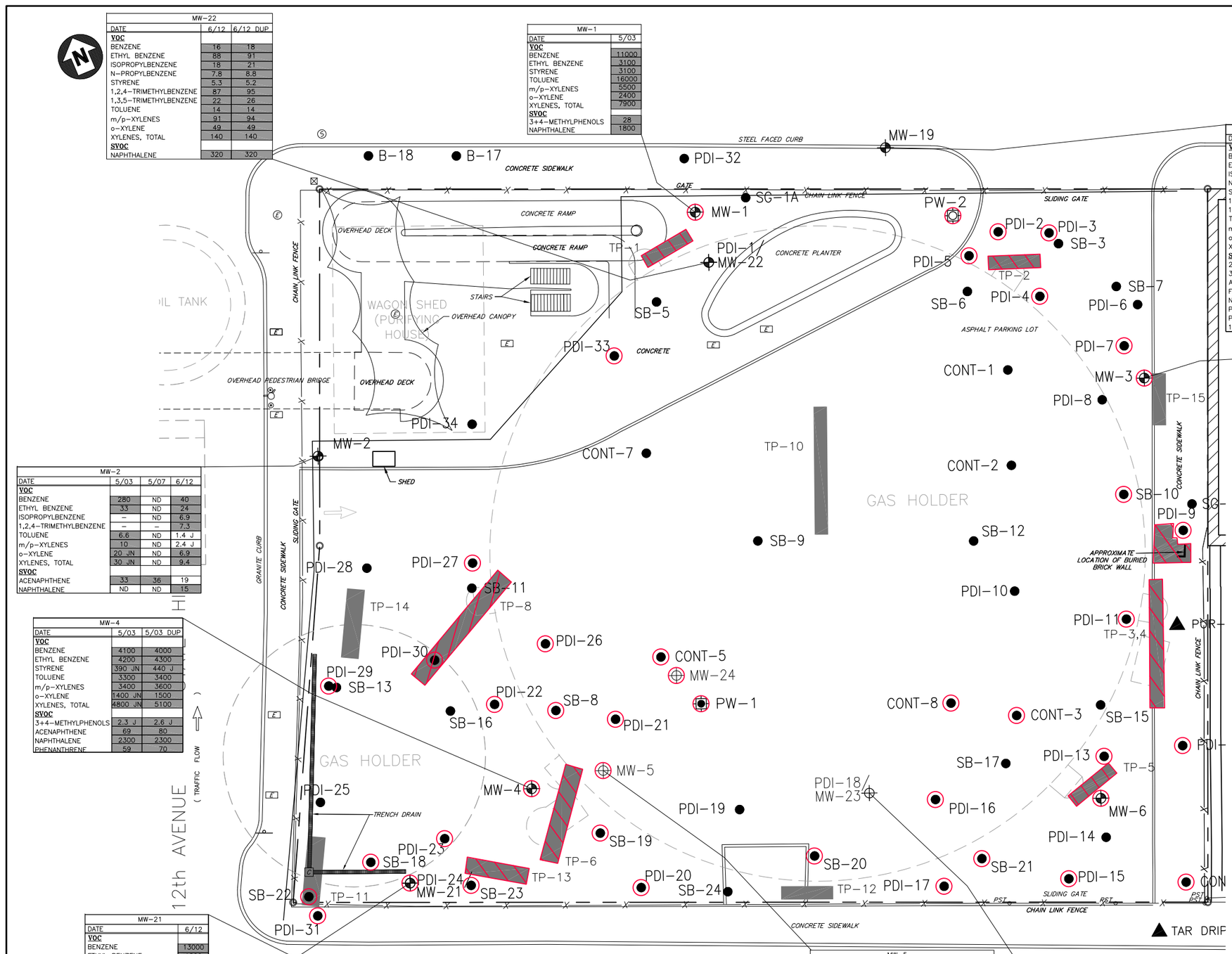
# FIGURE 15

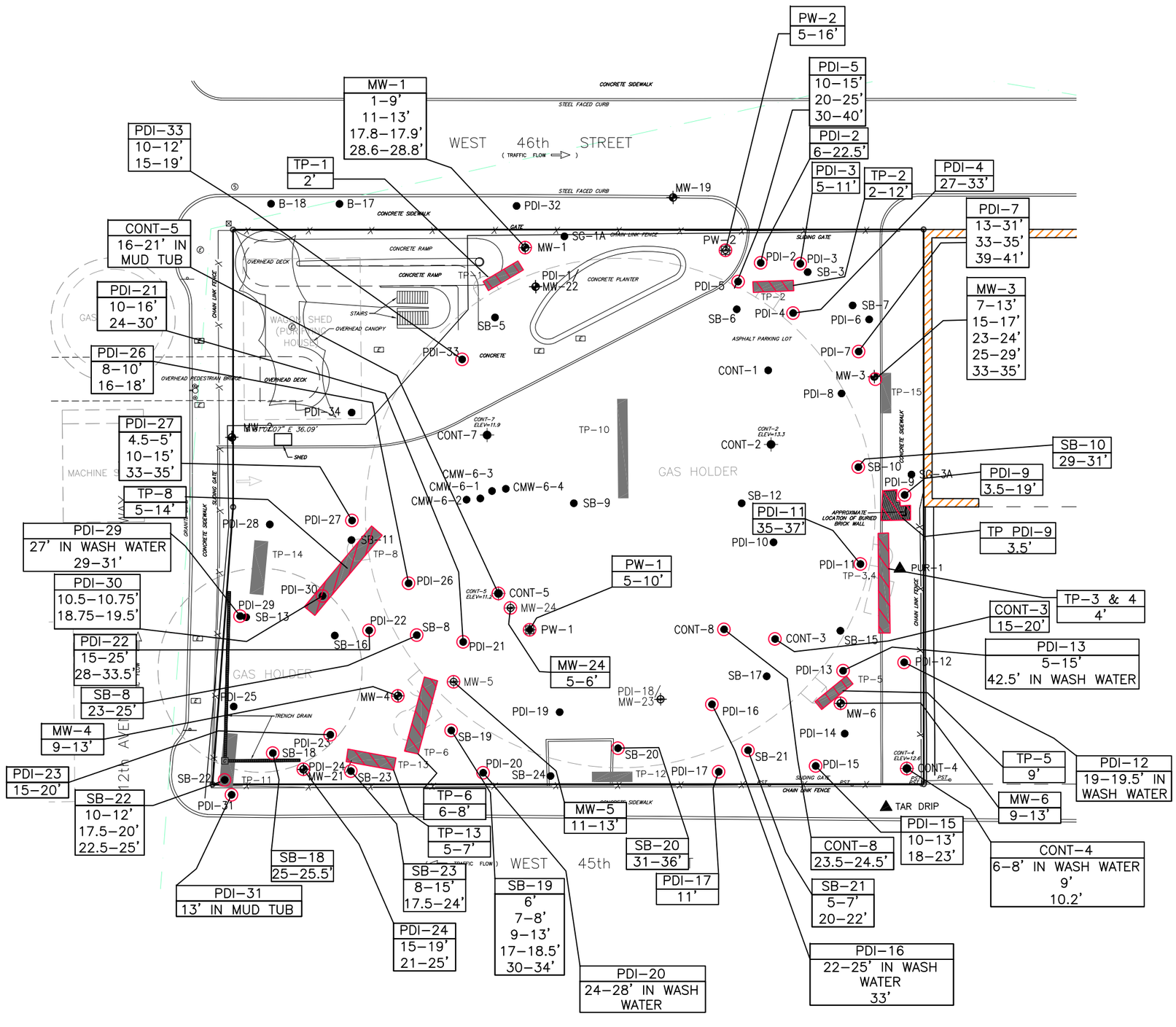
CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

## OU-2 PRE-DESIGN INVESTIGATION SUMMARY OF SVOCs IN SUBSURFACE SOIL EXCEEDING CSCOs

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732-537-3500

FILE NAME: P:\CONED\450089 – W45TH OU-2 AAR 2016\ENGR\AAR-FIGURES\450089-AAR-SK006.DWG
PLOT DATE: 5/14/2021 7:59 AM PLOTTED BY: RUSSO, JILL


B-18
B-17
PDI-32
MW-19
STEEL FACED CURB
CONCRETE SIDEWALK
GATE
SG-1A
CHAIN LINK FENCE
MW-1
PW-2
SLIDING GATE
CONCRETE RAMP
OVERHEAD DECK
CONCRETE RAMP
TP-1
PDI-1
MW-22
CONCRETE PLANTER
PDI-2
PDI-3
SB-3
PDI-5
TP-2
SB-6
PDI-4
SB-7
PDI-6
STAIRS
OVERHEAD CANOPY
SB-5
ASPHALT PARKING LOT
PDI-33
CONCRETE
PDI-7
CONT-1
MW-3
PDI-8
TP-15
OVERHEAD PEDESTRIAN BRIDGE
OVERHEAD DECK
PDI-34
MW-2
SHED
CONT-7
TP-10
CONT-2
SB-10
SG-
PDI-9
GAS HOLDER
SB-9
SB-12
APPROXIMATE LOCATION OF BURIED BRICK WALL
PDI-28
PDI-27
SB-11
TP-14
TP-8
PDI-10
PDI-11
TP-3,4
PDI-26
CONT-5
MW-24
PDI-30
PDI-29
SB-13
PDI-22
SB-8
PW-1
CONT-8
CONT-3
SB-15
SB-16
PDI-21
SB-17
PDI-13
TP-5
GAS HOLDER
MW-5
MW-4
PDI-25
PDI-18/
MW-23
PDI-16
MW-6
TRENCH DRAIN
PDI-19
SB-19
PDI-14
PDI-23
SB-18
TP-6
SB-20
SB-21
PDI-15
TP-13
PDI-24
PDI-20
SB-24
TP-12
PDI-17
SB-22
TP-11
MW-21
SB-23
SLIDING GATE
CHAIN LINK FENCE
PDI-31
CONCRETE SIDEWALK
12th AVENUE
( TRAFFIC FLOW )
CONCRETE SIDEWALK
GRANITE CURB
SLIDING GATE
CHAIN LINK FENCE
TAR DRIP
PDI-
CON
PDI-12
PDI-
PDI-
PDI-




LEGEND:

- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURES
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TEST PIT
- TEST PIT WITH AREA OF VISIBLE NAPL
- AREA OF VISIBLE NAPL (IN BORINGS OR MONITORING WELLS)
- ABANDONED MONITORING WELL (MW–24, MW–5, AND PDI–18/MW–23)
- ABANDONED PUMPING WELL
- EXISTING PUMPING WELL

| LOCATION ID |
| --- |
| DEPTH (IN FEET) OF VISIBLE NAPL ON SOIL OR ROCK UNLESS OTHERWISE NOTED |

NOTES:

1. BORINGS SB–1 THROUGH SB–24, TEST PITS TP–1 THROUGH TP–15, AND MONITORING WELLS MW–1 THROUGH MW–6 WERE INSTALLED DURING THE 2003 OU–2 SITE CHARACTERIZATION.
2. BORINGS PDI–1 THROUGH PDI–34, CONT–1 THROUGH CONT–5, CONT–7 AND CONT–8, MONITORING WELLS MW–21 THROUGH MW–24, AND PUMPING WELLS PW–1 AND PW–2 WERE INSTALLED DURING THE 2012 PDI.

40 20 0 40 80

SCALE: 1"=40'

# FIGURE 17

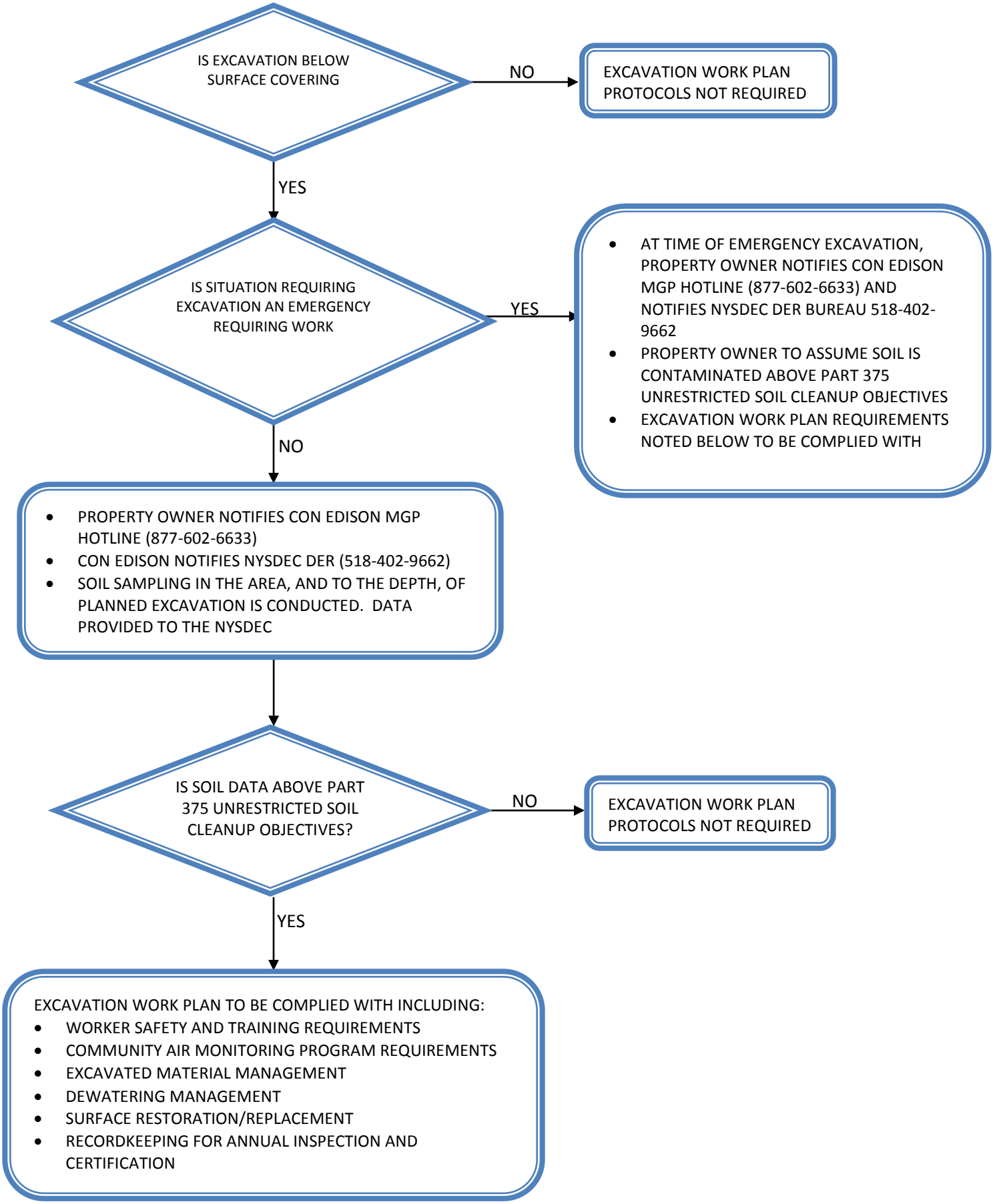
CONSOLIDATED EDISON OF NEW YORK
FORMER WEST 45th STREET GAS WORKS – OU2
NEW YORK, NEW YORK

## OU–2 PRE–DESIGN INVESTIGATION SUMMARY OF NAPL OBSERVATIONS

PARSONS
200 COTTONTAIL LANE, SOMERSET, N.J. 08873, PHONE: 732–537–3500

FILE NAME: P:\CONED\450089 – W45TH OU–2 AAR 2016\ENGR\AAR–FIGURES\450089–AAR–SK007.DWG
PLOT DATE: 5/14/2021 8:03 AM PLOTTED BY: RUSSO, JILL

**Figure 18**
**Former West 45th Street Gas Works Site**
**Interim Site Management Plan**
**INTRUSIVE ACTIVITIES GUIDELINES**



# APPENDIX A – ENVIRONMENTAL EASEMENT(S)

# APPENDIX B – LIST OF SITE CONTACTS

| Name | Phone/Email Address |
|---|---|
| Multiple Site Owners | Contact Remedial Party for Specific Parcel Information Contacts |
| Remedial Party<br>Maurice Hanashy – Consolidated Edison Company of New York | 201-249-2200<br>hanashym@coned.com |
| Qualified Environmental Professional and Remedial Engineer<br>Daniel Martoccia | 732-537-3557<br>daniel.martoccia@parsons.com |
| NYSDEC Project Manager<br>Greta White | 518-402-2029<br>greta.white@dec.ny.gov |
| NYSDEC Project Manager Supervisor<br>Amen Omorogbe | 518-402-9662<br>amen.omorogbe@dec.ny.gov |
| NYSDEC Site Control | TBD |
| NYSDOH Project Manager<br>Anthony Perretta | 518-402-7860<br>anthony.perretta@health.ny.gov |
| Remedial Party Attorney<br>Benjamin Tannen | 212-460-8418<br>tannenb@coned.com |

# APPENDIX C – SOIL BORING AND MONITORING WELL LOGS

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. MW-7** Sheet 1 of 1

**Contractor** ADT
**Driller:** Rudy Rios / Jeremy Meyers
**Inspector:** Sara M Chmura
**Rig Type:** Trac-Rig (DK-50)

**PROJECT NAME:** Consolidated Edison; W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** 12th Avenue; NY, NY (Between W. 44th & W. 45th Street)

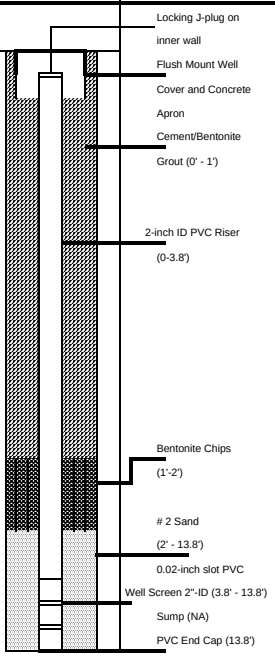
| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW 7.4' | | |
| Date | 02/18/06 | 3/9/06 | | |
| Time | | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Partly Cloudy, Cold, 20's; 30 mph wind (W)
**Date/Time Start:** 3/4/06 10:14
**Date/Time Finish:** 3/4/06 17:00

**Location Plan** N — See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | | Vac-tron | | | 0-8" = Concrete and wire mesh |
| 1 | | Vac-tron | | | 8-10" = Trap rock |
| 2 | | Vac-tron | | 0.0 | 10" - 5' = BRICK, COBBLE and BOULDERS, some dark brown FMC Sand; trace si |
| 3 | | Vac-tron | | | |
| 4 | | Vac-tron | | | |
| 5 | | 20-25-32-14 | NR | NR | No Recovery |
| 6 | | | | | |
| 7 | | 11-9-6-9 | 2 | 0.0 | Red BRICK, some F angular Gravel (brick in shoe) |
| 8 | | | | | |
| 9 | MW-7 (9'-11') | 50/5 | 20 | 5.2 | Wet, brown FM SAND, some micaceous fragments (hydrocarbon like odor, |
| 10 | | | | | |
| 11 | | Mud Rotary | NR | NR | No Recovery |
| 12 | | | | | |
| 13 | | | | | |
| | | | | | **End of boring @ 13.8' bgs, Roller bit refusal** |

**SCHEMATIC**




**COMMENTS**

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-11' bgs. / Mud Rotary to 13.8' bgs
HCN not detected in any interval.

**Contractor** Advanced Drilling Technology
**Driller:**
**Inspector:** Paul A. Kies/ Rakesh Singh/ Mike Tavakolian
**Rig Type:** Track rig

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO. MW-8** Sheet 1 of 1
**Location Description:**
W. 45th Street; NY, NY
UPS Parking Lot

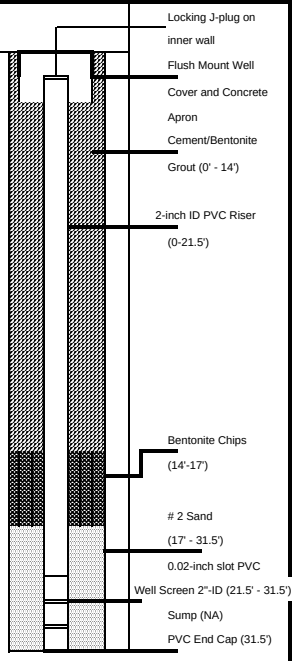
| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~9' | DTW 8.82' | | |
| Date | 03/07/06 | 03/09/06 | | |
| Time | | 12:30 | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Partly Cloudy, 60's 0-5 mph winds (W)
**Date/Time Start:** 03/07/06 10:00
**Date/Time Finish:** 03/07/06 16:00

**Location Plan**
N
See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | | Vac-tron | | | |
| 1 | | Vac-tron | | | 0-4" = Asphalt 4-8" = Concrete |
| 2 | | Vac-tron | | | 8-10" = Apshalt 10-12 = Concrete |
| 3 | | Vac-tron | | 0.0 | 12"-5' = Light brown FM SAND, some F angular Gravel, trace silt |
| 4 | | Vac-tron | | | |
| 5 | | 12-6-9-35 | 36 | 0.3 | Lightbrown/grey FM SAND, some Micaceous fragments, trace silt |
| 6 | | | | | |
| 7 | | 50/2 | 24 | 0.0 | Same as above interval with some angular gravel |
| 8 | | | | | |
| 9 | MW-8 (9'-11') | 12-10-12-12 | 40 | 6.3 | Dark grey ASH and CINDERS, some FC angular Gravel, |
| 10 | | | | | trace micaseous fragments, wood in shoe, cresol odor |
| 11 | | 25-35-19-37 | 24 | 2.3 | Grey/brown FM SAND, some F angular Gravel , micaceous fragments |
| 12 | | | | | cresol like odor |
| 13 | | Void | Void | Void | Void |
| 14 | | | | | |
| 15 | | Void | Void | Void | Void |
| 16 | | | | | |
| 17 | | 8-1-2-2 | | 0.0 | Rock in shoe |
| 18 | | | | | |
| 19 | | 15-15-9-8 | 24 | 0.3 | Grey/dark grey FM SAND, some micaceous fragments, trace FM angular rock |
| 20 | | | | | sewer like odor |
| 21 | | 15-14-14-15 | 32 | 0.3 | Same as above Interval |
| 22 | | | | | |
| 23 | | 11-10-12-12 | 28 | 0.2 | Same as above Interval with trace shell with brick fragments |
| 24 | | | | | |
| 25 | | 9-14-9-4 | 20 | 0.1 | Same as above with trace wood fragments |
| 26 | | | | | |
| 27 | | 2-4-7-37 | 4 | 0.0 | F angular GRAVEL, metal fragments, brick in shoe |
| 28 | | | | | |
| 29 | | 50/3 | 20 | 0.0 | Dark grey FM SAND, some Micaceous fragments, trace brick fragments |
| 30 | | | | | |
| 31 | MW-8 (31'-33') | 50/3 | 12 | 0.0 | Grey FM SAND, micaseous fragments, trace silt and F angular gravel |
| | | | | | **End of boring @ 31.5', Auger and spoon refusal** |

**SCHEMATIC**




**COMMENTS**

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-31.5' bgs.
HCN not detected in any interval.

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO** MW-9 — Sheet 1 of 1

**Contractor** Advanced Drilling Technology
**Driller:**
**Inspector:** Sara M Chmura/ Mike Tevakolian
**Rig Type:** Trac Rig

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 45th Street; NY, NY — UPS Parking Lot

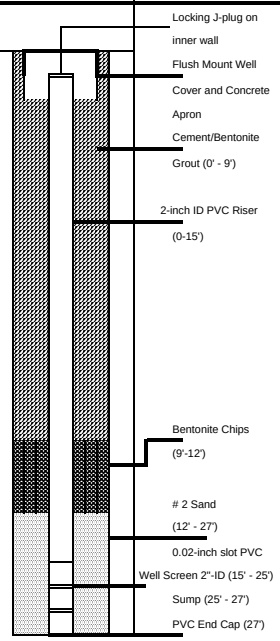
**Location Plan** — See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~11 | DTW 11' | | |
| Date | 02/10/06 | 03/8/06 | | |
| Time | | 8:15 | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Cold, 30's 0-5 mph winds (W)
**Date/Time Start:** 02/10/06 11:00
**Date/Time Finish:** 02/10/06 16:00

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | | Vac-tron | | | |
| 1 | | Vac-tron | | | 0-6" = Asphalt |
| 2 | | Vac-tron | | | 6-12" = Brown/light grey angular GRAVEL, FM Sand, brick fragments |
| 3 | | Vac-tron | | 0.0 | 1'-3' = BRICK, Cobbles, angular gravel, FM sand |
| 4 | | Vac-tron | | | 3'-5' = Bag of SAND |
| 5 | | 3-11-3-4 | 24 | 0.3 | 0-1.5" = Asphalt |
| 6 | | | | | 1.5"-24" = Sand fill from drillers |
| 7 | | 3-11-2-4 | 8 | 0.0 | SAND fill, Gravel, quartz fragments |
| 8 | | | | | |
| 9 | | 3-4-3-4 | 2 | 0.0 | Dark brown/ black F SAND, some Silt, F subangular gravel, |
| 10 | | | | | organic odor |
| 11 | | 2-2-1-2 | 4 | 0.0 | Lightbrown SAND, some Silt, trace light F angular gravel, mica fragments |
| 12 | | | | | |
| 13 | | Woh-Woh-Woh-3 | 80 | 0.4 | 0-18" = F SAND, some Silt, trace brick fragments |
| 14 | | | | | 18-24" = Brown.black model CLAY, trace F sand, mica fragments, sulhur like odor |
| 15 | | 3-8-9-7 | 64 | 0.7 | 0-0.5"= CLAY 5"-23"= F brown SAND, some angular Gravel, |
| 16 | | | | | 23"-24" = Red F SAND, with F angular Gravel, sulphur like odor |
| 17 | | 6-5-7-4 | 60 | 2.0 | Red brown F SAND, little Silt, trace F angullar gravel, |
| 18 | | | | | |
| 19 | | 5-17-9-15 | 68 | 2.0 | Brown F SAND, hydro carbon like odor |
| 20 | | | | | |
| 21 | MW-9 (21'-23') | 3-7-11-4 | 96 | 42.0 | NAPL saturated, brown FM SAND, trace F angular Gravel, strong hydrocarbon |
| 22 | | | | | like odor, rain bow sheen |
| 23 | | - | 64 | 34.2 | 0-10" = Same as above Interval with spotty NAPL 'pockets' |
| 24 | | | | | 10-18" = Red/brown F SAND, silt lenses, M angular gravel, bedrock fragments in shoe |
| 25 | MW-9 (25'-27') | 10-17-15-19 | 72 | 23.0 | Wet, Red/ brown F SAND, little Silt, grey dry-moist FM sand, F angular gravel, |
| 26 | | | | | Rock fragments, slight hydrocarbon like odor |
| | | | | | **End of boring @ 27' bgs, Auger and spoon refusal** |

**SCHEMATIC**




**COMMENTS**

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-27' bgs.
HCN not detected in any interval.

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies /Mike Tavakolian
**Rig Type:** Trac- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** Sheet 1 of 1 **MW-10 (SB-46)**
**Location Description:** W. 44th Street (North Side), NY, NY

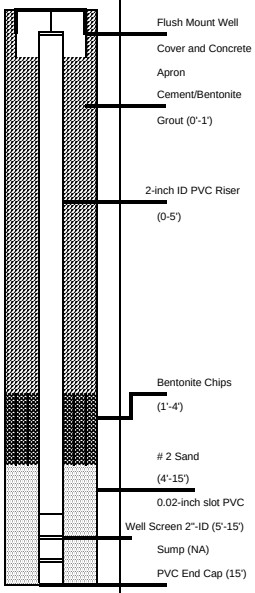
| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~9' | DTW 9.5' | | |
| Date | 03/23/06 | 03/24/06 | | |
| Time | | 12:20:00 PM | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Cold, Sunny, 30's , 10-15 mph winds (W)
**Date/Time Start:** 03/23/06 09:30
**Date/Time Finish:** 03/23/06 13:00

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| +3 | | | | | |
| | | | | | |
| +2 | | | | | |
| | | | | | |
| +1 | | | | | |
| | | | | | |
| 0 | | Vac-tron | | | 0-8" = Concrete |
| 1 | | Vac-tron | | | 8"-12" = Light brown, dry, FM SAND, some subangular Gravel, silt, no odor |
| 2 | | Vac-tron | | | 1'-3' = Same as above Interval with trace silt |
| 3 | | Vac-tron | | | 3'-5' = Same as above Interval |
| 4 | | Vac-tron | | | |
| 5 | | 8-11-13-9 | 32 | 0.0 | Light brown, FM SAND, some angular Gravel, trace silt |
| 6 | | | | | |
| 7 | | 6-7-4-3 | 56 | 1.7 | Light brown, FM SAND, trace silt, micaceous fragments, |
| 8 | | | | | Black FM sand in shoe |
| 9 | | 5-4-3-3 | 60 | 3.2 | Dark brown/ light brown FM SAND, some Silt, trace angular gravel, |
| 10 | | | | | organic odor |
| 11 | SB-46 (11'-13') | 9-9-11-10 | 60 | 7.3 | 0'-8" = Brown/light brown FM SAND |
| 12 | | | | | 8"-12" = Red Brown FM SAND, trace Silt |
| 13 | SB-46 (13'-15') | 33-50/3 | 32 | 6.5 | Red/Brown FM SAND, trace Silt, weathered rock |
| 14 | | | | | |
| 15 | | 17-33-50/3 | 20 | 0.0 | Grey F angular GRAVEL, schist fragments, weathered rock |
| | | | | | **End of boring @ 15' bgs, Auger refusal** |

**SCHEMATIC** (drawing not to scale)




**COMMENTS**

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-15' bgs.
HCN not detected in any interval.

**Contractor** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.** MW-11 Sheet 1 of 1
**Location Description:** Consolidated Edison, W. 45th Street

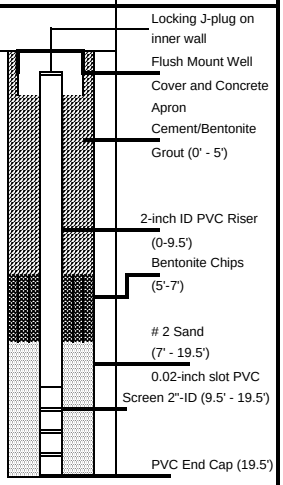
| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' bgs | | | |
| Date | 3/2/07 | | | |
| Time | 1000 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Rain, 30-40's; 5-10 mph wind (NE).
**Date/Time Start:** 3/2/07 0940
**Date/Time Finish:** 3/2/07 1430

**Location Plan**
See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | | | | | |
| | | | HC | | 0-7" = Concrete. |
| 2 | | | HC | | 7"-5' = Brown to dark brown; cmf SAND, cmf gravel, trace silt; concrete and brick fragments. |
| | MW-11 (3.5'-4') | | HC | | |
| 4 | | | HC | | |
| | | | HC | | |
| 6 | | | | | Drilled to 6' bgs. |
| | | 1-2-2-3 | 88 | 1.6 | Brown; f SAND, little silt, some mf gravel (0-16"). |
| 8 | | | | | Gray; cmf SAND (16-21"). |
| | MW-11 (8'-10') | 1-2-10-10 | 38 | 7.8 | Gray; f SAND, little silt (0-5"). |
| 10 | | | | | Gray brown; SILT (5-9"). |
| | | 1-1-6-7 | 33 | 6.4 | Gray to brown; SILT; mottled. |
| 12 | | | | | |
| | | 12-12-12-13 | 100 | 2.6 | Gray; f SAND, and silt (0-18"). |
| 14 | | | | | Brown; SILT (18-24"). |
| | | 1-6-6-6 | 75 | 0.9 | Brown; SILT (0-16"). |
| 16 | | | | | Brown to gray; SILT; f sand seams (16-18"). |
| | | 6-6-14-16 | 71 | 1.0 | Brown to gray brown; SILT (0-14"). |
| 18 | | | | | Gray; mf SAND (14-17"). |
| | MW-11 (18'-20') | 12-13-15-15 | 63 | 0.7 | Brown; SILT (0-3"). |
| 20 | | | | | Gray; mf SAND (3-15"). |
| | | 50/3 | NR | NR | No Recovery. |
| 22 | | | | | |
| | **End of Boring @ 20' bgs** | | | | |
| 24 | | | | | |
| 26 | | | | | |
| 28 | | | | | |
| 30 | | | | | |
| 32 | | | | | |
| 34 | | | | | |
| 36 | | | | | |

**SCHEMATIC**




**COMMENTS**

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 20' bgs. Bedrock @ 20' bgs.
Hand cleared to 5 feet.
Hydrocarbon-like odor noted throughout boring. Odor diminished with depth.

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.** Sheet 1 of 1 **MW-12**
**Location Description:** Consolidated Edison, W. 45th Street

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 3/2/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Rain, 30-40's; 5-10 mph wind (NE).
**Date/Time Start:** 3/2/07 0800
**Date/Time Finish:** 3/2/07 0915

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-5" = Concrete/wire mesh. | | |
| 1 | | | HC | | 5"-9" = Trap rock. | | |
| 3 | | | HC | 0.0 | 9"-4' = Light Brown; mf SAND, some silt. | SM | |
| 5 | | | HC | 0.0 | 4'-6' = Brown to orange brown; mf SAND, some silt. | | |
| 4 | | | HC | | | | |
| 5 | | | HC | | | | |
| 6 | | 1-1-1-7 | 25 | 0 | Brown; f SAND, trace mf gravel, trace silt; micaceous. | SP | |
| | | | | | | | |
| 8 | MW-12 (8'-10') | 10-50/3 | 38 | 0 | Brown; SILT, little clay; micaceous. White Quartzite in tip of splitspoon. | ML | |
| | | | | | | BEDROCK | Possible |
| 10 | | | | | **End of Boring @ 9' bgs** | | |
| | | | | | | | |
| 12 | | | | | | | |
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| 14 | | | | | | | |
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| 16 | | | | | | | |
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| 20 | | | | | | | |
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**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 9' bgs. Bedrock @ 9' bgs.
Hand cleared to 6 feet.
Due to lack of water in boring location, monitoring well was not installed.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. MW-13** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 2/27/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Sleet/Rain/Snow, 30's; 0-5 mph wind (W).

**Date/Time Start:** 2/27/07 0730

**Date/Time Finish:** 2/27/07 1000

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-5" = Concrete/wire mesh. | | |
| 1 | | | HC | | 5"-6" = Trap rock. | | |
| 2 | | | HC | 0.0 | 6"-16" = Gray; Ash/Cinders; cmf sand, cmf gravel (angular), trace silt; shell fragment | FILL | |
| 3 | | | HC | 0.0 | 16"-5' = Brown to orange brown; mf SAND, some cmf gravel (angular); cobbles, bric | | |
| 4 | | | HC | | fragments. | | |
| 5 | | | | | Drilled through rubble and boulders to 11' bgs | | |
| | | | | | | | |
| 7 | | | | | | | |
| | | | | | | | |
| 9 | | | | | | | |
| | | | | | | | |
| 11 | | 50/1 | 0 | 0.0 | Rock in tip of splitspoon (white quartzite). | BEDROCK | Possible |
| | | | | | | | |
| 13 | | | | | **End of Boring @ 11' bgs** | | |
| | | | | | | | |
| 15 | | | | | | | |
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| 17 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 11' bgs. Bedrock @ 11' bgs.
Hand cleared to 5 feet.
Due to lack of water in boring location, monitoring well was not installed.

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO. MW-14** Sheet 1 of 1

**Location Description:**
Consolidated Edison
W. 45th Street

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 2/28/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Sunny, 40's; 0-5 mph wind (W).
**Date/Time Start:** 2/28/07 0735
**Date/Time Finish:** 2/28/07 1000

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-4" = Concrete. | | |
| 1 | | | HC | | 4"-5" = Trap rock. | | |
| 2 | | | HC | 0.0 | 5"-9" = Gray; cmf SAND, cmf gravel (angular); ash/cinders; brick fragments, shell | FILL | |
| 3 | | | HC | | fragments. | | |
| 4 | | | HC | 0.0 | 9"-5' = Brown; mf SAND, some silt, little cmf gravel (rounded). | | |
| 5 | MW-14 (7'-9') | 2-6-2-2 | 50 | 0 | Brown to orange brown; mf SAND, some silt, trace f gravel; micaceous. | SM | |
| | | | | | | | |
| 7 | | 1-13-3-50/3 | 29 | 0 | Brown; f SAND, little clay. | SC | |
| | | | | | | | |
| 9 | | 50/1 | 0 | | Rock in tip of splitspoon (white quartzite). | BEDROCK | Possible |
| | | | | | | | |
| 11 | | | | | **End of Boring @ 9' bgs** | | |
| | | | | | | | |
| 13 | | | | | | | |
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| 15 | | | | | | | |
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| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 9' bgs. Bedrock @ 9' bgs.
Hand cleared to 5 feet.
Due to lack of water in boring location, monitoring well was not installed.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. MW-15** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street (Bikepath)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~7' bgs | | | |
| Date | 4/26/07 | | | |
| Time | 0800 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Cool, overcast, 50's; 0-5 mph wind (W)

**Date/Time Start:** 4/26/07 0730

**Date/Time Finish:** 4/26/07 1045

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-8" = Apshalt and trap rock | | |
| 1 | | | HC | 0.0 | 8" - 4' = Brown fmc SAND, some fc Gravel (rounded/subangular), trace silt | FILL | |
| 2 | | | HC | | 4' - 5.5' = Brown, f SAND, little silt and fc gravel (wet @ 5' bgs) | | |
| 3 | | | HC | | | | |
| 4 | | | HC | 0.0 | 4' - 5.5' = Brown, f SAND, little silt and fc gravel (wet @ 5' bgs) | | |
| 5 | | | HC | | | | |
| | | | AIR | | 5.5' - 6.5' = Same as above interval | | |
| 7 | MW-15 (7-9') | 4-3-2-4 | 20 | 0 | Wet, brown FM SAND, some Brick fragments and fc angular gravel (schist); little sil | FILL | |
| | | | | | | | |
| 9 | | 3-6-50/3 | NR | - | Weathered rock in tip of shoe | | |
| | | | | | | BEDROCK | Possible |
| 11 | | | | | **End of Boring @ 10.5' bgs** | | |
| | | | | | | | |
| 13 | | | | | | | |
| | | | | | | | |
| 15 | | | | | | | |
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| 17 | | | | | | | |
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| 31 | | | | | | | |
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| 33 | | | | | | | |
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| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Hand cleared to 6.5' bgs. Used air knife from 5.5'- 6.5' bgs
Due to limited water in boring location, monitoring well was not installed
Auger/split spoon refusal at 10.5' bgs, possibly bedrock. HCN not detected

**Contractor** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul A. Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.MW-16** Sheet 1 of 1

**Location Description:**
W. 45th Street; NY, NY
Bikepath

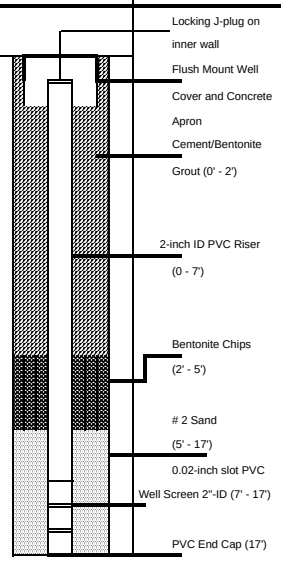
**Location Plan** N
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~7' bgs | DTW 10.45' | | |
| Date | 4/26/07 | 5/22/07 | | |
| Time | | | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Rainy, cool, 50's; 0-5 mph wind (W)
**Date/Time Start:** 4/26/07 1030
**Date/Time Finish:** 4/26/07 1315

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | | | | | |
| | | Vac-tron | | | 0-3" = Asphalt |
| 1 | | Vac-tron | | | 3-8" = Trap rock |
| | | Vac-tron | | 0.0 | 8"- 4' = Brown fmc SAND, some fc Gravel (round/subrounded); trace silt, |
| 3 | | Vac-tron | | | concrete, brick, |
| | | Vac-tron | | 0.0 | 4'-6' = Moist, brown f SAND, little fc Gravel, little silt |
| 5 | | Vac-tron | | | |
| | | Vac-tron | | | |
| 7 | | - | - | - | Drilled down to 7' bgs |
| | | 2-7-23-7 | 29 | 0.0 | Wet, white GRANITE; Schist fragments in shoe |
| 9 | | | | | |
| | | 2-7-11-21 | 66 | 0.0 | Wet, Brown fmc SAND, some fc angular Gravel/schist fragments |
| 11 | | | | | |
| | | 9-8-18-11 | 16 | 0.0 | Same as above interval with some quartzite fragments |
| 13 | | | | | |
| | | 11-12-13-14 | 20 | 0.0 | Dark grey fm SAND, some brown fm sand |
| 15 | | | | | |
| | MW-16 (15-17') | 11-17-60-20 | 41 | 1.3 | Dark grey/olive fm SAND, some fc angular Gravel; trace silt |
| 17 | | | | | (slight hydrocarbon like odor) |
| | MW-16 (17-15') | 20-50/1 | 16 | 1.0 | Same as above interval (weathered rock in tip of spoon) |
| 19 | | | | | |
| | | | | | **End of boring @ 17.5' bgs** |
| 21 | | | | | |
| 23 | | | | | |
| 25 | | | | | |
| 27 | | | | | |
| 29 | | | | | |
| 31 | | | | | |
| 33 | | | | | |
| 35 | | | | | |

**SCHEMATIC**




**COMMENTS**

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Boring was hand cleared to 6' bgs;
Hollow Stem Augers used from 7'-17.5' bgs. Possible bedrock @ 17.5' bgs
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. MW-17** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 3/1/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Partly Cloudy, 40's; 0-5 mph wind (W).

**Date/Time Start:** 3/1/07 0750

**Date/Time Finish:** 3/1/07 1000

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-5" = Asphalt. | | |
| 1 | | | HC | 0.0 | 5"-9" = Brown; cmf SAND, some cmf gravel (angular). | | |
| 2 | | | HC | 0.0 | 9"-5' = Brown to orange brown; mf SAND, some cmf gravel to boulders (angular to | FILL | |
| 3 | | | HC | | rounded), trace silt. | | |
| 4 | | | HC | | | | |
| 5 | MW-17 (5'-7') | 50/6 | 29 | 0 | Brown to orange brown; mf SAND, some gravel; micaceous. Weathered rock in tip o | SP | |
| 6 | | 50/1 | 4 | | spoon. WEATHERED ROCK. | BEDROCK | Possible |
| 7 | | | | | **End of Boring @ 6' bgs** | | |
| 9 | | | | | | | |
| | | | | | | | |
| 11 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Split-spoons attempted at 5'-7' and 6'-8'. Auger and split spoon refusal @ 6' bgs. Bedrock @ 6' bgs.
Hand cleared to 5 feet.
Due to lack of water in boring location, monitoring well was not installed.

**Contractor:** Advanced Drilling Technology
**Driller:** Tony Palomeque / Joe McGill
**Inspector:** Scott Dillman
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.** MW-18 Sheet 1 of 1

**Location Description:**
W. 45th Street; NY, NY
(W. 46th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 5/7/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Clear, warm, 60's; 0-5 mph wind (W)
**Date/Time Start:** 5/7/07 1130
**Date/Time Finish:** 5/7/07 1230

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-3" = Asphalt. | | |
| 1 | | Vac-tron | | 0.0 | 3"-5' = Light Brown, fmc SAND, trace fc gravel and silt | | |
| 2 | | Vac-tron | | | | FILL | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | Vac-tron | | | | | |
| 6 | MW-18 (5'-7') | 10-11-9-9 | 75 | 0.0 | Brown fm SAND, some Mica/Schist fragments and Silt, little clay | | |
| 7 | | | | | (slight organic and creosol like odor) | BEDROCK | Possible |
| | | | | | **End of Boring @ 7' bgs** | | |
| 9 | | | | | | | |
| | | | | | | | |
| 11 | | | | | | | |
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| 13 | | | | | | | |
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| 35 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Split spoon refusal at 7' bgs, possible bedrock. No gw observed. No monitoring well installed.
HCN not detected in any interval. Duplicate sample collected @ 5-7' interval

**Contractor** Advanced Drilling Technology
**Driller:** Tony Palomeque / Joe McGill
**Inspector:** Scott Dillman
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.MW-19** Sheet 1 of 1

**Location Description:**
W. 45th Street; NY, NY
(W. 46th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~9' bgs | DTW 6.22' | | |
| Date | 5/7/07 | 5/22/07 | | |
| Time | | | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Clear, warm, 60's; 0-5 mph wind (W)

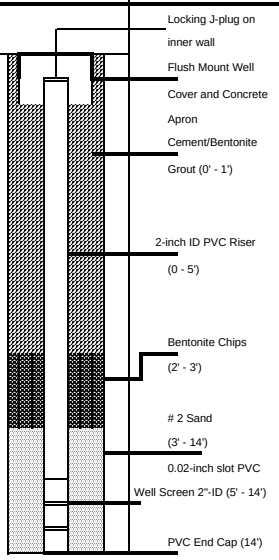
**Date/Time Start:** 5/7/07 0900

**Date/Time Finish:** 5/7/07 1130

**Location Plan**

N

See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | | | | | |  | Locking J-plug on inner wall |
| | | Vac-tron | | | 0-7" = Concrete and wire mesh | | Flush Mount Well |
| 1 | | Vac-tron | | | 7-8" = Subase/aggregate | | Cover and Concrete Apron |
| | | Vac-tron | | | 8"-23" = Concrete | | |
| 3 | | Vac-tron | | 0.0 | 23" - 5' = Brown fm SAND, some fc smooth/angular Gravel; little silt | | Cement/Bentonite Grout (0' - 1') |
| | | Vac-tron | | | | | |
| 5 | | Vac-tron | | | | | |
| | | 3-3-3-3 | 83 | 0.0 | Moist, tan fmc SAND, black/dark grey @ bottom 6" | | |
| 7 | | | | | (organic like odor) | | 2-inch ID PVC Riser (0 - 5') |
| | | 4-2-3-2 | 50 | 54.0 | Tan f SAND, black stain @ bottom | | |
| 9 | | | | | | | |
| | MW-19 (9-11') | 2-2-3-1 | 100 | 324 | Grey/tan fm SAND; with bottom 1/2 black stain, wet and hydrocarbon like odor | | Bentonite Chips (2' - 3') |
| 11 | | | | | | | |
| | | 12-15-11-14 | 83 | 159 | 0-6" = Same as above interval; 6-16" = Red silt, some fm sand, little f gravel, | | |
| 13 | | | | | trace clay-till; 16-20" = Weathered mica schist | | # 2 Sand (3' - 14') |
| | MW-19 (13-15') | 3-50/1.5 | 25 | 45 | No Recovery | | |
| 15 | | | | | | | |
| | | | | | **End of boring @ 14' bgs** | | 0.02-inch slot PVC Well Screen 2"-ID (5' - 14') |
| 17 | | | | | | | |
| | | | | | | | |
| 19 | | | | | | | PVC End Cap (14') |
| | | | | | | | |
| 21 | | | | | | | |
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| 23 | | | | | | | |
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| 25 | | | | | | | |
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| 27 | | | | | | | |
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| 29 | | | | | | | |
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| 31 | | | | | | | |
| | | | | | | | |
| 33 | | | | | | | |
| | | | | | | | |
| 35 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-14' bgs. Auger and split spoon refusal at 14'bgs, possible bedrock
HCN not detected in any interval. MS/MS sample collected @ 9-11' interval

**Contractor** Advanced Drilling Technology
**Driller:** Tony Palomeque / Joe McGill
**Inspector:** Paul A. Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.MW-20** Sheet 1 of 1

**Location Description:** W. 45th Street; NY, NY (W. 44th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~9' bgs | DTW 10.80' | | |
| Date | 5/8/07 | 5/22/07 | | |
| Time | 0930 | | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Clear, warm, 60's-70's; 0-5 mph wind (W)

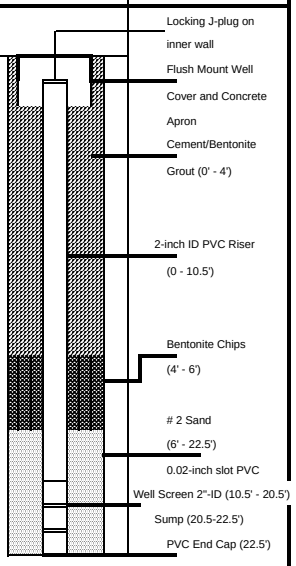
**Date/Time Start:** 5/8/07 0830

**Date/Time Finish:** 5/8/07 1100

**Location Plan**

N

See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | | | | | |  | |
| | | Vac-tron | | | 0-4" = Concrete | | |
| 1 | | Vac-tron | | 0.0 | 4" - 2' = Dark brown, fmc SAND, little silt, fc gravel, cobble and boulders | | |
| | | Vac-tron | | 0.0 | 2' -2.5' = SILT, some Mica fragments, little fc gravel | | |
| 3 | | Vac-tron | | 0.0 | 2.5' - 5' = Dark brown, fmc SAND, little silt, fc gravel, cobble and boulders | | |
| | | Vac-tron | | | | | |
| 5 | | Vac-tron | | | | | |
| | | - | - | - | Drilled down to 7' bgs, due to boulders and rubble | | |
| 7 | | | | | | | |
| | | 5-5-3-2 | NR | NR | No Recovery | | |
| 9 | | | | | | | |
| | | 4-4-3-4 | 79 | 0 | 0-9" = Wet, brown fm SAND; trace silt | | |
| 11 | | | | | 9-19" =Black, stained fm SAND, little f angular gravel; trace silt (hydrocarbon like odor | | |
| | | 3-2-7-8 | 75 | 31.4 | 0-16" = Same as 9-19" from above interval | | |
| 13 | | | | | 16" -18" = Quartzite and NAPL Globules | | |
| | | 4-4-7-8 | 41 | 36.5 | Light grey/brown/green CLAY/SILT, some f Gravel (smooth) and c Sand | | |
| 15 | | | | | (strong hydrocarbon like odor) | | |
| | MW-20 (15-17') | 7-9-4-4 | 83 | 214.0 | 0-14" = Same as above interval with little NAPL seems | | |
| 17 | | | | | 14-20" = Red/brown fm SAND; trace silt (NAPL/saturated) | | |
| | | 5-5-4-7 | 41 | 40.2 | 0-2" = Same as 14-20" above | | |
| 19 | | | | | 2 - 10" = Reddish/brown CLAY/SILT, little f smooth gravel (Not NAPL Saturated | | |
| | | 6-7-7-8 | 58 | 100.0 | Red/brown FM SAND, brown NAPL seam throughout spoon | | |
| 21 | | | | | | | |
| | MW-20 (21-23') | 9-8-9-12 | 50 | 688.0 | Same as above interval (heavy NAPL saturated seams throughout spoon) | | |
| 23 | | | | | | | |
| | MW-20 (23-25') | 9-50/4 | 41 | 32.8 | 0-6" = Same as above interval | | |
| 25 | | | | | 6-10"= Green CLAY/SILT (quartzite in shoe) | | |
| | | | | | **End of boring @ 23.5' bgs** | | |
| 27 | | | | | | | |
| 29 | | | | | | | |
| 31 | | | | | | | |
| 33 | | | | | | | |
| 35 | | | | | | | |



**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-23.5' bgs. Auger and split spoon refusal at 23.5' bgs, possible bedrock
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB-25 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** Mini-Vac

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not observed | | | |
| Date | 2/21/07 | | | |
| Time | | | | |
| Meas. From | | | | |

**Weather:** Clear, 40's; 0-5 mph wind (W).
**Date/Time Start:** 2/21/07 1115
**Date/Time Finish:** 2/21/07 1500

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-5" = Concrete and trap rock. | FILL | |
| 1 | | | HC | 0.0 | 5"-2' = Gray; cmf SAND, some cmf gravel (angular); shell fragments. | BEDROCK | Possible |
| | | | | | **End of Boring @ 2' bgs** | | |
| 3 | | | | | | | |
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| 5 | | | | | | | |
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| 35 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Refusal @ 2' bgs (attempted hand clearance at three locations, all had refusal between 13"-2'). Possible bedrock @ 2' bgs.

**Contractor** ADT
**Driller:** Rudy Rios / Chris Stratton
**Inspector:** Paul Kies / Rakesh Singh
**Rig Type:** Trac-Rig (DK-50)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB -26 Sheet 1 of 1
**Location Description:**
W. 45th Street, NY, NY
(South Side of W. 45th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~5' | | | |
| Date | 03/06/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 40's; 0-5 mph wind (W)
**Date/Time Start:** 3/6/06 09:20
**Date/Time Finish:** 3/6/06 12:10

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | | | 0'-4" = Concrete, 4-5" Trap rock | | |
| 1 | | Vac-tron | | 0.0 | 5" - 2'= Brown FM SAND, some F angular Gravel, trace silt | | |
| 2 | | Vac-tron | | 0.0 | | | |
| 3 | | Vac-tron | | 0.0 | Light brown FC SAND, some smooth F Gravel; wet @ 5' bgs | | |
| 4 | | Vac-tron | | 0.0 | | | |
| 5 | | 16-29-50/4 | 50 | 0.0 | 0-8" = Greenish Grey F SANDY/SILT | | |
| 6 | SB-26 (5'-7') | | | | 8-12" = Red brown FM SAND, some silt (rock in shoe) | | |
| 7 | | 50/1 | 4 | 0.0 | Dark Grey F angular GRAVEL, some FM Sand (weathered rock) | | |
| | | | | | **End of Boring @ 6.5' bgs, Auger and split spoon refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-6.5' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 27 Sheet 1 of 1
**Location Description:** W. 45th Street

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' | | | |
| Date | 02/15/06 | | | |
| Time | 1200 | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 50's, 0-5 mph (W)
**Date/Time Start:** 02/15/2006 09:00
**Date/Time Finish:** 02/15/2006 15:00

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | |  | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 8" - 5' = Light grey / brown FM SAND, some FC angular Gravel | | |
| 2 | | Vac-tron | | | boulder and cobble (schist) located @ ~4' bgs, along with concrete | | |
| 3 | | Vac-tron | | | wall ~4' bgs on north side of 2'X2' hand clearance hole | | |
| 4 | | Vac-tron | | | | | |
| 5 | | NA | NR | NA | No recovery | | |
| 6 | | | | | | | |
| 7 | | NA | NR | NA | No recovery | | |
| 8 | | | | | | | |
| 9 | SB-27 (9'-11') | 20-30-64-18 | 24 | 0.0 | Light Grey FM SAND, weather Rock, wet. | | |
| 10 | | | | | | | |
| 11 | | 26-28-13-10 | 24 | 0.1 | Same as above Interval | | |
| 12 | | | | | | | |
| 13 | | 2-4-2-2-20 | 32 | 0.0 | 0-6" Dark brown FM SAND, little fine Angular gravel | | |
| 14 | | | | | 6-8" WOOD , Weathered rock tip, sewer like smell | | |
| 15 | SB-27 (15'-17') | 12-50-1 | 40 | 0.1 | Grey FM SAND, some Angular Gravel, trace grey silt and wood | | |
| 16 | | | | | organic like odor | | |
| | | | | | **Refusal @ 15.5' bgs, Auger and spoon refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-15.5' bgs.
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB - 28 Sheet 1 of 1

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' | | | |
| Date | 02/16/2006 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 50's, 0-5 mph (W)

**Date/Time Start:** 02/16/2006 09:00

**Date/Time Finish:** 02/16/2006 15:00

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 8" - 5' = Light Grey / brown FM SAND, some FC Angular Gravel | | |
| 2 | | Vac-tron | | | boulder and cobble (schist) located @ ~4' bgs, along with concrete | | |
| 3 | | Vac-tron | | | wall ~4' bgs on north side of 2'X2' hand clearance hole | | |
| 4 | | Vac-tron | | | | | |
| 5 | | | | | | | |
| 6 | | 100-6-1 | NR | NA | No recovery | | |
| 7 | | | | | | | |
| 8 | | 4-5-7-11 | NR | NA | No recovery | | |
| 9 | | | | | | | |
| 10 | | 20-26-25 | NR | NA | No recovery | | |
| 11 | | | | | | | |
| 12 | | 8-11-50/3 | 4 | 0.0 | Rock on top of spoon | | |
| 13 | | | | | | | |
| 14 | | 18-50/1 | 4 | 0.8 | Brown, FM SAND, some Wood fragments, trace silt | | |
| 15 | | | | | | | |
| 16 | | 12-18-23-29 | 4 | 1.0 | Grey FM SAND, grey Angular gravel, trace silt | | |
| 17 | | | | | | | |
| 18 | | 7-8-11-50/1 | NR | NR | No recovery | | |
| | | | | | **Refusal @ 19' bgs, Auger and spoon refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-19' bgs.
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB - 29 Sheet 1 of 1

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies
**Rig Type:** Truck- Rig (CME-75)

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 02/14/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny 30-40°F

**Date/Time Start:** 02/14/06 09:30

**Date/Time Finish:** 02/14/06 15:00

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 6" -5' = Brown FM SAND, some Cobbles, boulders and FC angular gravel | | |
| 2 | | Vac-tron | | | | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 5-6-5-6 | 24 | 14.8 | 0-3" FC Angular GRAVEL, micaceous Gravel | | |
| 6 | | | | | 4-12" Black MC SAND, Brick fragments, hydrocarbon like odor | | |
| 7 | SB-29 (7'-9') | 3-6-3-8 | 16 | 29.9 | Black/dark brown M SAND, some trace Angular gravel | | |
| 8 | | | | | hydrocarbon like odor | | |
| 9 | | 3-4-9-5 | 12 | 19.9 | Black F to M SAND, some F Angular gravel, trace silt, | | |
| 10 | | | | | brick fragments, hydrocarbon like odor | | |
| 11 | SB-29 (11'-13') | 8-9-17-9 | 16 | 48.6 | Black F angular GRAVEL, some FMC sand and some silt, | | |
| 12 | | | | | hydrocarbon like odor | | |
| 13 | SB-29 (13'-15') | 3-4-6-50/2.4 | 28 | 10.0 | 0-3" Same as above Interval | | |
| 14 | | | | | 3-12" Brown F SAND, little Clay, some fine angular gravel, some silt | | |
| 15 | | 0/50 | NR | NA | Black shillings in spoon | | |
| | | | | | **End of boring @ 14.8' bgs, Auger refusal on metal bottom suspected** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-14.8' bgs.
HCN not detected in any interval.

**Contractor:** ADT
**Driller:** Brian Urick / Jamie Meyer
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 30 Sheet 1 of 1

**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' | | | |
| Date | 2/1/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, 40's, 5-10 mph wind (W)

**Date/Time Start:** 2/1/06 10:00

**Date/Time Finish:** 2/1/06 15:35

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-5" = Asphalt | | |
| 1 | | Vac-tron | | | 5-7" = Concrete | | |
| 2 | | Vac-tron | | 0.0 | 7-19" = Grey/brown F GRAVEL (angular and smooth), some FMC Sand and silt | | |
| 3 | | Vac-tron | | | 19" - 5' =Brown FM SAND, some Brick fragments and F angular Gravel | | |
| 4 | | Vac-tron | | | (schist fragments), trace silt and metal fragments (Fill) | | |
| 5 | | 7-8-6-5 | 33 | 0.1 | Grey, FC GRAVEL, Dark Brown FC Sand and Gravel in shoe | | |
| 6 | | | | | | | |
| 7 | SB-30 (7'-9') | 5-3-4-3 | 16 | 0.2 | Brown FMC SAND, some Fine angular Gravel and micaceous fragments | | |
| 8 | | | | | | | |
| 9 | | 3-3-2-2 | 30 | 0.5 | Wet, Black/brown F angular GRAVEL, some grey Ash and Cinders | | |
| 10 | | | | | (creosol like odor) | | |
| 11 | | 2-5-8-10 | 4 | 1.4 | ASH and CINDERS; some F angular Gravel (creasol like odor) | | |
| 12 | | | | | | | |
| 13 | | 4-9-4-6 | 16 | 1.0 | Grey MC SAND, some F angular Gravel, trace wood fragments | | |
| 14 | | | | | (creosol like odor) | | |
| 15 | | 10-4-5-6 | 25 | 0.6 | Same as above interval with black FMC SAND, | | |
| 16 | | | | | | | |
| 17 | | 7-7-6-2 | NR | NR | No Recovery | | |
| 18 | | | | | | | |
| 19 | | 15-7-4-3 | 16 | 0.7 | Brown/black F angular GRAVEL, some MC Sand; trace silt | | |
| 20 | | | | | (hydrocarbon and creosol like odor) | | |
| 21 | | 11-9-8-4 | 16 | 0.2 | Same as above interval with trace F angular gravel. | | |
| 22 | | | | | | | |
| 23 | | 10-5-4-4 | 25 | 0.6 | Black F angular GRAVEL, some MC Sand, Ash and Cinders; trace micaceous | | |
| 24 | | | | | and brick fragments (hydrocarbon like odor) | | |
| 25 | | 1-1-3-5 | 12 | 0.5 | Same as above interval | | |
| 26 | | | | | | | |
| 27 | | VOID | - | - | VOID | | |
| 28 | | 11-15-17-21 | 20 | 0.8 | Grey F angular GRAVEL, some FM Sand and Micaceous fragments | | |
| 29 | | | | | (creosol and sewer like odor) | | |
| 30 | SB-30 (30'-32.5') | 10-12-5-4 | 16 | 0.8 | Same as above interval with trace slag and rainbow sheen oberserved on the | | |
| 31 | | | | | water | | |
| 32 | SB-30 (32.5') | 3-50/2 | 33 | 3430 | 0-7" = Red soft SILT, trace F sand. Bottom 1" = dry tan/brown TILL, some | | |
| 33 | | | | | F angular Gravel (strong hydrocarbon like odor) | | |
| | | | | | **End of boring @ 32.5' bgs, Auger and spoon refusal** | | |
| | | | | | | | |
| | | | | | | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-32.5' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 31 Sheet 1 of 1
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 02/10/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, 32° F, partly cloudy
**Date/Time Start:** 02/10/06 10:00
**Date/Time Finish:** 02/10/06 15:00

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 8" - 5' = Dark brown, FM SAND, some FC angular Gravel and silt; trace wood | | |
| 2 | | Vac-tron | | | fragments and cobble | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 6-7-4-5 | 12 | 0.2 | Schist fragments, asphalt from top of hole | | |
| 6 | | | | | | | |
| 7 | | 4-5-4-5 | 12 | 12 | Schist fragments, FM SAND, brown Clay, micaceous fragments, | | |
| 8 | | | | | Mostly weathered rocks | | |
| 9 | | 7-4-5-2 | 16 | 0.6 | Wet loose weatherered SCHIST, trace FM sand, brick in shoe | | |
| 10 | | | | | | | |
| 11 | SB-31 (11'-13') | 5-31-17-6 | 16 | 3.1 | Wet medium dense Brown, F SAND, some Schist fragments, trace F | | |
| 12 | | | | | subangular gravel, concrete in shoe of spoon. | | |
| 13 | | 6-13-4-4 | 80 | 2.4 | Wet, Grey/brown F SAND, trace Gravel, brick fragments, wood in spoon | | |
| 14 | | | | | | | |
| 15 | SB-31 (15'-17') | 6-2-6-50/0 | 8 | 0.5 | Red/brown MC SAND, moist to dry, some fine subangular gravel | | |
| 16 | | | | | trace rounded gravel | | |
| | | | | | **End of boring @ 17.5' bgs, Auger and spoon refusal on metal bottom suspected** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-17.5' bgs.
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB - 32 Sheet 1 of 1

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 2/9/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cool, 30's, Sunny, 0-5 mph winds (W)

**Date/Time Start:** 2/9/06 10:30

**Date/Time Finish:** 2/9/06 14:00

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 8"-5' = Brown FM SAND, some F angular Gravel, Brick fragments and silt; | | |
| 2 | | Vac-tron | | | trace micaceous fragments | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 10-5-7-28 | | 0.0 | No recovery | | |
| 6 | | | | | | | |
| 7 | | 5-3-5-5-5 | | 0.0 | No recovery | | |
| 8 | | | | | | | |
| 9 | SP-32 (9'-11') | | 13 | 4.8 | Red Brick, trace brown FM SAND, fine gravel | | |
| 10 | | | | | | | |
| 11 | SP-32 (11'-13') | 50/1 | 16 | 5.7 | 0-3" Brown/black FM SAND , some fine/angular gravel, trace brick fragment | | |
| 12 | | | | | 3"-4" Dark brown FM SAND, some silt (slight hydrocarbon odor) | | |
| | | | | | **End of boring @ 13' bgs, Auger and spoon refusal on metal bottom suspected** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-13' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Khaled E
**Inspector:** Sara Chmura\Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 33 Sheet 1 of 1
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 02/08/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Rainy, 30-40's; 0-5 mph wind (W)
**Date/Time Start:** 02/08/06 11:00
**Date/Time Finish:** 02/08/06 13:30

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| 3 | | | | | | | |
| | | | | | | | |
| 2 | | | | | | | |
| | | | | | | | |
| 1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 8 - 12" = Slag layer | | |
| 2 | | Vac-tron | | 0.0 | 12" - 5' = Brown to light grey FM SAND, some FC angular Gravel and | | |
| 3 | | Vac-tron | | | micaceous fragments | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 6-25-17-12 | 12 | 0.8 | Black Coal patch, Brown FM SAND, quartz | | |
| 6 | | | | | | | |
| 7 | | 6-3-5-8 | 28 | 37.3 | Brown, FM SAND, some micaceous fragments, weathered schist | | |
| 8 | | | | | | | |
| 9 | | 8-8-9-10 | 24 | 9.2 | Same as above Interval | | |
| 10 | | | | | | | |
| 11 | | 6-6-5-5 | 20 | 10.6 | Brown/black FM SAND, some Mica fragments, schist fragments | | |
| 12 | | | | | hydrocarbon like odor, spotty rainbow sheen on water | | |
| 13 | | 13-13-6-4 | 24 | 10.9 | Black/brown FM SAND, some F angular Gravel, schist fragments | | |
| 14 | | | | | hydrocarbon like odor | | |
| 15 | | 21-32-6-6 | 8 | 20.1 | Red/brown tan FM SAND, some F subangular Gravel | | |
| 16 | | | | | trace silt, slight hydrocarbon like odor | | |
| 17 | SB-33 (17'-19') | 2-2-7-4 | 56 | 566.2 | Dark brown, silt with SAND, rooflets, trace mica fragments | | |
| 18 | | | | | slight odor, moist | | |
| 19 | | 13-12-8-8 | 8 | 120.0 | Black FM SAND | | |
| 20 | | | | | | | |
| 21 | | 4-5-6-7- | 40 | 128.0 | Red/brown, F SAND, some subangular Gravel, moist, some silt, | | |
| 22 | | | | | rock in shoe o f spoon, no odor | | |
| 23 | | 9-31-15-16 | 68 | 33.5 | Red/brown FM SAND, trace Silt, slight hydrocarbon like odor | | |
| 24 | | | | | | | |
| 25 | | 16-50/3 | 28 | 20.1 | 0-5" Same as above Interval | | |
| 26 | | | | | 10-12" Red/brown, FM SAND, some angular Rock Gravel | | |
| 27 | SB-33 (27'-28') | 50/1 | 48 | 16.5 | 0-8" FMC SAND,F Angular Gravel | | |
| 28 | | | | | 8-12" Grey weathered ROCK,some FM Sand, trace F subangular gravel | | |
| | | | | | **End of boring @ 28' bgs, Auger and spoon refusal** | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-28' bgs.
HCN not detected in any interval. Duplicate sample collected from 17'-19' bgs.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB-34 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | NA | | | |
| Date | 3/1/07 | | | |
| Time | NA | | | |
| Meas. From | NA | | | |

**Weather:** Partly Cloudy, 30-40's; 0-5 mph wind (W).
**Date/Time Start:** 3/1/07 1030
**Date/Time Finish:** 3/1/07 1400

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-9" = Concrete, wire mesh | | |
| 1 | | | HC | | 9"-12" = Trap rock. | | |
| 2 | | | HC | 0.0 | 12"-20" = Concrete, brick, slag, cmf gravel. | FILL | |
| 3 | | | HC | | 20"-3.5' = Brick/mortar. | | |
| 4 | | | HC | | 3.5'-5' = Mortar/concrete. | | |
| 5 | | | | | | | |
| | | | | | Drilled to 6' bgs. White/Pink quartz. | Bedrock | |
| 7 | | | | | **End of Boring @ 6' bgs** | | |
| | | | | | | | |
| 9 | | | | | | | |
| | | | | | | | |
| 11 | | | | | | | |
| | | | | | | | |
| 13 | | | | | | | |
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| 31 | | | | | | | |
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| 33 | | | | | | | |
| | | | | | | | |
| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 6' bgs. Possible bedrock @ 6' bgs.
Hand cleared to 5 feet.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** Sheet 1 of 1 **SB - 36A**

**Contractor** ADT
**Driller:** Khaled Eltahan / Jeremy Meyers
**Inspector:** Sal Kokol
**Rig Type:** Air-Knife and Hand Auger

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 44th Street, NY, NY (North side of W. 44th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ND | | | |
| Date | 3/18/06 | | | |
| Time | | | | |
| Meas. From | Hand Clearance | | | |

**Weather:** Clear, low 30's, 5-10 mph wind (W)

**Date/Time Start:** 3/18/06 20:45

**Date/Time Finish:** 3/18/06 23:30

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-10" = Concrete and rebarb | | |
| 1 | | Vac-tron | | 0.1 | 10" -2' = Brown FMC SAND, brick fragments. | | |
| 2 | | Vac-tron | | 0.0 | 2-3' = Weathered SCHIST and rock fragments | | |
| 3 | | Vac-tron | | 0.3 | 3-4' = Brown FMC SAND and rock fragments | | |
| 4 | SB-36A (5'-5.5') | Hand Auger | | 0.0 | 4-5.5' = Brown FMC SAND, some Rock fragments | | |
| 5 | | | | | (weathered rock @ bottom) | | |
| | | | | | **End of boring @ ~5.5' bgs** | | |

**COMMENTS:**
Boring was hand cleared to 5.5' bgs;
HCN not detected in any interval.

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**Contractor** ADT
**Driller:** Brian Urick / Khaled Eltahan
**Inspector:** Sara Chmura / Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO. SB - 37** Sheet 1 of 1
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~13' | | | |
| Date | 02/07/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Heavy rain, 50's, 15-20 mph wind (W)

**Date/Time Start:** 2/3/06 10:15

**Date/Time Finish:** 2/7/06 16:30

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-6" = Concrete | | |
| 1 | | Vac-tron | | 0.0 | 6-12" = Brown to light grey F angular GRAVEL, some F Sand; trace silt | | |
| 2 | | Vac-tron | | | 12"4' = Boulder, some FM Sand, trace silt. | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 1-7-6-3 | 8 | 0.0 | Sluff (#2 sand) backfill material from hand clearance | | Augers skipping off of boulders, unable to drill, straight. Undermining under drillers. Unsafe to proceed. |
| 6 | | | | | | | |
| 7 | | 4-3-5 | 8 | 0.0 | Sluff (#2 sand) backfill material from hand clearance | | |
| 8 | | | | | (Hammer stuck, could not complete run) | | |
| 9 | | | | | ADT set casing for spin and wash to 10' bgs. First split spoon will be | | |
| 10 | | | | | 13-15' bgs | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | 3-4-2-1 | 8 | 0.2 | Black/brown FM SAND, trace F angular Gravel; wood fragments in shoe | | |
| 14 | | | | | (wet) | | |
| 15 | | Void | - | - | Void | | |
| 16 | | | | | | | |
| 17 | | 3-4-2-2 | 16 | 0.0 | Grey/ dark brown F SAND, trace red brick fragments and F angular gravel | | |
| 18 | | | | | Schist fragments in shoe | | |
| 19 | | 4-2-1-1 | 16 | 0.3 | Same as above interval | | |
| 20 | | | | | | | |
| 21 | | 3-3-2-2 | 12 | 0.3 | Sluff | | |
| 22 | | | | | | | |
| 23 | SB-37 (23'-25') | 5-7-10-9 | 16 | 554.0 | Brown/Black FM SAND, trace angular gravel (hydrocarbon like odor) | | |
| 24 | | | | | metal in shoe | | |
| 25 | | 10-10-11-6 | 22 | 68.6 | Light brown FM SAND, some angular Gravel; trace quartz | | |
| 26 | | | | | (hydrocarbon like odor) | | |
| 27 | | | | | | | |
| 28 | | Void | - | - | Void from 27-32' bgs | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | SB-37 (32'-34') | 17-25-50/1 | 25 | 65 | Grey/white FM SAND, some F angular Gravel; rock in shoe | | |
| 33 | | | | | (organic like odor) | | |
| | | | | | **End of boring @ 34' bgs, Spoon refusal** | | |
| | | | | | | | |
| | | | | | | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-9' bgs (2/3/06). Spin and Wash used from 10'-34' bgs (2/7/06)
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick/ Jamie Meyers
**Inspector:** Paul Kies
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/** Sheet 1 of 1
**WELL NO. SB - 38**
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 2/2/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Partly cloudy, 45 degrees

**Date/Time Start:** 2/2/06 10:40

**Date/Time Finish:** 2/2/06 16:30

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Concrete | | |
| 1 | | Vac-tron | | 0.0 | 8"- 5.3" = FC angular GRAVEL and BRICK Fragments (Schist), some FM Sand, | | |
| 2 | | Vac-tron | | | Mica fragments and Cobble; trace silt (Fill) | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | SB-38 (5'-7') | 2-3-5-6 | 30 | 0.1 | Brown FMC SAND, some F angular Gravel, trace silt | | |
| 6 | | | | | | | |
| 7 | | 10-15-3-3 | 16 | 0.0 | Sluff | | |
| 8 | | | | | | | |
| 9 | | 3-5-5-3 | 8 | 0.0 | Sluff | | |
| 10 | | | | | | | |
| 11 | | 5-7-17-4 | 8 | 2.2 | Black FMC SAND; some F angular Gravel and micaceous fragments | | |
| 12 | | | | | (strong creosal like odor) | | |
| 13 | | Void | - | - | Void | | |
| 14 | | | | | | | |
| 15 | | 2-2-6-3 | 6 | 0.7 | Black FMC SAND; some F angular Gravel and micaceous fragments; | | |
| 16 | | | | | trace schist fragments (hydrocarbon like odor) | | |
| 17 | | 1-1-2-2 | 4 | 0.9 | Brown/black FM SAND some F angular Gravel, trace micaceous fragments | | |
| 18 | | | | | (hydrocarbon like odor) | | |
| 19 | | 1-1-3-10 | NR | NR | No Recovery | | |
| 20 | | | | | | | |
| 21 | | 1-4-3-5 | 8 | 0.8 | Black/grey FM SAND, some F angular Gravel, trace concrete, brick and schist | | |
| 22 | | | | | fragments | | |
| 23 | | 14-23-1-2 | 8 | 1.7 | Same as above interval with hydrocarbon like odor | | |
| 24 | | | | | | | |
| 25 | | 4-2-4-3 | 13 | 2.6 | 0-1" = Black FM SAND, some F angular gravel | | |
| 26 | | | | | 1-3" = Light brown F SAND, trace quartz fragments (hydrocarbon like odor) | | Rainbow sheen |
| 27 | SB-38 (27'-29') | 18-36-31-17 | 16 | 4.8 | 0-2" = Black FM SAND, some F angular Gravel and micaceous fragments | | on water |
| 28 | SB-38 (29') | | | | 2-4" = Red brown TILL; some F Gravel | | |
| | | | | | **End of boring @ 29' bgs, Auger refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-29' bgs.
HCN not detected in any interval.

**Contractor:** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 39 Sheet 1 of 1
**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 1/31/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Rainy, 30-40's; 0-5 mph wind (W)
**Date/Time Start:** 1/31/06 09:50
**Date/Time Finish:** 1/31/06 16:30

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-6" = Concrete | | |
| 1 | | Vac-tron | | 0.0 | 6-12" = Brown FMC SAND, some F Gravel; trace silt | | |
| 2 | | Vac-tron | | | 12" - 5' = FC angular GRAVEL, COBBLE and BOULDERS (Schist) (Fill) | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | SB-39 (5'-7') | 3-1-1-7 | 12 | 0.0 | Brown FMC SAND, little F angular gravel, trace silt | | |
| 6 | | | | | | | |
| 7 | | 10-1-3-10 | NR | NR | No Recovery | | |
| 8 | | | | | | | |
| 9 | | 1-3-5-5 | 12 | 0.0 | Dark brown, MC SAND, some F angular Gravel, Micaceous and Quartz | | |
| 10 | | | | | fragments | | |
| 11 | | 3-4-15-9 | 33 | 0.0 | Wet, Brown/dark brown FMC SAND, some F angular Gravel, Brick and | | |
| 12 | | | | | Micaceous fragments, trace silt (sewer like odor). | | |
| 13 | | 3-2-1-1 | NR | NR | fragments, trace silt (sewer like odor). | | |
| 14 | | | | | | | |
| 15 | | 1-4-2-6 | NR | NR | No Recovery | | |
| 16 | | | | | | | |
| 17 | | 2-6-5-2 | NR | NR | No Recovery | | |
| 18 | | | | | | | |
| 19 | | 1-1-3-6 | 30 | 0.6 | Grey/brown FM SAND, some Brick and Micaceous fragments | | |
| 20 | | | | | | | |
| 21 | | 7-2-7-6 | 0.5 | 0.0 | QUARTZ and SCHIST fragments | | |
| 22 | | | | | | | |
| 23 | | 2-15-1-1 | 0.5 | 2.0 | Same as above interval with red BRICK fragments | | |
| 24 | | | | | | | |
| 25 | | 3-4-7-6 | NR | NR | No Recovery | | |
| 26 | | | | | | | |
| 27 | | 7-7-4-5 | 4 | 0 | White QUARTZ, some Schist fragments, trace sand and brick fragments | | |
| 28 | | | | | | | |
| 29 | SB-39 (29'-31') | 15-17-11-2 | 25 | 219 | 0-4" = Brown FM SAND, some F angular Gravel. 4-6" = Black/grey SILT, F | | |
| 30 | | | | | angular GRAVEL (strong hydrocarbon like odor; product saturated @ tip of spoon) | | |
| 31 | SB-39 (31'-33') | WOR/24 | 30 | 3558 | Black and green/brown SILT, trace black wood fibers, NAPL saturated. | | |
| 33 | | 50/0 | 0 | 0.0 | Black sluff | | |
| | | | | | **End of boring @ 33' bgs, Auger and spoon refusal** | | |
| | | | | | | | |
| | | | | | | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-33' bgs.
HCN not detected in any interval. Hydrocarbon fingerprint sample collected from 29'-31' bgs.

**Contractor:** ADT
**Driller:** Brain Urick / Rudy Rios
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 40 Sheet 1 of 1

**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 1/30/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 40-50's; 0-5 mph wind (W)
**Date/Time Start:** 1/30//06 10:20
**Date/Time Finish:** 1/30//06 16:00

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | SB-40 (0.5'-1.0') | Vac-tron | | | 0-6" = Concrete | | |
| 1 | | Vac-tron | | 0.8 | 6"- 4' = Grey/brown FMC SAND, some FC angular gravel (rebar @ 1.5') | | |
| 2 | | Vac-tron | | | trace slag and silt (slight hydrocarbon like odor) | | |
| 3 | | Vac-tron | | 0.2 | 4-5' = BRICK, COBBLE, SCHIST Fragments some Silt and FM Sand (slight | | |
| 4 | | Vac-tron | | | hydrocarbon like odor) (Fill) | | |
| 5 | | 2-7-10-20 | 83 | 3.1 | Top 7" = Brown FM SAND, some Schist with coal, slag and F angular rock | | |
| 6 | | | | | fragments; trace red brick fragments (slight hydrocarbon like odor) | | |
| 7 | | 6-9-8-9 | 45 | 11.9 | Brown FM SAND, some Micaceous fragments, trace brick fragments | | |
| 8 | | | | | (slight hydrocarbon like odor) | | |
| 9 | SB-40 (9'-11') | 5-6-4-3 | 41 | 14.2 | Dark brown to black FM SAND, some Micaceous fragments, FM Gravel | | |
| 10 | | | | | (angular) and slag fragments (slight hydrocarbon like odor) wet @ bottom of spoon. | | |
| 11 | | 4-3-8-5 | 29 | 11.2 | Black C SAND, some F angular Gravel, trace silt and FM sand | | |
| 12 | | | | | (Slight hydrocarbon and organic like odor) | | |
| 13 | | 3-6-7-7 | 29 | 2.9 | Grey/black FM SAND, some F angular Gravel (slight hydrocarbon like odor) | | |
| 14 | | | | | | | |
| 15 | | 3-7-15-22 | 29 | 15.2 | Dark grey FMC SAND, trace silt and F angular gravel in shoe | | |
| 16 | | | | | (slight hydrocarbon like odor) | | |
| 17 | | 8-9-8-27 | 100 | 49.1 | 0-12" = Black/grey FM SAND, little brick fragments. 12-24" = Black/grey M SAND, some | | |
| 18 | | | | | M angular Gravel (NAPL observed @ bottom of spoon, hydrocarbon like odor) | | |
| 19 | | 20-23-5-7 | 16 | 18.6 | Black FMC SAND, little F angular gravel, trace silt (black rainbow sheen observed | | |
| 20 | | | | | on water; strong hydrocarbon like odor) | | |
| 21 | | 28-18-18-8 | 83 | 134.0 | Same as above interval with F angular Gravel at bottom 10". NAPL globules observed. | | |
| 22 | | | | | Rock in shoe. | | |
| 23 | SB-40 (23'-25') | 5-26-30-30 | 100 | 440.0 | 0-20" = Same as above interval. 0-4" = Brown F angular gravel, some C Sand and Silt, | | |
| 24 | | | | | white quartz in shoe (bottom 4" is dry, hydrocarbon like odor). | | |
| 25 | | 50/0 | 0 | 0.0 | Rock fragments and sluff in shoe | | |
| | | | | | **End of boring @ 25' bgs** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-25' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/** Sheet 1 of 1
**WELL NO. SB - 41**
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 03/06/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 40 ° 's, 0-5 mph (W)

**Date/Time Start:** 03/06/06 11:00

**Date/Time Finish:** 03/06/06 16:00

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Asphalt | | |
| 1 | | Vac-tron | | 0.0 | 6" -5' = Brown FM SAND, some Cobbles, Boulders and FC angular Gravel | | |
| 2 | | Vac-tron | | | | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | 11-5-11-11 | 12 | 0.0 | Grey, FM GRAVEL, little FM Sand | | |
| 8 | | | | | | | |
| 9 | SB-41 (9'-11') | 14-13-33-13 | 12 | 0.8 | Wet, Brown/Grey FMC SAND, some angular gravel. | | |
| 10 | | | | | | | |
| 11 | | 13-13-16-15 | NA | NA | No recovery | | |
| 12 | | | | | | | |
| 13 | | 6-2-6-9 | NA | NA | Rock in shoe | | |
| 14 | | | | | | | |
| 15 | | 14-13-15-15-17 | 4 | 0.0 | Grey F angular rock | | |
| 16 | | | | | | | |
| 17 | | 4-5-7-35 | 4 | 0.0 | WOOD and F angular Gravel | | |
| 18 | | | | | | | |
| 19 | SB-41 (19'-21') | 50/1 | 4 | 0.0 | Grey F angular GRAVEL, some FM Sand, micaceous fragments | | |
| | | | | | **End of boring @ 19' bgs, Auger and spoon refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-19' bgs.
HCN not detected in any interval.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** SB -42 Sheet 1 of 1

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Rakesh Singh
**Rig Type:** Truck- Rig (CME-75)

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 02/20/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, Clear, 30° S, 0-5 mph (W)

**Date/Time Start:** 02/20/06 09:30

**Date/Time Finish:** 02/20/06 14:40

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0'-8'= Asphalt | | |
| 1 | | Vac-tron | | | 8"-2.5'= Dark brown FM SAND, FC angular gravel, trace brick fragment | | |
| 2 | | Vac-tron | | | 2.5'- 3'= Concrete | | |
| 3 | | Vac-tron | | | 3'-5'= Brown FM SAND, trace silt | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 5-1--12-15 | 4 | 0.0 | Brown, FM SAND, trace Silt, concrete | | |
| 6 | | | | | | | |
| 7 | | 4-3-4-2 | 2 | 0.0 | Same as above Interval | | |
| 8 | | | | | | | |
| 9 | | 2-1-2-3 | 10 | 0.0 | Brown FM SAND, trace Silt, wood in shoe | | |
| 10 | | | | | | | |
| 11 | | 3-1-1-2 | 60 | 0.3 | Brown FM SAND, some Silt, trace clay, organic like odor | | |
| 12 | | | | | | | |
| 13 | | 1-1-2-2 | 60 | 0.5 | 0-14'= very silty CLAY, some FM Sand | | |
| 14 | | | | | 14-15'= Some Grey FM Sand, trace silt, hydrocabon like odor | | |
| 15 | | 1-2-7-9 | 48 | 0.3 | 0-6"= Dark grey FM SAND, trace silt, hydrocarbon like odor | | |
| 16 | | | | | 6-12"= Red brown FM SAND, trace silt, slight hydrocarbon like odor | | |
| 17 | SB-42 (17'-19') | 6-8-9-12 | 48 | 2.6 | Red brown FM SAND, some F angular Gravel,micaceous fragments | | |
| 18 | | | | | hydrocarbon like odor | | |
| 19 | | 52/24/49/73 | 52 | 0.4 | Red brown FM SAND, some smooth and F angular Gravel, | | |
| 20 | | | | | miscellaneous fragments | | |
| 21 | | 8-6-21-13 | 20 | 0.1 | Same as above Interval | | |
| 22 | | | | | | | |
| 23 | | 50/2 | 12 | 0.0 | Light brown MC SAND, some fine angular Gravel, quartz fragments | | |
| 24 | | | | | miscellaneous fragments | | |
| 25 | SB-42 (25'-27') | 50/2 | 8 | 0.0 | Brown, MC SAND, trace angular Gravel, micaseous fragments | | |
| | | | | | **End of boring @ 26', Auger refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-26' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Sara Chmura
**Rig Type:** TrAC- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB - 43 Sheet 1 of 1
**Location Description:** W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~7' | | | |
| Date | 3/9/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, Sunny, 30-40s, 0-5 mph (W)
**Date/Time Start:** 3/8/06 1110
**Date/Time Finish:** 3/9/06 1630

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-4" = Concrete | | |
| 1 | | Vac-tron | | | 4"-12"= Dark to light brown FM SAND, angular gravel, trace bricks, no odor | | |
| 2 | SB-43 (1'-3') | Vac-tron | | 17.8 | 1'-3'= Dark brown FM SAND, cobbles, subangular rock, bricks, hydrocarbon like odor | | |
| 3 | SB-43 (3.5') | Vac-tron | | 28.7 | 3-3.5'= Dark brown FM SAND, coal tar, hydrocarbon like odor. | | |
| 4 | | Vac-tron | | | 3.5'-5' = Coal tar, FM sand, angular gravel, hydrocarbon like odor | | |
| 5 | | 30-39 | 33 | 11.1 | 0-6" Dark/Light brown FM SAND, angular gravel, trace micaceous fragments, silt. | | |
| 6 | | 50/1 | | | 6-8" Black FM SAND, fine angular gravel, trace silt (hydrocarbon like odor) | | |
| 7 | SB-43 (7'-9') | 50/1 | 0 | 126.0 | Dark brown F SAND, silt, trace angular gravel | | Spin and Wash Mudtub with roller bit used 7-9 ft; Brown FM Sand, some micaceous fragments, trace silt. Rainbow sheen on groundwater. HQ Core collected from 9-11 ft. |
| 8 | | | | | | | |
| 9 | | | | | 9-11' GRANITE w/ trace micaceous fragment, some like quartz | | |
| 10 | | | | | | | |
| | | | | | **End of boring @ 11' bgs** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-7' bgs.
HCN not detected in any interval. Hydrocarbon fingerprint sample collected from 3.5' bgs.

**Contractor:** ADT
**Driller:** Rudy Rios / Dave Gregorio
**Inspector:** Paul Kies / Mike Tavakolian
**Rig Type:** Trac-Rig (DK-50)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB -44 Sheet 1 of 1

**Location Description:**
W. 44th Street, NY, NY
(North side of W. 44th Street)

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~5' | | | |
| Date | 03/08/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Clear, Sunny, 30-40's; 0-5 mph wind (W)
**Date/Time Start:** 3/8/06 1250
**Date/Time Finish:** 3/8/06 1600

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-3' = Concrete, 3-6" Dark brown FM SAND, some angular Gravel, trace bricks | | |
| 1 | | Vac-tron | | 0.0 | 6"-12" = Moist, Llight brown/grey, F GRAVEL, some FM Sand and Brick fragments | | |
| 2 | | Vac-tron | | 0.0 | 1-3' = Dark brown FM Sand, some Cobble and Brick fragments | | |
| 3 | | Vac-tron | | 0.0 | 3-4' = Dark Grey FM SAND and F angular Gravel, Coal Tar @ bottom. | | |
| 4 | | Vac-tron | | 23.8 | 4-5' = Black Coal Tar (hydrocarbon like odor) | | |
| 5 | | 8-7-5-3 | 50 | 121.0 | Wet, dark brown F SANDY/SILT; trace C sand (strong hydrocarbon like odor) | | |
| 6 | | | | | (rainbow sheen observed on water surface) | | |
| 7 | SB-40 (7'-9') | 3-5-5-8 | 41 | 26.6 | 0-4" = Dark brown F SANDY/SILT | | |
| 8 | | | | | 4-10" = Light brown F SANDY/SILT (strong hydrocarbon like odor) | | |
| 9 | | 50/1 | 4 | 10.0 | White F QUARTZ fragments, some black F Sandy/Silt (stained) | | |
| | | | | | **End of boring @ 9' bgs, Auger and split spoon refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-9' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies /Mike Tavakolian
**Rig Type:** Trac- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB -45 Sheet 1 of 1
**Location Description:**
W. 45th Street, NY, NY
UPS Parking Lot

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 03/10/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, Sunny, 30's , 10-15 mph (W)

**Date/Time Start:** 03/10/06 08:40

**Date/Time Finish:** 03/10/06 15:15

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-6"= Concrete | | |
| 1 | | Vac-tron | | | 6"-12"= Dark brown FM SAND< angular gravel, brick fragments. | | |
| 2 | | Vac-tron | | | 12"-5'= Light brown FM SAND, angular gravel, trace bricks, trace cement, | | |
| 3 | | Vac-tron | | | some clay | | |
| 4 | | Vac-tron | | | | | |
| 5 | SB-45 (5'-7') | 4-5-11-11 | 56 | 25.5 | 0-6"= Brown FM SAND, some Silt, trace angular gravel | | |
| 6 | | | | | 6"-12"= Grey/brown FM SAND, some Silt, hydrocarbon like odor | | |
| 7 | | 9-9-30-28 | 24 | 2.3 | Black F sandy SILT, some fine angular Gravel, weathered rock in shoe | | |
| 8 | | | | | Hydrocarbon like odor | | |
| 9 | | 2-3-3-1 | NR | NA | No recovery | | |
| 10 | | | | | | | |
| 11 | | 3-4-3-38 | 48 | 23.2 | Black Fine sandy SILT, some fine angular gravel, weathered rock in shoe | | |
| 12 | | | | | hydrocarbon like odor | | |
| 13 | | 1-1-3-8 | 48 | 53.8 | Light Grey/Red brown FM SAND, some fine angular Gravel, | | |
| 14 | | | | | | | |
| 15 | | 11-12-13-15 | 48 | 55.9 | Red brown FM SAND, little globule products, trace silt | | |
| 16 | | | | | | | |
| 17 | | 30-33-56-56 | 24 | 49.1 | Same as above interval | | |
| 18 | | | | | | | |
| 19 | SB-45 (19'-21') | 64-51-50/3 | 40 | 23.5 | Black/olive FMC SAND, some angular Gravel, hydrocarbon like odor | | |
| 20 | | | | | | | |
| | | | | | **End of boring @ 21 bgs, Auger refusal** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-21' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies /Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB -46 Sheet 1 of 1
**Location Description:** W. 48th Street (South Side), NY, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~11' | | | |
| Date | 03/23/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, Sunny, 30's , 10-15 mph winds (W)

**Date/Time Start:** 03/23/06 09:30

**Date/Time Finish:** 03/23/06 13:00

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-8" = Concrete | | |
| 1 | | Vac-tron | | | 8"-12"= Light brown, dry, FM SAND, some subangular Gravel, silt, no odor | | |
| 2 | | Vac-tron | | | 1'-3'= Same as above Interval with trace silt | | |
| 3 | | Vac-tron | | | 3'-5'= Same as above Interval | | |
| 4 | | Vac-tron | | | | | |
| 5 | | 8-11-13-9 | 32 | 0.0 | Light brown, FM SAND, some angular Gravel, trace silt | | |
| 6 | | | | | | | |
| 7 | | 6-7-4-3 | 56 | 1.7 | Light brown, FM SAND, trace silt, micaceous fragments, | | |
| 8 | | | | | Black FM sand in shoe | | |
| 9 | | 5-4-3-3 | 60 | 3.2 | Dark brown/ light brown FM SAND, some Silt, trace angular gravel, | | |
| 10 | | | | | organic odor | | |
| 11 | SB-46 (11'-13') | 9-9-11-10 | 60 | 7.3 | 0'-8"= Brown/light brown FM SAND | | |
| 12 | | | | | 8"-12"= Red Brown FM SAND, trace Silt | | |
| 13 | SB-46 (13'-15') | 33-50/3 | 32 | 6.5 | Red/Brown FM SAND, trace Silt, weathered rock | | |
| 14 | | | | | | | |
| 15 | | 17-33-50/3 | 20 | 0.0 | Grey F angular GRAVEL, schist fragments, weathered rock | | |
| | | | | | **End of boring @ 15' bgs, Auger refusal** | | |

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-15' bgs.
HCN not detected in any interval.

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies /Mike Tavakolian
**Rig Type:** GeoProbe Track Rig

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO.** SB -47 Sheet 1 of 1
**Location Description:** W. 48th Street (South Side), NY, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' | | | |
| Date | 3/30/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, Sunny, 30's , 10-15 mph winds (W)

**Date/Time Start:** 03/30/06 09:00

**Date/Time Finish:** 03/30/06 11:10

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | | 0-4"= Concrete | | |
| 1 | | Vac-tron | | | 4"-12"= Dark Brown FM SAND, bricks, angular gravel, trace silt | | |
| 2 | | Vac-tron | | | 1'-5' = Dark brown, FM SAND, cobbles, brick angular gravel, trace silt | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | | 80 | 0.2 | 0-3' Brown FM SANDY SILT, some brick fragment, little fine/angular gravel | | |
| 6 | | | | | | | |
| 7 | | | | | 3.5-4' Concrete | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | 70 | 0.6 | 0-3" Concrete | | |
| 11 | | | | | 3"-2' Brown fine sandy SILT | | |
| 12 | | | | | 2-3.5' Olive, fine sandy SILT | | |
| 13 | | | | | Some dark brown FM sand, some silt in shoe (slight hydrocarbon odor) | | |
| 14 | | | | | | | |
| 15 | SB-47 (15') | | 60 | 2.0 | 0-1' Dark Brown FM Sand, trace silt | | |
| 16 | | | | | 2-3' Red/brown F SANDY SILT, some smooth to rounded fine gravel, | | |
| 17 | | | | | Fine/angular gravel in shoe of macro core | | |
| 18 | SB-47 (18') | | | 4.5 | | | |
| | | | | | **End of boring @ 18' bgs** | | |

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Geoprobe used from 5'-18' bgs.
HCN not detected in any interval.

**Contractor** ADT
**Driller:** Brian Urick / Jamie Meyers
**Inspector:** Paul Kies / Mike Tavakolian
**Rig Type:** Truck- Rig (CME-75)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Con Edison / W. 45th Street
**PROJECT NUMBER:** 442145-01000

**BORING/ WELL NO. SB - 48** Sheet 1 of 1
**Location Description:** W. 48th Street (South Side), NY, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' | | | |
| Date | 03/30/06 | | | |
| Time | | | | |
| Meas. From | Split spoons | | | |

**Weather:** Cold, 30 ° 's Sunny, 10-15 mph winds (W)
**Date/Time Start:** 03/30/06 11:10
**Date/Time Finish:** 03/30/06 13:00

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC (drawing not to scale) | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | Vac-tron | | 0.0 | 0-6" = Concrete | | |
| 1 | | Vac-tron | | | 6"-12"= Dark brown FM SAND, angular gravel, bricks | | |
| 2 | | Vac-tron | | | 1'-5'= Light brown FM SAND, cobbles, fine angular gravel, trace silt, brick | | |
| 3 | | Vac-tron | | | | | |
| 4 | | Vac-tron | | | | | |
| 5 | | | 90 | 0.2 | 0-3.5' Brown FM SAND, some brick fragment, fine angular gravel | | |
| 6 | | | | | 3.5'-4' Concrete | | |
| 7 | | | | | 4'-4.5' Brown CLAY and some silt in wooden shoe | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | 100 | 9.7 | 0-2.5' Brown F SAND, some brick, some fine/angular gravel, trace silt | | |
| 11 | | | | | 2.5'-3' Olive gray SILT, some fine sand, gray clay silt w/ organic fibers | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | 60 | 400.0 | 0-2' PEAT, some gray clay and silt | | |
| 16 | | | | | 2'-2.5' Gray FM SAND, some organic fiber (hydrocarbon like oder) | | |
| 17 | | | | | 2.5'-3' Red/brown FM SAND w/ smooth, fine gravel, trace silt | | |
| 18 | | | | | | | |
| 19 | | | | | Product globules at bottom (strong hydrocarbon odor) | | |
| 20 | SB-48 (20'-21') | | 60 | 1749 | Red/brown FM SAND (black product saturated), | | |
| 21 | | | | | some smooth brown Gravel (strong hydrocarbon odor) | | |
| 22 | | | | | | | |
| 23 | SB-48 (23') | | | 409.0 | | | |
| | | | | | **End of boring @ 23' bgs** | | |

**COMMENTS:**
Boring was hand cleared to 5' bgs;
Geoprobe used from 5'-23' bgs.
HCN not detected in any interval.

**SAMPLING METHOD**
HC = HAND CLEARED
VC = VACUUM CLEARED
GP = GEOPROBE/DIRECT PUSH

**ABBREVIATIONS**
F = FINE
M = MEDIUM
C = COARSE

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

# PARSONS
## DRILLING RECORD

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO. SB-49** Sheet 1 of 1

**Location Description:**
Consolidated Edison
W. 45th Street

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9' bgs | | | |
| Date | 2/28/07 | | | |
| Time | 1200 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Sunny, 40's; 0-5 mph wind (W).
**Date/Time Start:** 2/28/07 1100
**Date/Time Finish:** 2/28/07 1430

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-3" = Concrete. | | |
| 1 | | | HC | | 3"-6" = Trap rock. | | |
| 2 | | | HC | 0.0 | 6"-5' = Orange brown to brown; mf SAND, some cmf gravel; boulders (schist), aspha | FILL | |
| 3 | | | HC | | brick fragments. | | |
| 4 | | | HC | | | | |
| 5 | | 2-3-5-9 | 4 | 0.1 | Brown; cmf SAND, little silt. | SM | |
| | | | | | | | |
| 7 | SB-49 (7'-9') | 7-10-13-18 | 25 | 0 | Brown; mf SAND, trace silt; micaceous. | SP | |
| | | | | | | | |
| 9 | | 1-1-1-1 | 4 | 0 | Dark gray; f SAND, and silt. | SM | |
| | | | | | | | |
| 11 | | 1-1-5-10 | 67 | 0 | Gray; CLAY (0-6"). | CL | |
| | | | | | Yellow brown to gray; f SAND, little silt, little f gravel (6-16"). | SM | |
| 13 | | 5-7-10-11 | 71 | 0 | Brown to gray; SILT (0-5"). | ML | |
| | | | | | Yellow brown to gray; f SAND, trace silt (5-17"). | SP | |
| 15 | | 6-6-6-6 | 38 | 0 | Brown; f SAND, some silt. | SM | |
| | | | | | | | |
| 17 | SB-49 (17'-19') | WOR-50/2 | 29 | 0 | Brown; f SAND, trace silt, trace mf gravel; white quartzite in tip of splitspoon. | SP | |
| | | | | | | BEDROCK | Possible |
| 19 | | | | | **End of Boring @ 18' bgs** | | |
| | | | | | | | |
| 21 | | | | | | | |
| | | | | | | | |
| 23 | | | | | | | |
| | | | | | | | |
| 25 | | | | | | | |
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| 27 | | | | | | | |
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| 29 | | | | | | | |
| | | | | | | | |
| 31 | | | | | | | |
| | | | | | | | |
| 33 | | | | | | | |
| | | | | | | | |
| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 18' bgs. Bedrock @ 18' bgs.
Hand cleared to 5 feet.

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO. SB-50** Sheet 1 of 1

**Location Description:**
Consolidated Edison
W. 45th Street

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~8' bgs | | | |
| Date | 2/27/07 | | | |
| Time | 1130 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Sleet/Rain/Snow, 30's; 0-5 mph wind (W).
**Date/Time Start:** 2/27/07 1100
**Date/Time Finish:** 2/27/07 1400

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-4" = Concrete. | | |
| 1 | | | HC | | 4"-5" = Trap rock. | | |
| 2 | | | HC | 0.0 | 5"-8" = Gray; Ash/Cinders; cmf sand, cmf gravel (angular); brick fragments, shell | FILL | |
| 3 | | | HC | | fragements. 8"-5' = Brown to orange brown; mf SAND, some silt, little cmf gravel | | |
| 4 | | | HC | 0.0 | (angular to rounded). | | |
| 5 | SB-50 (5'-7') | 2-2-2-3 | 42 | 0 | Brown to orange brown; cmf SAND, some f gravel (rounded); f sand/silt in tip of | SW | |
| | | | | | splitspoon. | | |
| 7 | | 18-8-7-7 | 63 | 0 | Brown; cmf SAND, little f gravel (rounded); micaceous. | SW | |
| | | | | | Red brown; f SAND, some silt, f gravel; micaceous. | SM | |
| 9 | SB-50 (9'-11') | 16-18-22-50/3 | 63 | 0 | Red brown; f SAND, some silt, f gravel; micaceous (0-14"). | SM | |
| | | | | | Weathered Bedrock (14-15"). | | |
| 11 | | 50/0 | NR | NR | No Recovery. | BEDROCK | Possible |
| | | | | | | | |
| 13 | | | | | **End of Boring @ 11' bgs** | | |
| | | | | | | | |
| 15 | | | | | | | |
| | | | | | | | |
| 17 | | | | | | | |
| | | | | | | | |
| 19 | | | | | | | |
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| 21 | | | | | | | |
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| 23 | | | | | | | |
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| 25 | | | | | | | |
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| 27 | | | | | | | |
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| 29 | | | | | | | |
| | | | | | | | |
| 31 | | | | | | | |
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| 33 | | | | | | | |
| | | | | | | | |
| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 11' bgs. Bedrock @ 11' bgs.
Hand cleared to 5 feet.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. SB-51** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Greg Rivera/Enrique Vernazza
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | ~9.5' bgs | | | |
| Date | 2/26/07 | | | |
| Time | 0930 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Mix of Rain and Snow; 30's, 0-5 mph wind (W).

**Date/Time Start:** 2/26/07 0745

**Date/Time Finish:** 2/26/07 1440

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-4" = Concrete/ wire mesh. | | |
| 1 | | | HC | 0.0 | 4"-8" = Gray; Ash/Cinders; brick fragments; some cmf sand, f gravel (angular). | | |
| 2 | | | HC | 0.0 | 8"-5' = Brown to orange brown; mf SAND, some cmf gravel (angular), boulders, | FILL | |
| 3 | | | HC | | trace silt. | | |
| 4 | | | HC | | | | |
| 5 | | | | | Drilled down through boulders to 6' bgs | | |
| 6 | | 13-50/3" | NR | NR | No Recovery | | |
| | | | | | | | |
| 8 | | | | | Drilled through refusal (boulders) to 12'. | | |
| | | | | | | | |
| 10 | | | | | | | |
| | | | | | | | |
| 12 | SB-51 (12'-14') | 1-3-6-5 | 67 | 0 | Brown to orange brown; cmf SAND, some cmf gravel (angular), little clay/silt. | SW | |
| | | | | | | | |
| 14 | | 10-11-10-12 | 21 | 0 | Brown to orange brown; cmf SAND, some cmf gravel (angular), little clay/silt. | SW | |
| | | | | | | | |
| 16 | SB-51 (16'-18') | 4-6-10-12 | 50 | 0 | Brown to orange brown; cmf SAND, some cmf gravel (angular), little clay/silt (0-6"). | SW | |
| | | | | | Orange brown; SILT, some f sand; weathered rock in tip of splitspoon (6"-12"). | ML | |
| 18 | | 50/5 | 0 | 0.0 | WEATHERED ROCK in tip of split spoon. | BEDROCK | Possible |
| | | | | | | | |
| 20 | | | | | **End of Boring @ 18' bgs** | | |
| | | | | | | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | | | | | | | |
| | | | | | | | |
| 26 | | | | | | | |
| | | | | | | | |
| 28 | | | | | | | |
| | | | | | | | |
| 30 | | | | | | | |
| | | | | | | | |
| 32 | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | | | | | | | |
| 36 | | | | | | | |
| | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Auger and split spoon refusal @ 18' bgs. Bedrock @ 18' bgs.
Hand cleared to 5 feet.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. SB-52** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyer / Frank DiCono
**Inspector:** Paul A. Kies / Lee Gayle
**Rig Type:** Geoprobe (54-LT)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street (Inside UPS Parking Garage)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | 8" | | | |
| Date | 2/16/08 | | | |
| Time | 1600 | | | |
| Meas. From | Conrete Core | | | |

**Weather:** Cold, sunny, 30's; 0-5 mph wind (W)

**Date/Time Start:** 2/16/08 1300

**Date/Time Finish:** 2/23/08 1720

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | C | | 0-8" = Concrete core Note: wet directly under concrete core | | |
| 1 | | | HC | 0.0 | 8" - 4' = Dark brown/grey F SAND, some Silt, little wood fragments | FILL | |
| 2 | | | HC | | | | |
| 3 | | | HC | | | | |
| 4 | | | HC | 0.0 | 4' - 5' = Organic CLAY/SILT, some organic material | OH/PT | |
| 5 | | MC | 66 | 0 | Dark grey F SAND, some Silt and Organic material | SM/OH | |
| 6 | | MC | | | | | |
| | | MC | | | | | |
| 8 | | MC | 25 | 1.7 | Red brown FM SAND, little silt and f angular gravel | SM | Hydrocarbon like odor |
| | | MC | | 0 | | | |
| 10 | | MC | | | | | |
| | | MC | | | | | |
| 12 | SB-52 (12-14') | MC | 100 | | Red brown FM SAND, trace silt | SM | Hydrocarbon like odor |
| | | MC | | 0 | | | |
| 14 | SB-52 (14-16') | MC | | 5.5 | 44-46" = Black heavy stained zone | | Stong hydrocarbon like odor |
| | | MC | | | 46-48" = Red brown F sand, some silt | BEDROCK | Possible Bedrock/Refusal |
| 16 | | | | | **End of Boring @ 16' bgs** | | |
| | | | | | | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | | | | | | | |
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| 22 | | | | | | | |
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| 32 | | | | | | | |
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| 34 | | | | | | | |
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| 36 | | | | | | | |
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**SAMPLING METHOD**
MC = MACRO-CORE
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
All work performed inside UPS parking garage
Cored concrete slab with core barrel. Hand cleared with hand auger to 5' bgs
Macro-cored to 16' bgs. Refusal at 16' bgs, possible bedrock. No HCN was detected.

**Contractor:** Advanced Drilling Technology
**Driller:** Yiri Kamertek / Ray Martley
**Inspector:** Mike Wilkinson / Lee Gayle
**Rig Type:** Geoprobe (54-LT)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO. SB-53** Sheet 1 of 1

**Location Description:**
Consolidated Edison
W. 45th Street (Inside UPS Parking Garage)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | 9" | | | |
| Date | 3/1/08 | | | |
| Time | 1400 | | | |
| Meas. From | Concrete Core | | | |

**Weather:** Cloudy, 40's; 0-5 mph wind (W)
**Date/Time Start:** 3/1/08 1300
**Date/Time Finish:** 3/1/08 1700

**Location Plan**
See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | C | | 0-9" = Concrete core Note: wet directly under concrete core | | |
| 1 | | | HC | | 9" - 43" = Brown F Sand, trace silt, gravel (cobble @ 2' bgs) | FILL | |
| 2 | | | HC | | | | |
| 3 | | | HC | | 43" - 46" = Grey F Sand | | |
| 4 | | | HC | | 46" - 5' = Dark brown Peat | PT | |
| 5 | | MC | 75 | 0.1 | 0-36" = PEAT | PT | |
| | | MC | | | 36-39" = Light grey F Sand, little silt | SM | Saturated |
| 7 | | MC | | | | | |
| | | MC | | | | | |
| 9 | | MC | 68 | 0.1 | 0-2' = Light grey F Sand, trace silt | SM | |
| | | MC | | | 2-2'-8" = Light grey/brown F Sand, trace silt | | |
| 11 | | MC | | | | | |
| | | MC | | | | | |
| 13 | | MC | 62 | 0.1 | Light grey, F Sand, trace silt | SM | |
| | | MC | | 5.5 | Red brown F Sand, some silt at bottom 10" of macro-core | | |
| 15 | SB-53 (15-17') | MC | | | | | |
| | | MC | | | | | |
| 17 | SB-53 (17-19') | MC | 25 | 0.2 | Red brown F Sand, trace silt and rounded gravel | SM | |
| | | MC | | | | BEDROCK | Possible Bedrock/Refusal |
| 19 | | | | | **End of Boring @ 18.5' bgs** | | |
| | | | | | | | |
| 21 | | | | | | | |
| | | | | | | | |
| 23 | | | | | | | |
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| 25 | | | | | | | |
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| 31 | | | | | | | |
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| 33 | | | | | | | |
| | | | | | | | |
| 35 | | | | | | | |
| | | | | | | | |
| 37 | | | | | | | |

**SAMPLING METHOD**
MC = MACRO-CORE
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
All work performed inside UPS parking garage
Cored concrete slab with core barrel. Hand cleared with hand auger to 5' bgs
Macro-cored to 18.5' bgs. Refusal at 18.5' bgs, possible bedrock

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO. SB-54** Sheet 1 of 1

**Location Description:**
Consolidated Edison
W. 45th Street (Bikepath)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | Not Observed | | | |
| Date | 4/26/07 | | | |
| Time | | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Cool, overcast, 50's; 0-5 mph wind (W)

**Date/Time Start:** 4/26/07 1045

**Date/Time Finish:** 4/26/07 1400

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-6" = Asphalt | | |
| 1 | | | HC | | 6-8" = Trap rock | | |
| 2 | | | HC | 0.0 | 8"-4' = Light brown fmc SAND, some FC Gravel; trace silt | FILL | |
| 3 | | | HC | 0.0 | 4-6' = Brown, F SAND, little silt, mica fragments and fc gravel; brick at 4' bgs | | |
| 4 | | | HC | | | | |
| 5 | | | HC | | | | |
| 6 | | | AIR | 0.0 | 6-7' = Brown fm SAND, little silt and FC Gravel (moist @ 7' bgs) | | |
| 7 | SB-54 (7-9') | 3-3-50/5 | 20 | 0.0 | Moist, brown FMC SAND, some FC angular Gravel; trace silt | SP | |
| | | | | | (white quartzite in tip of shoe of spoon) | | |
| 9 | SB-54 (9-11') | 7-27-38-50/5 | 20 | 0.0 | Same as above interval with weathered (schist) rock @ bottom of spoon | | |
| | | | | | | BEDROCK | Possible |
| 11 | | | | | **End of Boring @ 11' bgs** | | |
| | | | | | | | |
| 13 | | | | | | | |
| | | | | | | | |
| 15 | | | | | | | |
| | | | | | | | |
| 17 | | | | | | | |
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| 19 | | | | | | | |
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| 31 | | | | | | | |
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| 33 | | | | | | | |
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| 35 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Hand cleared to 7' bgs. Used Air Knife from 6-7' bgs
Auger/split spoon refusal at 11' bgs, (possibly bedrock)
HCN not detected

**PARSONS**
**DRILLING RECORD**

**BORING/** Sheet 1 of 1
**WELL NO. MW-55/SB-55**

**Contractor** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul A. Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
W. 45th Street; NY, NY
Bikepath

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~7' bgs | DTW 9.89' | | |
| Date | 4/27/07 | 5/22/07 | | |
| Time | | | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Rainy, cool, 50's; 0-5 mph wind (W)

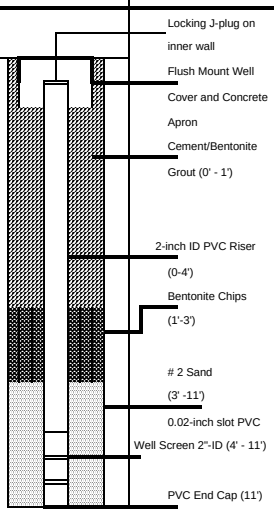
**Date/Time Start:** 4/26/07 0725

**Date/Time Finish:** 4/26/07 1030

**Location Plan**

N

See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | | | | | |  | Locking J-plug on inner wall |
| | | Vac-tron | | | 0-3" = Asphalt | | Flush Mount Well Cover and Concrete Apron |
| 1 | | Vac-tron | | | 3-8" = Trap rock | | Cement/Bentonite Grout (0' - 1') |
| | | Vac-tron | | 0.0 | 8"- 6.5' Brown fm SAND, little silt, fc gravel (subrounded), and mica fragments | | |
| 3 | | Vac-tron | | | (slag @ 4' bgs) | | |
| | | Vac-tron | | | | | |
| 5 | | Vac-tron | | | | | 2-inch ID PVC Riser (0-4') |
| | | Vac-tron | | | | | Bentonite Chips (1'-3') |
| 7 | | Vac-tron | | | | | |
| | MW-55 (7-9') | 3-3-3-4 | 33 | 0.0 | Wet, brown fmc SAND, some angular fc Gravel (schist fragments); trace silt | | # 2 Sand (3' -11') |
| 9 | | | | | | | |
| | | 5-13-7-5 | 16 | 0.0 | Wet, brown fm SAND, some fc angular Gravel; trace silt | | 0.02-inch slot PVC Well Screen 2"-ID (4' - 11') |
| 11 | | | | | (quartzite in shoe) | | |
| | MW-55 (11-13') | 5-50/5 | 12 | 0.0 | Weathered ROCK and QUARTZITE, some fmc brown Sand; trace silt | | PVC End Cap (11') |
| 13 | | | | | | | |
| | | | | | **End of boring @ 11.5' bgs** | | |
| 15 | | | | | | | |
| 17 | | | | | | | |
| 19 | | | | | | | |
| 21 | | | | | | | |
| 23 | | | | | | | |
| 25 | | | | | | | |
| 27 | | | | | | | |
| 29 | | | | | | | |
| 31 | | | | | | | |
| 33 | | | | | | | |
| 35 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Boring was hand cleared to 6.5' bgs;
Hollow Stem Augers used from 7'-11.5' bgs. Possible bedrock @ 11.5' bgs
SB-55 was converted in MW-55, due to gw observation. HCN not detected

**PARSONS**
**DRILLING RECORD**

**BORING/** Sheet 1 of 1
**WELL NO.** SB-56

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street (Bikepath)

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | ~6' bgs | | | |
| Date | 4/27/07 | | | |
| Time | | | | |
| Meas. From | Hand Clearance | | | |

**Weather:** Overcast, cool, 50-60's; 0-5 mph wind (W)

**Date/Time Start:** 4/30/07 0735

**Date/Time Finish:** 4/30/07 1000

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0 - 3" = Asphalt | | |
| 1 | | | HC | | 3" - 7" = Trap rock | | |
| | | | HC | 0.0 | 7"- 16" = Brown fc GRAVEL some fmc Sand, litte silt | FILL | |
| 3 | | | HC | 0.0 | 16" - 5' = Wet, brown fmc SAND, little gravel, little silt | | |
| | | | HC | | | | |
| 5 | | | HC | | | | |
| | | | AIR | 0.0 | 5-6' = Same as above (16"-5') | | |
| 7 | | - | - | - | Drilled down to 7' bgs | - | |
| | SB-56 (7-9') | 3-3-21-50/3 | 20 | 0.0 | Brown fm SAND, some angular fc Gravel (schist / c gravel in shoe) | SP | |
| 9 | | | | | | | |
| | | 50/1 | NR | NR | Weathered rock in shoe (schist) | | |
| 11 | | | | | | Bedrock | Possible |
| | | | | | **End of Boring @ 9' bgs** | | |
| 13 | | | | | | | |
| | | | | | | | |
| 15 | | | | | | | |
| | | | | | | | |
| 17 | | | | | | | |
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| 37 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Hand cleared to 6' bgs. Used air knife from 5-6' bgs
Auger/split spoon refusal @ 9' bgs, possibly bedrock
HCN not detected

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. SB-57** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers/Khaled Eltahan
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 45th Street (Bikepath)

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | ~7' bgs | | | |
| Date | 5/1/07 | | | |
| Time | 0800 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Partly cloudy, cool, 50's-60's; 0-5 mph wind (W)

**Date/Time Start:** 5/1/07 0740

**Date/Time Finish:** 5/1/07 1200

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-9" = Asphalt | | |
| 1 | | | HC | 0.0 | 9" - 4.5' = Brown fm SAND, some fc rounded/angular gravel; little silt | FILL | |
| 2 | | | HC | | | | |
| 3 | | | HC | | | | |
| 4 | | | HC | | | | |
| 5 | | | HC | 0.0 | 4.5' - 6' = Brown fm SAND, little silt | FILL | |
| 6 | | | HC | | | | |
| | | - | - | - | Drilled down to 7' bgs | | |
| 8 | SB-57 (7-9') | 7-20-4-14 | 25 | 0.0 | 0-5" = Brown SILT, some fm Sand and fc angular Gravel | ML | |
| | | | | | | | |
| 10 | | 2-10-1-1 | 25 | 0.0 | Olive SILT, some f angular Gravel | ML | |
| | | | | | (pine, creosol, sewer like odor) | | |
| 12 | SB-57 (11-13') | 30-6-50/4 | 29 | 0 | Same as above interval | ML | |
| | | | | | | BEDROCK | Possible |
| 14 | | | | | **End of Boring @ 12.4' bgs** | | |
| | | | | | | | |
| 16 | | | | | | | |
| | | | | | | | |
| 18 | | | | | | | |
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**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Hand clearance to 6' bgs
Auger/split spoon refusal @ 12.4' bgs, possibly bedrock
HCN not detected

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO. SB-58** Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Tony Palomeque / Tom Sherin
**Inspector:** Paul Kies
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**Location Description:**
Consolidated Edison
W. 44th Street

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | ~9' bgs | | | |
| Date | 5/8/07 | | | |
| Time | 0800 | | | |
| Meas. From | Split-Spoon | | | |

**Weather:** Clear, warm, 60's-70's; 0-5 mph wind (W)

**Date/Time Start:** 5/8/07 0725

**Date/Time Finish:** 5/8/07 0830

**Location Plan**

See Site Plan

| Sample Depth | Sample I.D. | SPT | % Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | USCS | COMMENTS |
|---|---|---|---|---|---|---|---|
| +3 | | | | | | | |
| | | | | | | | |
| +2 | | | | | | | |
| | | | | | | | |
| +1 | | | | | | | |
| | | | | | | | |
| 0 | | | HC | | 0-5" = Concrete | | |
| 1 | | | HC | | 5-6" = Trap rock | | |
| 2 | | | HC | 0.0 | 6" - 1' = Dark grey fmc SAND, little fc gravel | FILL | |
| 3 | | | HC | 0.0 | 1' - 5' = Brown f SAND, little silt, trace fmc gravel, mica fragments | | |
| 4 | | | HC | | | | |
| 5 | | | HC | | | | |
| 6 | | 2-2-1-2 | 8 | 0.0 | Brown fm SAND; trace silt (concrete fragments in tip of spoon) | SP | |
| | | | | | | | |
| 8 | SB-58 (7-9') | 4-4-5-4 | 33 | 0.0 | Same as above interval, with little f angular gravel, trace silt | SP | |
| | | | | | | | |
| 10 | | 2-4-4-3 | 62 | 0.0 | Wet, brown/dark grey fm SAND, little f angular gravel; trace silt | SP | |
| | | | | | (very slight hydrocarbon like odor) | | |
| 12 | SB-58 (11-13') | 3-4-7-8 | 62 | 0.0 | 0-7" = Grey fm SAND | SW | |
| | | | | | 7 "- 15" = Weathered Rock (SCHIST) | BEDROCK | Possible |
| 14 | | 50/2 | 8 | 0.0 | Weathered Rock (SCHIST) | BEDROCK | Possible |
| | | | | | | | |
| 16 | | | | | **End of Boring @ 13' bgs** | | |
| | | | | | | | |
| 18 | | | | | | | |
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| 34 | | | | | | | |
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| 36 | | | | | | | |
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**SAMPLING METHOD**
SS = SPLIT SPOON
C = CORED SAMPLE
HC = HAND CLEARED
PS = PISTON SAMPLER
WH = WEIGHT OF HAMMER

**COMMENTS:**
Hand clearance to 5' bgs
Auger/split spoon refusal @ 13' bgs, possibly bedrock
HCN not detected

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-3
Sheet 1 of 1
Location Description:

Weather: Cloudy, 40°F
Date/Time Start: 4-1-03 / 1305
Date/Time Finish: 4-2-03 / 1150

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 Feet. Cuttings; Lt Brn to Olive Gray; F. SAND, some Fc Gravel; loose; moist. | | | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 0 | SB3- | | 50 | 7 | Lt Brn; F. SAND, trace F. Gravel; loose; wet (5.0-5.7) | | SP | |
| 0 | 0507 | 6 | | 2 | | | | |
| | | | | 3 | Lt Brn; SILT; medium stiff; moist (5.7-6.0). | | ML | |
| | | | | 6 | | | | |
| 0.1 | | | 40 | 3 | Dk Brn; Fm SAND, little Fc Gravel; medium dense; saturated. | | SP | |
| 0.7 | | 8 | | 4 | | | | |
| | | | | 7 | Weathered SCHIST in spoon. | | | |
| | | | | 50/2" | Spoon Refusal at 9 Feet. | | | |
| | | 10 | | | Auger Refusal at 10 Feet. | | | |
| | | | | | Core Run: 10-15 Feet. Recovery: 58/60 = 97% RQD: 55/60 = 92% | | | |
| | | 12 | | | Dk Gray; mica SCHIST; micaceous and mafic minerals (phaneritic); highly folded (10-10.5) White/Pink; QUARTZ; top and bottom surfaces of vein dip at 45° (10.5-11.5). | | | |
| | | 14 | | | Dk Gray; mica SCHIST; micaceous and mafic minerals; highly folded (11.5-15). | | | |
| | | | | | Total Depth = 17 Feet. | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Contractor: WGI | | | | | DRILLING RECORD | BORING/ WELL NO. SB-5 | | |
| Driller: Bob Vcrpent | | | | | PROJECT NAME ConEd-W. 45th St. | Sheet 1 of 1 | | |
| Inspector: W. Lilley | | | | | PROJECT NUMBER 440090 | Location Description: Northside - center | | |
| Rig Type: Failing 6 | | | | | | | | |
| Method: HSA / coring | | | | | Weather Cloudy 15° Windy | Location Plan See Site Plan | | |
| GROUNDWATER OBSERVATIONS | | | | | Date/Time Start 1/27/03 8:30 | | | |
| Water Level | 5.0' | | | | Date/Time Finish 1/28/03 11:32 | | | |
| Date | 1/27 | | | | | | | |
| Time | 12:00 | | | | | | | |
| Meas From | Grade | | | | | | | |
| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
| | | 0 | | | | | | |
| | | | | | Brown sand and gravel (fill) | | | |
| 0 | | 2 | 37 | 8 | | | | |
| | | | | 8 | Brown to gray sand, some gravel, little silt (moist to wet) No NAPL | | | |
| | | | | 2 | | | | |
| 0.3 | | 4 | 33 | 2 | | | | |
| | | | | 4 | Brown sand and gravel, little silt (moist to wet) No NAPL | | | |
| | | | | 3 | | | | |
| 52.7 | | 6 | 33 | 5 | | | | |
| | | | | 8 | | | | |
| | | | | 20 | Brown sand and gravel, little silt (wet) slight sheen & odor No NAPL | | | |
| | | | | 14 | | | | |
| 1356 | | 8 | 50 | 8 | | | | |
| | | | | 2 | | | | |
| | | | | 1 | SKA (saturated, soft) No NAPL, sheen, or odor | | | |
| | | | | 1 | | | | |
| 1900 | | 10 | 50 | 4 | | | | |
| | | | | 9 | | | | |
| | | | | 8 | Brown gravel, some sand, little silt (saturated) No NAPL | | | |
| | | | | 24 | | | | |
| 3500 | | 12 | 25 | 20 | | | | |
| | | | | 10 | | | | |
| | | | | 7 | Brown/gray sand and gravel, concrete & brick (wet) | | | |
| | | | | 24 | | | | |
| 12 | | 14 | 20 | 20 | | | | |
| | | | | 10 | | | | |
| | | | | 15 | Brown gravel & sand, little silt (wet) NO NAPL | | | |
| | | | | 20 | | | | |
| 1600 | | 16 | 40 | 60 | | | | |
| | | | | 28 | | | | |
| | | | | 50/4" | Brown & silver gravel, some sand, little silt, weathered rock Auger refusal at 16.5' | | | |
| | | 18 | | | 0.6' concrete | | | |
| | | | | | 1.0' weathered mica schist | | | |
| | | | | | 1.0' mica schist | | | |
| | | | | | 0.25' weathered mica schist | | | |
| | | 20 | | | Cored to 21.5' (NO NAPL) | | | |
| | | | | | RQD=13% | | | |

STANDARD PENETRATION TEST

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-6
Sheet: 1 of 1
Location Description:

Weather: Cloudy, 50°F
Date/Time Start: 4-2-03, 1245
Date/Time Finish: 4-2-03, 1330

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings: Lt Brn; fm SAND, some Silt/Clay, trace fc Gravel; saturated at 3.5 Ft. | | SM/SC | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 0.2 | SB6- | | 45 | 2 | Lt Brn; fm SAND, little Silt/Clay, | | SW | |
| 3 | 0507 | 6 | | 2 | trace f. Gravel; medium dense; | | SCHIST | |
| | | | | 12 | saturated (5.0-5.4). | | | |
| | | | | 30 | Dk Gray to Amber; SCHIST, weathered (5.4-5.9) | | | |
| | | 8 | | | Auger refusal at 7 Feet. | | | |
| | | 10 | | | | | | |
| | | 12 | | | | | | |
| | | 14 | | | | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-7
Sheet: 1 of 1
Location Description:

Weather: Sunny, 40 °F
Date/Time Start: 4-1-03, 1225
Date/Time Finish: 4-1-03, 1300

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings: Lt Brn; fm SAND, little fc Gravel; moist. | | SW | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 0.1 | SB7-0507 | 5 | 65 | 8 | Lt Brn; fm SAND, trace F. Gravel; medium dense; wet (5.0-6.0). | | SP | |
| 0 | | 6 | | 6 | | | | |
| 0 | | | | 20 | Amber; SCHIST, weathered; moist (6.0-6.3). | | SCHIST | |
| | | | | 50/3" | | | | |
| | | 8 | | | Auger Refusal at 7 feet. | | | |
| | | 10 | | | | | | |
| | | 12 | | | | | | |
| | | 14 | | | | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison 0 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-8
Sheet: 1 of 2
Location Description:

Weather: Partly Cloudy, 55°F
Date/Time Start: 4-23-03, 1010
Date/Time Finish: 4-23-03, 1440

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings; Lt Brn; fmc SAND, little fc Gravel; wet. | | SW | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| ~~MW-6~~ 2 | | | 30 | 29 | Olive Gray; F. SAND, little fc Gravel; micaceous grains; medium dense; saturated. | | SP | |
| | | 6 | | 16 | | | | |
| | | | | 8 | | | | |
| | | | | 6 | | | | |
| 8 | | | 30 | 2 | Lt Brn; F. SAND, trace fc Gravel; loose; saturated. | | SP | |
| | | 8 | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 2 | | | | |
| 12 | | | 25 | 1 | Lt Brn; F. SAND, trace fc Gravel; very loose; saturated; slight NAPL sheen, Red brick in tip of spoon. | | SP | |
| | | 10 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 2 | | | | |
| 4 | SB8-1113 | | 85 | 1 | Lt Brn; F. SAND, trace F. Gravel; | | SP | |
| 10 | SB8-1113MS12 | | | 5 | loose; saturated. | | SP | |
| 3 | SB8-1113MD | | | 3 | Lt Green; Fm SAND, trace F. Gravel; | | | |
| | | | | 3 | loose; saturated. | | | |
| 5 | | | 50 | 39 | Lt Green; Fm SAND, trace F. Gravel; | | SP | |
| 2 | | 14 | | 19 | micaceous grains; medium dense; saturated (13.0-13.2). | | SCHIST | |
| | | | | 3 | Lt Gray; SCHIST; weathered; medium | | | |
| | | | | 10 | dense; saturated (13.2-14.0). | | | |
| 23 | | | 35 | 6 | Olive Gray; SCHIST; weathered; | | SCHIST | |
| | | 16 | | 9 | medium dense; saturated. | | | |
| | | | | 11 | | | | |
| | | | | 10 | | | | |
| | | | 0 | 1 | No Recovery, wood in tip of spoon. | | NR | |
| | | 18 | | 10 | | | | |
| | | | | 8 | | | | |
| | | | | 1 | | | | |
| 22 | | | 30 | 4 | Olive Gray; F. SAND, trace F. Gravel; | | SP | |
| | | 20 | | 5 | micaceous grains and NAPL film; | | | |
| | | | | 5 | medium dense; saturated. | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-8

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

Weather
Date/Time Start
Date/Time Finish

Location Plan: See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 21 | | 60 | Continued from above. | | | |
| 13 | | | 25 | 25 | Lt Brn to Olive Gray; F. SAND, | | SP | |
| | | | | 11 | trace f. Gravel; medium dense; | | | |
| | | | | 5 | saturated. | | | |
| | | 23 | | 5 | | | | |
| 363 | | | 30 | 5 | Olive Gray; f. SAND, trace f. Gravel | | SP | |
| | | | | 4 | medium dense; saturated (23.0-23.3). | | | |
| | | | | 6 | Olive Gray; fm SAND, little f. Gravel; NAPL | | | |
| | | 25 | | 2 | present; saturated (23.3-23.4). Olive Gray; f. SAND, trace f. Gravel; med dense, saturated (23.4-23.6) | | | |
| 18 | SBS-2527 | | 45 | 25 | Olive Gray; f. SAND, trace f. Gravel; | | SP | |
| 492 | D042303 | | | 11 | wood present; medium dense; saturated (25.0-25.1). | | SCHIST | |
| | | | | 3 | Amber to Lt Gray; SCHIST; weathered; | | | |
| | | 27 | | 4 | saturated (25.1-25.9). | | | |
| | | | 0 | 9 | No Recovery. Steel plug lost at | | NR | |
| | | | | 5 | bottom of borehole | | | |
| | | | | 5 | | | | |
| | | 29 | | 5 | | | | |
| | | | | | Augered to 36 feet. | | | |
| | | 31 | | | | | | |
| | | | | | | | | |
| | | 33 | | | | | | |
| | | | | | | | | |
| | | 35 | | | | | | |
| | | | | | Auger refusal at 36 feet. | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

| | | | |
|---|---|---|---|
| Contractor: ADT | DRILLING RECORD | BORING/ WELL NO. SB-9 | |
| Driller: Victor Champagne | PROJECT NAME Con Edison W 45th St. Works | Sheet 1 of 1 | |
| Inspector: Mike Wilkinson/AD | PROJECT NUMBER 440090 | Location Description: | |
| Rig Type: CME LC-60 | | | |
| Method: HSA | Weather Cloudy, intermittent light rain, 40°F | Location Plan: See Site Plan | |
| GROUNDWATER OBSERVATIONS | Date/Time Start 4-4-03 / 1115 | | |
| Water Level / Date / Time / Meas. From | Date/Time Finish 4-7-03 / 1030 | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | 2 | | | Hand Augered to 5 feet. Cuttings; Brown, fm SAND, saturated. | | | |
| | | 4 | | | | | | |
| 0 | | | 25 | 33 | Brown; fm SAND, little cSand to f. Gravel; micaceous grains; ~~some~~ medium dense; saturated. | | SW ~~SP~~ | |
| | | 6 | | 14 | | | | |
| | | | | 4 | | | | |
| | | | | 2 | | | | |
| 0 | | | 25 | 11 | Brown; fm SAND, fc Gravel; micaceous grains; medium dense; saturated. | | SP | |
| | | 8 | | 8 | | | | |
| | | | | 4 | | | | |
| | | | | 9 | | | | |
| 2.5 | | | 8 | 7 | Dk Brn to Olive Gray; fm SAND, little f. Gravel, little Silt; medium dense; saturated. | | SM | |
| | | 10 | | 3 | | | | |
| | | | | 25 | | | | |
| | | | | 4 | | | | |
| 25 | SB9-1113 | | 25 | 4 | Olive Gray to Lt Brn; mc SAND, little f Gravel, little ~~Silt~~ Silt, NAPL odor present; very dense; saturated. (wood present) | | SM | |
| | | 12 | | 7 | | | | |
| | | | | 50/5" | | | | |
| | | 14 | | | Core Run: 13-18 Feet<br>Recovery: 4.3/5.0 = 86%<br>RQD: 29/60 = 48%<br>Dk Gray; SCHIST; highly folded with siliceous veins throughout; broken into pieces less than 4" long (13-15.4).<br>Dk Gray; SCHIST; competent (15.4-16.8).<br>Pink; QUARTZ; vein with 45° fracture at 17.4 ft. (16.8-17.8)<br>Dk Gray; SCHIST; competent (17.8-18.0). | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | | | | Total Depth = 18 feet | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-10
Sheet: 1 of 2
Location Description:

Weather: Sunny, 50-60°F
Date/Time Start: 4-14-03 / 0900
Date/Time Finish: 4-15-03 / 0805
Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | 2 | | | Augered to 5 Feet. Cuttings: Lt Brn; CLAY, some fn Sand, little fc Gravel; saturated. | | CL | |
| | | 4 | | | | | | |
| 0 | | 6 | 35 | 2<br>50/5" | Olive Gray; fmc SAND, little f. Gravel, trace Clay/Silt; saturated (5.0-5.2). Amber; SCHIST, weathered (5.2-5.7). | | SW<br>SCHIST | |
| | | 8 | | | Augered to 9 Feet. | | | |
| 0.4 | | 10 | 35/40<br>20 | 3<br>4<br>4<br>3 | Olive Gray; fc GRAVEL, little fmc Sand, trace Clay/Silt; loose; saturated. | | GW | |
| | | 12 | 0 | 3<br>2<br>2<br>2 | No Recovery - Rock in tip of spoon. | | NR | |
| | | 14 | 0 | 7<br>4<br>4<br>3 | No Recovery - Loose gravel in spoon. | | NR | |
| | | 16 | | | Void Space (15-23 Feet). | | VOID | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-10

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

**GROUNDWATER OBSERVATIONS**

Weather
Date/Time Start
Date/Time Finish

Location Plan — See Site Plan

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 21 | | | | | | |
| | | | | | Continued from above. | | VOID | |
| | | 23 | | | | | | |
| 0.8 | | | 25 | 48 | Lt Greenish Gray; CEMENT. | | CEMENT | |
| | | | | 5 | | | | |
| | | | | 3 | | | | |
| | | 25 | | 3 | | | | |
| 12 | | | 15 | 3 | Brn; F. SAND, little Fc Gravel; loose; saturated. | | SP | |
| | | | | 3 | | | | |
| | | | | 3 | | | | |
| | | 27 | | 2 | | | | |
| 30+9 | | | 30 | 35 | DK Gray; Fm SAND, some Fc Gravel; micaceous grains; medium dense; saturated; creosote-like odor. | | SP | |
| | | | | 11 | | | | |
| | | | | 13 | | | | |
| | | 29 | | 13 | | | | |
| 30 | | | 15 | 1 | Olive Gray; Fm SAND, little Clay, little F. Gravel; amber colored NAPL present; medium dense; saturated. | | SC | |
| | | | | 1 | | | | |
| | | | | 14 | | | | |
| | | 31 | | 8 | | | | |
| 82 | | | 35 | 19 | Lt Brn; CLAY; saturated (31.0-31.5); | | CL | |
| 38 | | | | 10 | Olive Gray; F. SAND, trace F. Gravel; medium dense; saturated (31.5-31.7). | | SP | |
| | | | | 6 | | | | |
| | | 33 | | 6 | | | | |
| 56 | | | 50 | 1 | Olive Gray; F. SAND; med dense; saturated (33.0-33.4). | | SP | |
| 9999 | SB10-3335 | | | 1 | DK Gray; F. SAND; trace F. Gravel; medium dense; saturated; strong NAPL odor (33.4-33.6). | | SP | |
| | | | | 17 | | | | |
| | | 35 | | 60/2" | Red Brn; BRICK. | | BRICK | |
| | | | | | Augered to 36.5 Feet | | | |
| | | | | | Auger Refusal at 36.5 Feet. | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-11
Sheet: 1 of 2
Location Description:

GROUNDWATER OBSERVATIONS

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather: Cloudy, some rain, 50°F
Date/Time Start: 4-22-03 / 1150
Date/Time Finish: 4-22-03 / 1500
Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | 2 | | | Augered to 5 Feet. Cuttings: Olive Gray; SILT, some F. Sand, little fc Gravel; wood present; wet. | | | |
| | | 4 | | | | | | |
| 33 | SB11-0507 | 6 | 35 | 3 | Olive Gray to DK Gray; fm SAND, little F. Gravel; water-like NAPL with strong odor; loose; saturated | | SP | |
| 61 | | | | 3 | | | | |
| | | | | 2 | | | | |
| | | | | 3 | | | | |
| | | | 0 | 3 | No Recovery | | NR | |
| | | 8 | | 2 | | | | |
| | | | | 3 | | | | |
| | | | | 3 | | | | |
| 0.3 | | | 25 | 1 | Lt Brn; fm SAND, little fc Gravel; slight NAPL odor; loose; saturated | | SP | |
| | | 10 | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 2 | | | | |
| 0 | | | 20 | 1 | Lt Brn; SILT, some fmc Sand, trace F. Gravel; medium stiff; saturated. | | ML | |
| | | 12 | | 3 | | | | |
| | | | | 3 | | | | |
| | | | | 1 | | | | |
| | | | 0 | 1 | No Recovery | | NR | |
| | | 14 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| 0 | | | 5 | 1 | Lt Brn; fm SAND, trace F. Gravel; sewage-like odor; very loose; saturated. | | SP | |
| | | 16 | | 1 | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 18 | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOH | Olive Gray; fm SAND trace F. Gravel; sewage-like odor; very loose; saturated (possible slough) | | SP | |
| | | 20 | | WOH | | | | |
| | | | | WOH | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

PROJECT NAME
PROJECT NUMBER

BORING/ WELL NO. SB-11

Sheet 2 of 2

Location Description:

Location Plan See Site Plan

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 21 | | WOH | | | | |
| | | | | WOH | Continued From above | | | |
| | | | | WOH | | | | |
| | | | | WOH | | | | |
| | | 23 | | WOH | | | | |
| 18 | | | 30 | 11 | Olive Gray to DK Gray; Fm SAND, little F Gravel; with concrete Fragments; dense; saturated. | | SP | |
| | | | | 18 | | | | |
| | | | | 18 | | | | |
| | | 25 | | 50/1" | | | | |
| | | | | | Auger Refusal at 25 Feet. | | | |

STANDARD PENETRATION TEST

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

# DRILLING RECORD

Contractor: WGI
Driller: Bob Verpent
Inspector: W. Lilley
Rig Type: Failing 6
Method: HSA

BORING/WELL NO. SB-12

PROJECT NAME ConEd-W. 45th St
PROJECT NUMBER 440090

Sheet 1 of 1
Location Description: East center

Weather 9°, Cloudy/Windy
Date/Time Start 1/28/03 9:29
Date/Time Finish 1/28/03 14:23

Location Plan — See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Brown sand and gravel (fill) | | | |
| 0 | | 2 | 25 | 3 | | | | |
| | | | | 11 | Brown to gray sand, silt & | | | |
| | | | | 5 | gravel (fill) No NAPL, odor | | | |
| | | | | 10 | or sheen | | | |
| 0 | | 4 | | 3 | | | | |
| | | | | 15 | Rock & brick (fill) | | | |
| | | | | 12 | (moist to wet) | | | |
| | | | | 11 | No NAPL, odor, or sheen | | | |
| 0 | | 6 | | 14 | | | | |
| | | | | 11 | Black & gray sand & gravel | | | |
| | | | | 24 | weathered mica schist | | | |
| | | | | 16 | (wet) MGP odor | | | |
| NA | | 8 | | 1 | | | | |
| | | | | | VOID (no sample) | | | |
| 57 | | 10 | | 109 | Brown sand & gravel | | | |
| | | | | 9 | 3" mica schist at bottom | | | |
| | | | | 7 | (wet) MGP odor | | | |
| | | | | 9 | | | | |
| 0 | | 12 | | 10 | | | | |
| | | | | 12 | Red/brown coarse-med fine sand | | | |
| | | | | 14 | | | | |
| | | | | 16 | Red/brown sand & gravel | | | |
| 0 | | 14 | | 5 | very stiff (moist) | | | |
| | | | | 8 | No NAPL, odor, sheen | | | |
| | | | | 17 | | | | |
| | | | | 48 | | | | |
| 0 | | 16 | | 14 | | | | |
| | | | | 100/5" | Brown sand, little silt | | | |
| | | | | | (moist to wet) | | | |
| 0 | | 18 | | | No NAPL, odor, sheen | | | |
| | | | | | | | | |
| | | | | | Auger refusal at 19.9' | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-13
Sheet: 1 of 1
Location Description:

Weather: Cloudy, 55-60°F
Date/Time Start: 4-21-03 / 1040
Date/Time Finish: 4-21-03 / 1330

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings: Lt Brn; fm SAND, little Silt, little fc Gravel; wet. | | | |
| | | 2 | | | | | | |
| | | | | | | | | |
| | | 4 | | | | | | |
| 0.5 | | | 35 | 3 | Dk Gray; SCHIST; saturated. & weathered; | | SCHIST | |
| | | 6 | | 12 | | | | |
| | | | | 23 | | | | |
| | | | | 15 | | | | |
| 0 | | | 15 | 7 | Red; BRICK. | | BRICK | |
| | | 8 | | 4 | Dk Gray; BRICK. | | | |
| | | | | 4 | | | | |
| | | | | 2 | | | | |
| | | | 0 | 5 | No Recovery | | NR | |
| | | 10 | | 22 | | | | |
| | | | | 7 | | | | |
| | | | | 4 | | | | |
| 6 | | | 20 | 11 | Lt Greenish Gray; CEMENT | | CEMENT | |
| | | 12 | | 50/5" | | | | |
| | | | | | Augered to 14 feet. | | | |
| | | 14 | | | | | | |
| | | | | | Auger Refusal at 14 feet. | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-15
Sheet: 1 of 1
Location Description:

Weather: Cloudy, 40°F
Date/Time Start: 4-18-03 / 1035
Date/Time Finish: 4-18-03 / 1200

Location Plan: See Site Plan

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | Augered to 5 feet. | | | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 1 | SB15-0507 | 6 | 15 | 1 | Olive Gray; F. SAND, trace F. Gravel; sheen and NAPL odor present; loose; saturated. | | SP | |
| | | | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 1 | | | | |
| | | | 0 | 1 | No Recovery, red brick in tip of spoon. | | NR | |
| | | 8 | | 1 | | | | |
| | | | | 50/2" | | | | |
| | | 10 | | | Augered to 13 Feet, hard material. | | | |
| | | 12 | | | | | | |
| | | 14 | | | Red Brick and Cement | | BRICK & CEMENT | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS: Hard material (brick) From 8-15 Feet. Possibly drilling on holder wall.

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-16
Sheet: 1 of 1
Location Description:

Weather: Cloudy, 45°F
Date/Time Start: 4-21-03 / 1330
Date/Time Finish: 4-22-03 / 1130

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 10 feet. | | | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| | | 6 | | | | | | |
| | | 8 | | | | | | |
| | | 10 | | | | | | |
| | | | 4 | 6 | Lt Greenish Gray; CEMENT. | | CEMENT | |
| | | | | 4 | | | | |
| | | | | 3 | | | | |
| | | 12 | | 50/5" | | | | |
| | | | | | Core Run: 12-17 feet. | | | |
| | | | | | Recovery: 40/60 = 67% | | | |
| | | | | | RQD: 24/60 = 40% | | | |
| | | 14 | | | Lt Gray; CONCRETE (12-13.5) | | | |
| | | | | | No Recovery (13.5 to 14.5) → soft. | | | |
| | | | | | Lt Gray; QUARTZITE(?); cemented silica grains with sparse micas (14.5-17) | | | |
| | | 16 | | | | | | |
| | | | | | Total Depth = 17 Feet | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

P:\739437\mxd\FSP\Fig4

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-17
Sheet: 1 of 2
Location Description:

GROUNDWATER OBSERVATIONS

Weather: Sunny, 70-80°F (15th) Cloudy, 45°F (17th)
Location Plan: See Site Plan
Date/Time Start: 4-15-03 / 0900
Date/Time Finish: 4-17-03 / 1120

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. No cuttings. | | | |
| | | 2 | | | | | | |
| | | | | | | | | |
| | | 4 | | | | | | |
| 0.4 | | | 50 | 2 | Olive Gray; f. SAND, little Clay, trace f. Gravel; very loose; saturated | | SM | |
| 0.4 | | 6 | | 1 | | | | |
| | | | | 2 | | | | |
| | | | | 1 | | | | |
| 0 | | | 15 | 50/3" | Olive Gray; fm SAND, trace f. Gravel; micaceous grains present; saturated. Gravel (schist) in tip of spoon. Auger refusal at 8.5 feet | | SP | |
| | | 8 | | | | | | |
| | | | | | Augered to 10 feet. DK Gray; SCHIST boulder (8.5-9.5). | | | |
| | | 10 | | | | | | |
| 0 | SB17-1012 | | 40 | 1 | Olive Gray; f. SAND, little Silt, trace fc Gravel; micaceous grains present; loose; saturated. | | SM | |
| 21 | | | | 1 | | | | |
| | | | | 3 | | | | |
| | | 12 | | 2 | | | | |
| 0.7 | | | 30 | 3 | Olive Gray to DK Gray; f. SAND some fc Gravel; micaceous grains and Schist Gravel present; dense; saturated | | SP | |
| | | | | 30 | | | | |
| | | | | 11 | | | | |
| | | 14 | | 11 | | | | |
| | | | | 5 | No Recovery. Rock in tip of spoon. | | NR | |
| | | | | 20 | | | | |
| | | | | 50/5" | | | | |
| | | 16 | | | | | | |
| | | | | | Augered to 20 feet. | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |
| 4.5 | | | 50 | 10 | Lt Gray to Lt Brn; c GRAVEL | | GP | |

STANDARD PENETRATION TEST

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-17

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan — See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 0.4 | | 21 | | 8 | | | | |
| | | | | 6 | (Schist), some F Sand; medium | | | |
| | | | | 10 | dense; saturated. | | | |
| 4 | | | 45 | 9 | Brn; F. SAND, some F. Gravel; | | SP | |
| 4 | | 23 | | 12 | dense; saturated (22.0-22.4), | | SCHIST | |
| | | | | 41 | Amber; SCHIST, weathered | | | |
| | | | | 50/2" | (22.4-22.9). Auger refusal at 24 feet. | | | |
| | | | | | Cored to determine depth to | | SCHIST | |
| | | 25 | | | bedrock; | | | |
| | | | | | Dk Gray; SCHIST (24-26). | | | |
| | | | | | Void Space (26-31). | | VOID | |
| | | 27 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 29 | | | | | | |
| | | | | | | | | |
| | | | | | Rod Fell from 26-31 Feet. | | | |
| | | 31 | | | | | | |
| | | | | | Total depth = 31 Feet. | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: RV, Manny
Inspector: Eric Mysona
Rig Type: Failing F10
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Ed W. 45th St
PROJECT NUMBER: 440090

BORING/ WELL NO.: SB-18
Sheet 1 of 2
Location Description:

Weather: 20° cloudy, breezy
Date/Time Start: 1/15/03 13:00
Date/Time Finish: 1/16/03 9:30

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 4' | | | |
| Date | 1/15/03 | | | |
| Time | 13:12 | | | |
| Meas. From | Grade | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| NA | | | | A | moist gravel & sand (fill) no sheen, no odor | | | |
| | | | | A | | | | |
| | | | | A | | | | |
| | | 2 | | A | | | | |
| NA | | | | A | | | | |
| | | | | A | | | | |
| | | | | A | | | | |
| | | 4 | | A | | | | |
| | | | 40 | 6 | wet brick, sand, gravel & rock fragments (fill) | | | |
| 5.3 | | | | 100/4" | | | | |
| | | | | | | | | |
| | | 6 | | | | | | |
| | | | 40 | 47 | wet brick, rock, gravel (fill) slight MGP odor, no sheen | | | |
| 4.2 | | | | 60 | | | | |
| | | | | 20 | | | | |
| | | 8 | | 24 | | SNDGRV | | |
| | | | 50 | 15 | | | | |
| 20.4 | | | | 23 | | | | |
| | | | | 25 | | | | |
| | | 10 | | 30 | | | | |
| | | | 35 | 14 | wet mica schist and brick fill, no odor, no sheen | | | |
| 1.2 | | | | 15 | | | | |
| | | | | 23 | | | | |
| | | 12 | | 20 | | | | |
| | | | 40 | 42 | wet mica schist fragments, no sheen, slight MGP odor | | | |
| 3.9 | | | | 64 | | | | |
| | | | | 50 | | | | |
| | | 14 | | 34 | | | | |
| | | | 35 | 18 | wet brick & mica schist fill, no odor, no sheen | | | |
| 5.6 | | | | 25 | | | | |
| | | | | 24 | | | | |
| | | 16 | | 32 | | | | |
| | | | 10 | 10 | | | | |
| 1.7 | | | | 9 | | | | |
| | | | | 11 | | | | |
| | | 18 | | 12 | | | | |
| | | | 45 | 5 | wet black/gray micaceous sand with sheen and MGP odor | | | |
| 11.4 | | | | 4 | | | | |
| | | | | 5 | | GRVSND | | |
| | | 20 | | 20 | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

PROJECT NAME
PROJECT NUMBER

BORING/ WELL NO. SB-18

Sheet 2 of 2

Location Description:

**GROUNDWATER OBSERVATIONS**

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | | | | |
| | | | 60 | 44 | wet black/gray, well-sorted micaceous sand w/ brick fragments, sheen, MGP odor | GRVSND | | |
| 194 | | | | 42 | | | | |
| | | | | 35 | | | | |
| | | 22 | | 46 | | | | |
| | | | 60 | 39 | | | | |
| 26.5 | | | | 69 | | | | |
| | | | | 100 | wet mica schist fragments with sand, sheen, MGP odor | SNDGRV | | |
| | | 24 | | 34 | | | | |
| | | | 35 | 49 | | | | |
| 31.3 | | | | 95 | | | | |
| | | | | 100/5" | wet mica schist, NAPL, MGP odor | SCHIST | | |
| | | 26 | | | Auger refusal at 25'3" on bedrock | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 8 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 10 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 12 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 14 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 16 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 18 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 20 | | | | | | |
| | | | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: RV Gregory / Manny
Inspector: Eric Mysona
Rig Type: Failing FID
Method: HSA / Coring

**DRILLING RECORD**

PROJECT NAME: Con Ed-W 45th St
PROJECT NUMBER: 440090

BORING/ WELL NO.: SB-19
Sheet 1 of 2
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 6' | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | Grade | | | |

Weather: 28°, flurries, windy
Date/Time Start: 1/20/03 14:50
Date/Time Finish:
Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | A | moist gravel & sand (fill) no odor | | | |
| | | | | A | | | | |
| | | | | A | | | | |
| | | 2 | | A | | | | |
| | | | 35 | 5 | moist brown sand, silt & gravel, slight MGP odor No NAPL | | | |
| 25.7 | | | | 7 | | | | |
| | | | | 10 | | | | |
| | | 4 | | 10 | | | | |
| | | | 10 | 2 | | | | |
| 44.2 | | | | 7 | | | | |
| | | | | 10 | Trace NAPL at 6' | | | |
| | | 6 | | 6 | wet dark gray sand w/ some silt, little gravel & brick fill | | | |
| | | | 75 | 5 | | GRVSND | | |
| 46.8 | | | | 3 | | | | |
| | | | | 4 | NAPL-saturated 7-8' | | | |
| | | 8 | | 20 | MGP odor | | | |
| | | | 90 | 17 | | | | |
| 39.4 | | | | 20 | | | | |
| | | | | 100/3" | | | | |
| | | 10 | | 0 | | | | |
| | | | 60 | 29 | wet dark gray sand w/ gravel, concrete and brick fragments, NAPL, MGP odor | | | |
| 10.8 | | | | 40 | | | | |
| | | | | 50/1" | | | | |
| | | 12 | | 0 | | | | |
| | | | 5 | 6 | | | | |
| 2.3 | | | | 2 | | | | |
| | | | | 1 | | | | |
| | | 14 | | 0 | | | | |
| | | | 0 | 0 | | | | |
| 0.9 | | | | 0 | No recovery | SNDSLT | | |
| | | | | 0 | | | | |
| | | 16 | | 0 | | | | |
| | | | 15 | 0 | | | | |
| 1.2 | | | | 0 | | | | |
| | | | | 1 | wet dark gray silt, some sand & gravel, NAPL, MGP odor | | | |
| | | 18 | | 0 | | | | |
| | | | 30 | 4 | | | | |
| 3.7 | | | | 4 | | | | |
| | | | | 3 | wet gray silt, sand & gravel brick fill, sheen, MGP odor | | | |
| | | 20 | | 3 | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-19

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | | | | |
| | | | 25 | 3 | wet blue/gray and green | | | |
| 4.9 | | | | 4 | silt w/ some clay, little sand | CLYSLT | | |
| | | | | 5 | sheen | | | |
| | | 22 | | 5 | | | | |
| | | | 35 | 1 | wet dark gray silt with | | | |
| 5.3 | | | | 0 | some sand, sheen, strong | | | |
| | | | | 1 | odor | | | |
| | | 24 | | 2 | | | | |
| | | | 50 | 1 | | SNDSLT | | |
| 4.7 | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | 26 | | 1 | | | | |
| | | | 65 | 1 | wet soft gray silt with | | | |
| 15.4 | | | | 0 | some sand, sheen, strong | | | |
| | | | | 1 | | | | |
| | | 28 | | 0 | odor | | | |
| | | | 20 | 4 | | | | |
| 16.7 | | | | 4 | | | | |
| | | | | 4 | | | | |
| | | 30 | | 3 | | | | |
| | | | 40 | 1 | wet brown sand, some silt, | | | |
| 380 | | | | 2 | trace brick fragments, sheen | | | |
| | | | | 1 | NAPL, MG P odor | SLTSND | | |
| | | 32 | | 1 | | | | |
| | | | 40 | 0 | | | | |
| 220 | | | | 0 | | | | |
| | | | | 0 | Auger refusal at 34' | | | |
| | | 34 | | 50/0" | | | | |
| | | | 100 | | moist competent concrete | | | |
| | | | | | w/ No NAPL, No odor | | | |
| | | 36 | | | large gravel and some | | | |
| | | | | | mica schist cobbles | Concrete | | |
| | | | | | | | | |
| | | 38 | | | cored from 34 to 39' | | | |
| | | | | | 95% RQD | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 40 | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: Sal/Manny
Inspector: Eric Mysona
Rig Type: Failing F10
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Ed-W 45th St
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-20
Sheet 1 of 2
Location Description:

Weather: 20°, partly cloudy breezy
Date/Time Start: 1/22/03 9:20
Date/Time Finish:

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 3' | | | |
| Date | 1/22/03 | | | |
| Time | 9:35 | | | |
| Meas From | Grade | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | A | moist gravel w/ sand fill | | | |
| | | | | A | no odor/sheen | | | |
| | | | | A | | | | |
| | | 2 | | A | | | | |
| | | | 66 | 20 | | | | |
| 3.7 | | | | 12 | wet gravel w/ sand fill | | | |
| | | | | 34 | no odor/sheen | SNDGRV | | |
| | | 4 | | 100/1" | | | | |
| | | | 66 | 16 | | | | |
| 6.1 | | | | 100/3" | moist large mica schist boulder 5-8' | | | |
| | | 6 | | | | | | |
| | | | | A | | | | |
| NA | | | | A | wet gravel w/ sand, no sheen, no odor | | | |
| | | | | A | | | | |
| | | 8 | | A | | | | |
| | | | 60 | 12 | | | | |
| 26.6 | | | | 13 | wet plastic green/gray silty clay, no sheen/odor | SLTCLY | | |
| | | | | 3 | | | | |
| | | 10 | | 6 | | | | |
| | | | 55 | 12 | | | | |
| 15.6 | | | | 9 | wet gray sand & gravel w/ some gray/green silty clay | | | |
| | | | | 9 | no odor/sheen | GRVSND | | |
| | | 12 | | 10 | | | | |
| | | | 40 | 12 | | | | |
| 6.7 | | | | 7 | | | | |
| | | | | 6 | | | | |
| | | 14 | | 8 | | | | |
| | | | | 36 | wet gray gravel, schist fragments and sand fill | | | |
| 1.1 | | | 35 | 8 | no sheen/odor | | | |
| | | | | 7 | | | | |
| | | 16 | | 14 | | SNDGRV | | |
| | | | 10 | 3 | | | | |
| 8.8 | | | | 5 | | | | |
| | | | | 17 | wet dark gray gravel w/ sand, silt, wood fill | | | |
| | | 18 | | 11 | | | | |
| | | | | 100 | no sheen/odor | | | |
| 6.1 | | | | 16 | | | | |
| | | | | 34 | | | | |
| | | 20 | | 7 | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

**DRILLING RECORD**

BORING/WELL NO. SB20

Contractor:
Driller:
Inspector:
Rig Type:
Method:

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

GROUNDWATER OBSERVATIONS

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan — See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | | | | |
| | | | 25 | 24 | wet dark gray sand, silt, & gravel fill, slight MGP odor, trace sheen | | | |
| 8.6 | | | | 16 | | | | |
| | | | | 18 | | | | |
| | | 22 | | 22 | | | | |
| | | | 20 | 2 | | | | |
| 4.3 | | | | 3 | | | | |
| | | | | 9 | | GRVSND | | |
| | | 24 | | 12 | | | | |
| | | | 25 | 2 | wet gray and black micaceous sand w/ rock and brick fragments, slight MGP odor, no sheen | | | |
| 14.5 | | | | 6 | | | | |
| | | | | 20 | | | | |
| | | 26 | | 18 | | | | |
| | | | 35 | 5 | | | | |
| 16.3 | | | | 7 | | | | |
| | | | | 8 | | | | |
| | | 28 | | 8 | | | | |
| | | | 15 | 0 | wet soft, dark gray micaceous sand with silt no odor/sheen | | | |
| 5.9 | | | | 0 | | | | |
| | | | | 0 | | SLTSND | | |
| | | 30 | | 11 | | | | |
| | | | 40 | 16 | | | | |
| 34.9 | | | | 23 | | | | |
| | | | | 7 | wet gray sand, gravel, silt brick fragments NAPL, MGP odor | | | |
| | | 32 | | 7 | | | | |
| | | | 35 | 12 | | GRVSND | | |
| 899 | | | | 14 | | | | |
| | | | | 17 | | | | |
| | | 34 | | 17 | wet black clayey silt, NAPL, odor | CLYSLT | | |
| | | | | 12 | | | | |
| 2291 | | | | 100/4" | wet weathered concrete w/ NAPL - 1" of mica schist at bottom of spoon | Concrete | | |
| | | | | A | | | | |
| | | 36 | | A | | | | |
| | | | | 100/1" | Auger refusal at 36.1' on concrete | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 38 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 40 | | | | | | |
| | | | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: Sal/Manny
Inspector: Eric Musona
Rig Type: Failing PID
Method: HSA

**DRILLING RECORD**

PROJECT NAME: ConEd-W.45th St
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-21
Sheet 1 of 2
Location Description:

Weather: 22° partly cloudy breezy
Date/Time Start: 1/24/03 9:15
Date/Time Finish:
Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 8' | | | |
| Date | 1/24/03 | | | |
| Time | 10:30 | | | |
| Meas From | Grade | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | A | moist sand and gravel fill, no odors | | | |
| | | | | A | | | | |
| | | | | A | | | | |
| | | 2 | | A | | | | |
| | | | 40 | 17 | | | | |
| 17.3 | | | | 100/5" | | | | |
| | | | | | | SNDGRV | | |
| | | 4 | | | | | | |
| | | | 40 | 17 | | | | |
| 56.7 | | | | 16 | | | | |
| | | | | 5 | | | | |
| | | 6 | | 8 | moist black-stained gravel w/ sand fill, gasoline odor some NAPL (not saturated) | | | |
| | | | 50 | 5 | | | | |
| 978 | | | | 4 | | | | |
| | | | | 0 | | | | |
| | | 8 | | 4 | | | | |
| | | | 30 | — | wet black/gray/green sand, gravel, silt with hydrocarbon/gasoline odor No NAPL | | | |
| 632 | | | | — | | | | |
| | | | | 5 | | | | |
| | | 10 | | 3 | | | | |
| | | | 40 | 4 | | | | |
| 44.8 | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | 12 | | 3 | wet black micaceous sand with gravel, silt, clay fill No odor, No sheen | GRVSND | | |
| | | | 70 | 4 | | | | |
| 22.1 | | | | 1 | | | | |
| | | | | 3 | | | | |
| | | 14 | | 2 | | | | |
| | | | 75 | 2 | wet olive green and gray clayey silt with sand, gravel, brick fill No odor/Sheen | | | |
| 97.4 | | | | 2 | | | | |
| | | | | 4 | | | | |
| | | 16 | | 7 | | CLYSLT | | |
| | | | 75 | 2 | | | | |
| 64.7 | | | | 2 | | | | |
| | | | | 4 | wet non-plastic olive gray/ black clayey silt with sand, gravel, trace brick fragments no odor/sheen | | | |
| | | 18 | | 5 | | | | |
| | | | 60 | 4 | | | | |
| 134 | | | | 3 | | | | |
| | | | | 2 | wet black sand with silt, some gravel, gas odor, strong sheen | | | |
| | | 20 | | 26 | | SLTSNT | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS: Hit obstruction (concrete) at 3' first attempt - moved 2' west

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-21

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

**GROUNDWATER OBSERVATIONS**

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | wet black/red gravel w/ sand & silt | | | |
| 1,168 | | | | 57 | isolated NAPL, gasoline odor | SNDGRV | | |
| | | | | 97 | wet, weathered black/gray | | | |
| 552 | | | | 100/1" | schist, isolated NAPL, gas odor | SCHIST | | |
| | | 22 | | | Auger refusal at 21.6' on bedrock | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 24 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 26 | | | | | | |
| | | | | | | | | |
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| | | 28 | | | | | | |
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| | | 30 | | | | | | |
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| | | 32 | | | | | | |
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| | | 34 | | | | | | |
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| | | 36 | | | | | | |
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| | | 38 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 40 | | | | | | |
| | | | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: RV/Manny
Inspector: Eric Mysona
Rig Type: Failing FID
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Ed-W. 45th St
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-22
Sheet 1 of 2
Location Description: SW corner

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 8' | | | |
| Date | 1/15/03 | | | |
| Time | 8:20 | | | |
| Meas. From | Grade | | | |

Weather: 20°, partly cloudy
Date/Time Start: 1/14/03 14:50
Date/Time Finish: 1/15/03 10:35
Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | A | | | | |
| NA | | | | A | moist sand and gravel fill (TP-6 backfill) no sheen / no odor | | | |
| | | 2 | | A | | | | |
| 0.0 | | | | A | | | | |
| | | 4 | | A | | SNDGRV | | |
| NA | | | | A | | | | |
| | | 6 | | A | | | | |
| | | | 25 | — | moist loose sand, gravel & silt, MGP odor, sheen | | | |
| 20.2 | | | | 100/4" | | | | |
| | | 8 | | — | | | | |
| | | | 10 | 2 | | | | |
| 2.5 | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | 10 | | 2 | | | | |
| | | | 45 | 10 | wet soft gray silt, gravel & cobbles w/ MGP odor, some NAPL | | | |
| 13.9 | | | | 2 | | | | |
| | | | | 3 | | | | |
| | | 12 | | 6 | | | | |
| | | | 60 | — | wet soft gray silt with some sand, trace clay slight MGP odor | | | |
| 14.1 | | | | — | | | | |
| | | 14 | | — | | SNDSLT | | |
| | | | 70 | — | | | | |
| 142 | | | | — | | | | |
| | | | | — | | | | |
| | | 16 | | — | | | | |
| | | | 60 | — | | | | |
| 1,468 | | | | — | | | | |
| | | | | — | | | | |
| | | 18 | | — | wet gray silt with some sand, trace gravel, MGP odor, NAPL | | | |
| | | | 65 | — | | | | |
| 369 | | | | — | | | | |
| | | | | — | | | | |
| | | 20 | | — | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-22

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

**GROUNDWATER OBSERVATIONS**

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | | | | |
| 1028 | | | | — | wet gray silt w/ some sand trace gravel, MGP odor sheen | | | |
| | | | | — | | | | |
| | | | | 1 | | | | |
| | | 22 | | 2 | | | | |
| 1079 | | | | — | wet soft gray silt w/ some sand, trace gravel NAPL, MGP-odor | SNDSLT | | |
| | | | | — | | | | |
| | | | | 1 | | | | |
| | | 24 | | 2 | | | | |
| 885 | | | | — | | | | |
| | | | | — | old weathered concrete | | | |
| | | | | 100/3" | | | | |
| | | 26 | | | Auger refusal at 25'3" on concrete | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 28 | | | | | | |
| | | | | | | | | |
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| | | 30 | | | | | | |
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| | | 32 | | | | | | |
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| | | 34 | | | | | | |
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| | | 36 | | | | | | |
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| | | 38 | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | 40 | | | | | | |
| | | | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: WGI
Driller: RV Gregory / Manny
Inspector: Eric Mulsona
Rig Type: Failing FID
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Ed - W. 45th St
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-23
Sheet 1 of 2
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | 8.9' | | | |
| Date | 1/20/03 | | | |
| Time | 8:10 | | | |
| Meas. From | Grade | | | |

Weather: 20° partly cloudy
Date/Time Start: 1/17/03 8:20
Date/Time Finish:
Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | A | moist gravel w/ sand (fill) no odor / no sheen | SNDGRV | | |
| | | | | A | | | | |
| | | | | A | | | | |
| | | 2 | | A | | | | |
| | | | 85 | 8 | | | | |
| 0.7 | | | | 10 | | | | |
| | | | | 12 | | | | |
| | | 4 | | 15 | | | | |
| 15.7 | | | | | | | | |
| | | | | | | | | |
| | | | 40 | 30 | moist gray/black sand, silt & gravel fill w/ No NAPL, Slight MGP odor wood debris at 8' | | | |
| 4.2 | | 6 | | 29 | | | | |
| | | | | 14 | | | | |
| | | | | 14 | | | | |
| | | | 45 | 16 | | | | |
| 8.4 | | 8 | | 20 | | | | |
| | | | | 27 | wet dark gray silt w/ sand little gravel, trace brick abundant NAPL, MGP odor | SNDSLT | | |
| | | | | 29 | | | | |
| | | | 40 | 8 | | | | |
| 12.7 | | 10 | | 10 | | | | |
| | | | | 9 | | | | |
| | | | | 10 | | | | |
| | | | 80 | 6 | | | | |
| 29.6 | | 12 | | 7 | wet dark gray sand, some silt, trace gravel, NAPL, large piece wood at 13' | SLTSND | | |
| | | | | 8 | | | | |
| | | | | 8 | | | | |
| | | | 25 | — | | | | |
| 31.2 | | 14 | | — | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | | 50 | 1 | wet dark gray silt & sand some rock fragments, slight sheen & MGP odor | | | |
| 3.7 | | 16 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | | 75 | — | | | | |
| 38.4 | | 18 | | — | | | | |
| | | | | — | wet gray silt w/ some sand, trace gravel NAPL present throughout, MGP odor | SNDSLT | | |
| | | | | — | | | | |
| | | | 75 | — | | | | |
| 60.2 | | 20 | | — | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS: Auger refusal at 6' first attempt, moved 3' east, auger refusal at 13'. Final SB-23 location 5' west of proposed location

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

BORING/ WELL NO. SB-23

PROJECT NAME
PROJECT NUMBER

Sheet 2 of 2
Location Description:

Weather
Date/Time Start
Date/Time Finish

Location Plan See Site Plan

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 20 | | | | | | |
| | | | | 4 | wet gray silt, some sand | | | |
| | | | | 2 | trace gravel fill - NAPL | SND SLT | | |
| | | | | — | | | | |
| 216B | | 22 | | — | wet gray, sand, some silt | | | |
| | | | | — | trace clay fill w/ NAPL | | | |
| | | | | — | | SLTSND | | |
| 54B | | | | NA | MGP odor | | | |
| | | 24 | | NA | | | | |
| | | | | NA | Concrete | | | |
| | | | | | Auger refusal at 24.5' on concrete | | | |
| | | 26 | | | | | | |
| | | 28 | | | | | | |
| | | 30 | | | | | | |
| | | 32 | | | | | | |
| | | 34 | | | | | | |
| | | 36 | | | | | | |
| | | 38 | | | | | | |
| | | 40 | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: SB-24
Sheet: 1 of 1
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather: Partly Cloudy, 45°F
Date/Time Start: 4-24-03 / 0845
Date/Time Finish: 4-24-03 / 0925
Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings: Olive Gray; F. SAND, trace mc Sand to F. Gravel; moist, Saturated at 4 Feet. | | | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 3 | SB24-0507 | | 60 | 2 | Olive Gray; F. SAND, trace mc Sand to F. Gravel; wood fragments; loose; saturated (5.0-5.5). | | SP | |
| 0.1 | D042403 | 6 | | 5 | Black; F. SAND, little c. Sand to F. Gravel; loose; saturated (5.5-5.7). | | SP | |
| | | | | 60/2" | Amber to Whitish; SCHIST, weathered (5.7-6.2). | | SCHIST | |
| | | 8 | | | Auger refusal at 6 Feet. | | | |
| | | 10 | | | | | | |
| | | 12 | | | | | | |
| | | 14 | | | | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: MW-1
Sheet 1 of 2
Location Description:

Weather: Rain on 4-11-03
Date/Time Start: 4-10-03, 1400
Date/Time Finish: 4-11-03, 1400

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 Feet. Cuttings: DK Brn; fm SAND, little F Gravel; brn to dk gray motor oil-like NAPL below 1 foot; wet. | | SW | |
| | | 2 | | | | | | |
| | | | | | | | | |
| | | 4 | | | | | | |
| 193 | | | 30 | 1 | Brn; fm SAND, trace F Gravel; brn to dk gray motor oil-like NAPL present; very loose; ~~wet~~ HW saturated. | | SW | |
| | | 6 | | 1 | | | | |
| | | | | 2 | | | | |
| | | | | 3 | | | | |
| 551 | MW1- | 7.0- | 35 | 2 | Brn to DK Gray; F. SAND, little F. Gravel; schist fragments, micaceous grains and product present; loose; ~~wet~~ HW saturated. | | SP | |
| 739 | 0507 | 7.7 8 | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 2 | | | | |
| 95 | | | 40 | 3 | Brn; F. SAND, little Fe Gravel, trace Silt; micaceous grains, product and red brick present; loose; ~~wet~~ HW saturated | | SW | |
| 125 | | 10 | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 5 | | | | |
| | | | 65 | 6 | Brn to DK Gray; fm SAND, little Fe Gravel; brn to dk gray motor oil-like NAPL present; loose; ~~wet~~ HW saturated. | | SW | |
| | | 12 | | 4 | | | | |
| 109 | | | | 3 | | | | |
| | | | | 4 | | | | |
| 41 | | | 30 | 2 | Lt Brn to DK Gray; F. SAND, trace cSand to c Gravel; very loose; ~~wet~~ HW saturated. | | SP | |
| | | 14 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| 16 | | | 25 | 2 | Olive Gray; F. SAND, trace Fe Gravel; loose; saturated. | | SP | |
| | | 16 | | 1 | | | | |
| | | | | 3 | | | | |
| HW | | | | 7 | | | | |
| 827 | | | HW 20 | 50 1 | Olive Gray; F. SAND, trace F. Gravel; loose; saturated. Gravel with black product from 17.8-17.9 Feet. Silt at 17.9 Feet. | | SP | |
| 11 | | 18 | | 2 | | | | |
| | | | | 2 | | | | |
| | | | | 1 | | | | |
| 8 | | | 20 | WOH | Brn; SILT, little ~~fm~~ ~~SA~~ HW Sand, trace F. Gravel; very soft; saturated. | | ML | |
| | | 20 | | WOH | | | | |
| | | | | 1 | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor:
Driller:
Inspector:
Rig Type:
Method:

**DRILLING RECORD**

PROJECT NAME
PROJECT NUMBER

BORING/ WELL NO. MW-1
Sheet 2 of 2
Location Description:

Weather
Date/Time Start
Date/Time Finish

Location Plan: See Site Plan

**GROUNDWATER OBSERVATIONS**

| Water Level | | | | |
|---|---|---|---|---|
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 21 | | 1 | Continued from above. | | | |
| 16 | | | 60 | 1 | Brn; F. SAND, little Silt, trace F. Gravel; loose; saturated | | SM | |
| 10 | | | | 1 | | | | |
| | | | | 3 | | | | |
| | | 23 | | 4 | | | | |
| 6 | | | 45 | 1 | Brn; fm SAND, little fc Gravel; very loose; saturated (23.0-23.3). | | SW | |
| 1 | | | | 1 | | | ML/CL | |
| | | | | 1 | Brn; SILT/CLAY; some fm Sand, trace f. Gravel; very soft; saturated (23.3-23.9). | | | |
| | | 25 | | 1 | | | | |
| | | | 75 | WOH | Lt Brn; SILT, little fm Sand, trace fc Gravel; very soft; saturated | | ML | |
| | | | | WOH | | | | |
| | | | | 2 | | | | |
| | | 27 | | 2 | | | | |
| | | | 90 | 1 | Lt Brn; CLAY, some fm Sand, trace f. Gravel; very stiff; saturated (27.0-28.6). | black syrup-like NAPL present; | CL | |
| | | | | 10 | | | | |
| | | | | 9 | | | | |
| | | 29 | | 1 | Olive Gray; fm SAND, little f Gravel; saturated (28.6-28.8) | | SW | |
| | | | 80 | WOR | Brn; CLAY, little f. Sand, trace f. Gravel; very soft; saturated (29.0-30.6). | | CL | |
| | | | | WOR | | | | |
| | | | | WOR | Brn; fm SAND, trace f. Gravel; very loose; saturated (30.6-30.8). | | SW | |
| | | 31 | | WOR | | | | |
| | | | 38 | WOR | Lt Brn; CLAY, little fm Sand, trace f. Gravel; very soft; saturated. | | CL | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 33 | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 35 | | WOR | | | | |
| | | | 95 | 2 | Lt Brn; CLAY, little fm Sand, trace f. Gravel; very soft; saturated (35.0-36.0). | | CL | |
| | | | | 2 | | | | |
| | | | | 2 | Lt Brn; fine SAND, little fc Gravel; loose; saturated (36.0-36.9 | | SW | |
| | | 37 | | 100/5" | | | | |
| | | | | | Total Depth = 36.9 Feet. | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS: No PID readings were taken below 25 feet due to rain, ~~no product~~

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

DRILLING RECORD

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: MW-2
Sheet 1 of 1
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather: Partly cloudy, low 40's
Date/Time Start: 4-17-03, ~~1100~~ 1145
Date/Time Finish: 4-17-03, 1300

Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 Feet. Cuttings: DK Brn; fm SAND, little Clay, little F. Gravel; saturated. | | SC | |
| | | 2 | | | | | | |
| | | | | | | | | |
| | | 4 | | | | | | |
| 0 | MW2-0507 | 5.0-5.8 | 50 | 3 | Lt Brn; fm SAND, trace Clay; loose; saturated (5.0-5.8). | | SP | |
| 0 | | 6 | | 2 | | | | |
| | | | | 2 | Dk Brn; WOOD, decayed with organic odor (5.8-6.0). | | | |
| | | | | 2 | | | | |
| | | | 0 | 2 | No Recovery, rock in tip of spoon. | | NR | |
| | | 8 | | 3 | | | | |
| | | | | 2 | | | | |
| | | | | 2 | | | | |
| 0.2 | | | 40 | 1 | Lt Brn; fm SAND, little F. Gravel; medium dense; saturated (9.0-9.4) ~~9.4~~ (9.8-10.2). | | SP | |
| 0.1 | | 10 | | 1 | | | SCHIST | |
| | | | | 19 | Dk Gray; SCHIST; wet (10.2-10.6). | | | |
| | | | | 50/1" | | | | |
| | | 12 | | | Augered to 15 Feet. | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 14 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 16 | | | Total Depth = 15 Feet. | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 18 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 20 | | | | | | |
| | | | | | | | | |

STANDARD PENETRATION TEST

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

**FIGURE 4.2**

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: MW-3
Sheet: 1 of 2
Location Description:

Weather: Cloudy, 45-50°F
Date/Time Start: 4-2-03, 1420
Date/Time Finish: 4-3-03, 1515

Location Plan: See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | | | | Augered to 5 feet. Cuttings: Lt Brn; fm SAND, little F. Gravel; wet. | | | |
| | | 2 | | | | | | |
| | | 4 | | | | | | |
| 88 | | | 15 | 3 | Brown; fm SAND, little F. Gravel; amber NAPL; loose; saturated. Rock in tip of spoon. | | SP | |
| | | 6 | | 5 | | | | |
| | | | | 4 | | | | |
| | | | | 3 | | | | |
| 279 | | | 15 | 1 | DK Gray to Brn; F. SAND, some Silt/Clay, trace F. Gravel; amber NAPL; loose; saturated. Rock in tip of spoon. | | SP | |
| | | 8 | | 4 | | | | |
| | | | | 3 | | | | |
| | | | | 3 | | | | |
| 205 | MW3-0911 | 9.0-9.5 | 50 | 1 | Brn; fm SAND, little Silt/Clay, little F. Gravel; amber NAPL; very loose; saturated. | | SC | |
| 35 | | 10 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 2 | | | | |
| 238 | | | 70 | 1 | Lt Brn; F. SAND, trace F. Gravel; amber NAPL; very loose; saturated. | | SP | |
| | | 12 | | 1 | | | | |
| | | | | 2 | | | | |
| | | | | 1 | | | | |
| | | | 0 | 1 | No Recovery | | NR | |
| | | 14 | | 1 | | | | |
| | | | | 4 | | | | |
| | | | | 3 | | | | |
| 51 | | | 40 | 1 | Olive Gray; fm SAND, little F. Gravel; blebs of black syrup-like NAPL, red brick from 15.4-15.8; very loose; saturated. | | SP | |
| 900 | | 16 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 50 | | | | |
| | | | 0 | 1 | No Recovery | | NR | |
| | | 18 | | 1 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | | 0 | 1 | No Recovery | | NR | |
| | | 20 | | 1 | | | | |
| | | | | 100/4 | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

**FIGURE 4.2**

Contractor:
Driller:
Inspector:
Rig Type:
Method:

## DRILLING RECORD

PROJECT NAME
PROJECT NUMBER

BORING/ WELL NO. MW-3
Sheet 2 of 2
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather
Date/Time Start
Date/Time Finish

Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 21 | | WOH | Continued from above. | | | |
| | | | 0 | 1 | No Recovery | | NR | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | 23 | | 1 | | | | |
| 295 | MW3- | | 40 | 7 | Olive Gray; Fc GRAVEL, some Fine Sand; abundant bricks; loose; saturated; NAPL present (23.0-23.5) | | GW SM/SC | |
| 2891 | 2325 | | | 3 | | | | |
| | | | | 2 | Olive Gray; F SAND, little Silt/Clay; loose; saturated; product present (23.5-23.8) | | | |
| | | 25 | | 5 | | | | |
| 122 | | | 45 | 2 | Olive Gray to Brn; Fm SAND, trace F. Gravel; micaceous grains; loose; saturated; NAPL present. | | SP | |
| 136 | | | | 2 | | | | |
| | | | | 2 | | | | |
| | | 27 | | 2 | | | | |
| 796 | | | 25 | 3 | Brn; m SAND, little Fc Gravel; loose; saturated; amber NAPL present. | | SP | |
| | | | | 4 | | | | |
| | | | | 3 | | | | |
| | | 29 | | 1 | | | | |
| | | | 0 | WOR | No Recovery | | NR | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 31 | | WOR | | | | |
| | | | 0 | WOR | No Recovery | | NR | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 33 | | WOR | | | | |
| 112 | | | 10 | 3 | Olive Gray; Fm SAND, trace Fc Gravel; micaceous grains; very loose; saturated; irridescent NAPL product present. | | SP | |
| | | | | 2 | | | | |
| | | | | 1 | | | | |
| | | 35 | | 1 | | | | |
| | | | | WOR | Augered to 38 feet | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | | | WOR | | | | |
| | | 38 | | WOR | | | | |
| 101 | | | 100 | 1 | Brn; F SAND, trace F Gravel; very loose; saturated (38.0-38.7). | | SP | |
| 227 | | 39 | | 1 | Lt Brn; CEMENT; very soft (38.7-39.0). | | Cement | |
| | | | | 100/0" | Total Depth = 39 Feet. | | | |
| | | 40 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Bailer Blow

COMMENTS:

FIGURE 4.2

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Contractor: ADT<br>Driller: Victor Champagne<br>Inspector: Mike Wilkinson<br>Rig Type: CME LC-60<br>Method: HSA | | | | | DRILLING RECORD<br>PROJECT NAME Con Edison W 45th St. Works<br>PROJECT NUMBER 440090 | | BORING/ WELL NO. MW-4<br>Sheet 1 of 1<br>Location Description: | |
| GROUNDWATER OBSERVATIONS<br>Water Level<br>Date<br>Time<br>Meas. From | | | | | Weather Clear, 45°F<br>Date/Time Start 4-21-03, 0930<br>Date/Time Finish 4-21-03, 1030 | | Location Plan See Site Plan | |
| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
| | | 0 | | | | | | | |
| | | 2 | | | Augered to 5 feet.<br>Cuttings: Lt Brn; fmc SAND; some Silt; wet. | | | | |
| | | 4 | | | | | | | |
| 0 | | 6 | 10 | 2<br>2<br>3<br>3 | Lt Brn; fmc SAND, little Silt; trace F. Gravel; loose; saturated. | | | SM | |
| 9 | | 8 | 25 | 3<br>4<br>4<br>3 | Olive Gray; SILT, little f. Sand; loose; saturated. | | | ML | |
| 70<br>17 | MW4-0911 | 10 | 40 | 2<br>2<br>3<br>2 | Olive Gray; SILT; with amber NAPL film; med. stiff; saturated (9.0-9.7).<br>Black; fm SAND, trace F. Gravel; loose; saturated (9.7-9.8). | | | ML<br>SP | |
| 13 | | 12 | 30 | 2<br>2<br>1<br>1 | Olive Gray; SILT; with amber NAPL film; soft; saturated (11.0-11.5).<br>Black; fmc SAND, trace f. Gravel; with cinder fragments; very loose; saturated (11.5-11.6) | | | ML<br>SM | |
| 2 | | 14 | 5 | 1<br>3<br>1<br>1 | Olive Gray; f. SAND, trace mc Sand, trace F. Gravel; loose; saturated. | | | SP | |
| | | 16 | | | Total Depth = 15 feet. | | | | |
| | | 18 | | | | | | | |
| | | 20 | | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: MW-5
Sheet: 1 of 1
Location Description:

Weather: Clear, 45°F
Date/Time Start: 4-21-03, 0800
Date/Time Finish: 4-21-03, 0925

Location Plan: See Site Plan

**GROUNDWATER OBSERVATIONS**

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | 2 | | | Augered to 5 Feet. Cuttings: Lt Brn; fmc SAND, little Silt/Clay, little fc Gravel; saturated | | SM/SC | |
| | | 4 | | | | | | |
| 0.4 | | | 45 | 3 | Olive Gray; SILT, some fm Sand, little fc Gravel; stiff; saturated | | ML | |
| 0.3 | | 6 | | 8 | | | | |
| | | | | 4 | | | | |
| | | | | 3 | | | | |
| 1 | | | 45 | 2 | Olive Gray; fm SAND, and Silt, trace fc Gravel; micaceous grains and glass present; loose; saturated (7.0-7.6). | | SM | |
| 0 | | 8 | | 2 | Lt Brn; SILT, little fm Sand; soft; saturated (7.6-7.9). | | ML | |
| | | | | 2 | | | | |
| | | | 0 | 1 | No Recovery, rock in tip of spoon. | | NR | |
| | | 10 | | 1 | | | | |
| | | | | 7 | | | | |
| | | | | 2 | | | | |
| 54 | MW5-1113 | | 40 | 1 | Olive Gray; SILT, little fmc Sand, trace f. Gravel; with black motor oil-like NAPL; soft; saturated. | | ML | |
| 5 | | 12 | | 1 | | | | |
| | | | | 2 | | | | |
| | | | | 3 | | | | |
| | | | 0 | 9 | No Recovery, wood in tip of spoon. | | NR | |
| | | 14 | | 6 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| | | 16 | | | Total Depth = 15 Feet. | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

FIGURE 4.2

Contractor: ADT
Driller: Victor Champagne
Inspector: Mike Wilkinson
Rig Type: CME LC-60
Method: HSA

**DRILLING RECORD**

PROJECT NAME: Con Edison W 45th St. Works
PROJECT NUMBER: 440090

BORING/WELL NO.: MW-6
Sheet: 1 of 1
Location Description:

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | | | | |
| Date | | | | |
| Time | | | | |
| Meas. From | | | | |

Weather: Partly Sunny, 46°F
Date/Time Start: 4-17-03, 1340
Date/Time Finish: 4-17-03, 1500

Location Plan: See Site Plan

| PID Reading | Sample I.D. | Sample Depth | Percent Recovery | Blow Cts | FIELD IDENTIFICATION OF MATERIAL | LITHOLOGIC SCHEMATIC | SOIL CLASSIF | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | 0 | | | | | | |
| | | 2 | | | Augered to 5 Feet. Cuttings: Dk Brn; fmc. SAND, trace Clay; saturated | | | |
| | | 4 | | | | | | |
| 6 | | | 40 | 1 | Lt Brn to Dk Brn; F. SAND, trace Clay/Silt, little f. Gravel; loose; saturated; ~~NAPL odor present~~ H2O | | SP | |
| 1 | | 6 | | 2 | | | | |
| | | | | 1 | | | | |
| | | | | 1 | | | | |
| 19 | | | 75 | 2 | Olive Gray; F. SAND, little fe Gravel, trace Clay/Silt; loose; saturated; NAPL odor present. | | SP | |
| 23 | | 8 | | 3 | | | | |
| 13 | | | | 3 | | | | |
| | | | | 3 | | | | |
| | | | 0 | 3 | No Recovery, NAPL coated rock in tip of spoon. | | NR | |
| | | 10 | | 3 | | | | |
| | | | | 3 | | | | |
| | | | | 5 | | | | |
| 27 | | | 50 | 2 | Dk Gray to Dk Brn; F. SAND, little fe Gravel; with black motor oil-like NAPL; medium dense; saturated (11.0-11.7). | | SP | |
| 30 | | 12 | | 11 | | | SCHIST | |
| | | | | 6 | | | | |
| | | | | 4 | ~~dense~~ Olive Gray; SCHIST, weathered (11.7-12.0). | | | |
| | | 14 | | | Augered to 14 feet | | | |
| | | | | | Total Depth = 14 Feet. | | | |
| | | 16 | | | | | | |
| | | 18 | | | | | | |
| | | 20 | | | | | | |

STANDARD PENETRATION TEST
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED
WOR = Weight of Rod
WOH = Weight of Hammer
RB = Roller Bit

COMMENTS

**Contractor** Advanced Drilling Technology
**Driller:** Tony Palomeque / Joe McGill
**Inspector:** Scott Dillman
**Rig Type:** CME-LC55 (trac-rig)

**PROJECT NAME:** Consolidated Edison
**PROJECT NUMBER:** 442145-05000

**BORING/ WELL NO.MW-19** Sheet 1 of 1

**Location Description:**
W. 45th Street; NY, NY
(W. 46th Street)

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~9' bgs | DTW 6.22' | | |
| Date | 5/7/07 | 5/22/07 | | |
| Time | | | | |
| Meas. From | Split spoon | Top of Casing | | |

**Weather:** Clear, warm, 60's; 0-5 mph wind (W)

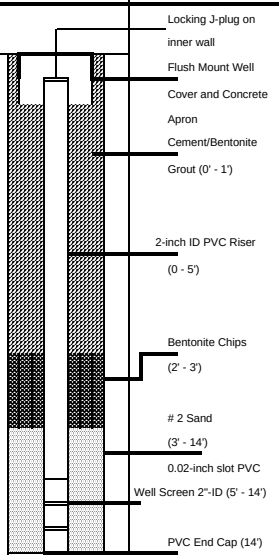
**Date/Time Start:** 5/7/07 0900

**Date/Time Finish:** 5/7/07 1130

**Location Plan**

N

See Site Plan

| Sample Depth | Location/ Sample I.D. | SPT | % Rec. | PID* (ppm) | | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | | | | | |  | Locking J-plug on inner wall |
| | | Vac-tron | | | 0-7" = Concrete and wire mesh | | Flush Mount Well |
| 1 | | Vac-tron | | | 7-8" = Subase/aggregate | | Cover and Concrete Apron |
| | | Vac-tron | | | 8"-23" = Concrete | | Cement/Bentonite Grout (0' - 1') |
| 3 | | Vac-tron | | 0.0 | 23" - 5' = Brown fm SAND, some fc smooth/angular Gravel; little silt | | |
| | | Vac-tron | | | | | |
| 5 | | Vac-tron | | | | | 2-inch ID PVC Riser (0 - 5') |
| | | 3-3-3-3 | 83 | 0.0 | Moist, tan fmc SAND, black/dark grey @ bottom 6" | | |
| 7 | | | | | (organic like odor) | | |
| | | 4-2-3-2 | 50 | 54.0 | Tan f SAND, black stain @ bottom | | |
| 9 | | | | | | | Bentonite Chips (2' - 3') |
| | MW-19 (9-11') | 2-2-3-1 | 100 | 324 | Grey/tan fm SAND; with bottom 1/2 black stain, wet and hydrocarbon like odor | | |
| 11 | | | | | | | # 2 Sand (3' - 14') |
| | | 12-15-11-14 | 83 | 159 | 0-6" = Same as above interval; 6-16" = Red silt, some fm sand, little f gravel, | | |
| 13 | | | | | trace clay-till; 16-20" = Weathered mica schist | | 0.02-inch slot PVC Well Screen 2"-ID (5' - 14') |
| | MW-19 (13-15') | 3-50/1.5 | 25 | 45 | No Recovery | | |
| 15 | | | | | | | PVC End Cap (14') |
| | | | | | **End of boring @ 14' bgs** | | |
| 17 | | | | | | | |
| 19 | | | | | | | |
| 21 | | | | | | | |
| 23 | | | | | | | |
| 25 | | | | | | | |
| 27 | | | | | | | |
| 29 | | | | | | | |
| 31 | | | | | | | |
| 33 | | | | | | | |
| 35 | | | | | | | |

**SAMPLING METHOD**
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Boring was hand cleared to 5' bgs;
Hollow Stem Augers used from 5'-14' bgs. Auger and split spoon refusal at 14'bgs, possible bedrock
HCN not detected in any interval. MS/MS sample collected @ 9-11' interval

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** Truck CME 75 - Drive and Wash

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 1 of 1 **PDI-1/MW-22**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW | DTW 1.52 | | |
| Date | | 4/10/12 | | |
| Time | | 1150 | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Cloudy, drizzle, 45F
**Date/Time Start:** 3/6/12 ; 1000
**Date/Time Finish:** 3/22/12 ; 1100

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| | | | | | | | Locking J-plug |
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-6" CONCRETE<br>6-60" Brown, fine to coarse SAND and GRAVEL, very dense; Black GNEISSIC SCHIST COBBLES very abundant below 30"; BRICK and MORTAR debris abundant below 30" | | Flush Mount Well Cover and Concrete Apron |
| 2 | | | | | | | 2-inch ID PVC Riser (0.5'-5') |
| 4 | | | | | | | |
| | 5-6' Roller bit | - | | | Use of roller bit from 5-6' due to obstruction | | |
| 6 | 6-8' (SS) 2" Spoon | 10-50/3" | 6" | 0.8 | 0-6" Hard, slightly weathered, black, micaceous, GNEISSIC SCHIST, some Sand, some fine Gravel | | Well Screen 2"-ID (5'-15') |
| 8 | 8-10' (SS) 2" Spoon | 40-14-86/5 | 9" | 1.2 | 0-9" Hard, fresh to slightly weathered, black, micaceous, GNEISSIC SCHIST; rock flour in drive shoe | | |
| 10 | 10-11' Roller | - | | | Use of roller bit from 10-11' to try to get passed rock | | # 1 Sand (0' - 15') |
| 12 | 11-13' (SS) 2" Spoon | 6-6-6-4 | 6" | 1.7 | 0-6" Soft, highly weathered, black, GNEISSIC SCHIST, sheen present in sample; Schist in wash water to 13' | | |
| 14 | 13-15' (SS) 2" Spoon | 5-4-4-4 | 6" | 2.0 | 0-6" Soft, highly weathered, black, GNEISSIC SCHIST | | |
| 16 | 15-17' (SS) 2" Spoon | 4-5-4-5 | 4" | 2.7 | 0-4" Soft, highly weathered, black, GNEISSIC SCHIST, slight odor | | PVC End Cap (15') |
| 18 | 17-19' (SS) 2" Spoon | 22-44-48-11 | 12" | 1.5 | 0-12" Soft, highly weathered, black, GNEISSIC SCHIST | | Boring was grouted from 37.5 to 15 ft bgs prior to well install |
| 20 | 19-21' (SS) 2" Spoon | 26-50/2" | 8" | 3.4 | 0-8" Soft, highly weathered, black, GNEISSIC SCHIST; weathered red staining at 2" | | |
| 22 | 21-23' (SS) 3" Spoon | 15-11-7-5 | 9" | 1.3 | 0-9" Soft, highly weathered, black, micaceous, GNEISSIC SCHIST, slight hydrocarbon odor | | |
| 24 | 23-25' (SS) 3" Spoon | 13-8-11-11 | 11" | 4.2 | 0-11" Soft to moderately hard, fresh to slightly weathered, black, micaceous, GNEISSIC SCHIST, little fresh, hard, white to rose, Quartz, Slight hydrocarbon | | |
| 26 | 25-27' (SS) 3" Spoon | 9-19-45-50/4" | 8" | 37.8 | 0-8" Soft to moderately hard, fresh to slightly weathered, black, micaceous, GNEISSIC SCHIST, little fresh, hard, white to rose, Quartz, Slight hydrocarbon | | |
| 28 | 25.5-30.5' (C) Coring | - | Recovery: 7" RQD: 12% | | Cored from 25.5 to 30.5': Hard, fresh, black, fine grained, GNEISS<br>25.5-26.5' -> 10 minutes<br>26.5-27.5' -> 1 minute<br>27.5-28.5' -> 5 minutes<br>28.5-29.5' -> 5 minutes<br>29.5-30.5' -> 1 minute | | |
| 30 | | | | | | | |
| 32 | 30.5-35.5' (C) Coring | - | Recovery: 29" RQD: 33% | 3.1 | Cored from 30.5 to 35.5': Hard,fresh, black to gray, micaceous, GNEISSIC SCHIST, fractures at 8", 12", 18" and 24"; From 8 to 12" is a gray, hard, fine grained material resembling grout, possibly from MW-1 (PID of grout material=66.3 ppm)<br>30.5-31.5' -> 15 minutes<br>31.5-32.5' -> 2 minutes<br>32.5-33.5' -> 6 minutes<br>33.5-34.5' -> 7 minutes | | |
| 34 | | | | | | | |
| 36 | 35.5-37.5' (C) Coring | - | Recovery: 16.5" RQD:N | | Cored from 35.5 to 37.5': 0-0.75" STEEL, 0.75-15" CONCRETE; 15-16.5" Hard, fresh, black gneissic SCHIST; Recovery=16.5"; RQD=N/A<br>35.5-36.5' -> 22 minutes<br>36.5-37.5' -> 4 minutes | | |
| | | | | | End of Boring at 37.5 ft bgs | | |

**SAMPLING METHOD**

| | |
|---|---|
| SO = SONIC RIG | 0 to 5'=Hand-Clearance (3/14) |
| SS = SPLIT SPOON (2", 3") | 5 to 6', 10 to 11'=Roller Bit; 6 to 10', 11 to 27'=Interval sampling with split spoon |
| A = AUGER CUTTINGS | 25.5 to 30.5', 30.5 to 35.5', and 35.5 to 37.5'=Rock Cored |
| C = CORED | Boring complete to 37.5' bgs; Grouted to 15 ft bgs. Installed MW-22 to 15 ft bgs (2" well) |

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-2 — Sheet 1 of 2

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Jenkins/Chris Mi
**Inspector:** Sam Monte
**Rig Type:** Sonic / CME 75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Cloudy, upper 60s
**Date/Time Start:** 5-7-12, 13:30
**Date/Time Finish:** 5-10-12, 10:30

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 3/15/2012 | | | |
| Time | 930 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT | | Observed Water Level at 4' bgs |
| | | | | 5.6 | 8"-3' Moist, brown fine to coarse SAND, some Cobble, little Concrete debris | | |
| 2 | | | | 12.2 | 3-5' Moist, brown fine to coarse SAND, some Cobble, little Concrete debris, trace Wood | | |
| | | | | 12.2 | 5-6' Wet, brown fine to coarse SAND, some Cobble, little Concrete debris, trace Wood. sheen | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 48" | 2212.0 | 0-12" Coarse GRAVEL | | |
| 6 | | | | 9999+ | 12-36" Grey SAND, some Silt, trace Gravel, NAPL Blebs | | |
| | | | | 9999+ | 36-48" Wet, grey SAND, some Silt, trace Gravel, NAPL Blebs, strong hydrocarbon odor | | |
| 8 | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 60" | 9999+ | 0-36" Wet, grey SAND, some Silt, trace Gravel, NAPL Blebs-Saturation, strong hydrocarbon odor | | |
| 12 | | | | 1700.0 | 36-60" Brown SAND, some Silt, trace Cobble, trace Brick, NAPL Blebs, hydrocarbon odor | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 24" | 9999+ | 0-12" Red/brown SAND and SILT, trace Cobble, trace Gravel, NAPL Blebs, hydrocarbon odor | | Large Cobble in drilling shoe |
| 16 | | | | | | | |
| | | | | 9999+ | 12-24" Grey/olive SAND, some Silt, trace Gravel, NAPL Blebs, hydrocarbon odor | | |
| 18 | | | | | | | |
| 20 | 20-25' (SO) Sonic | --- | 60" | 4445.0 | 0-30" Wet, dark grey SAND, some Silt, NAPL Blebs, hydrocarbon odor | | |
| | | | | 5875.0 | 30-60" Dry, red BRICK | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 48" | 1675.0 | Dry, red BRICK | | |
| 26 | | | | | | | |
| 28 | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 60" | 507.0 | Dry, red BRICK | | |
| 32 | | | | | | | |
| 34 | | | | | | | |
| | 35-40' (SO) Sonic | --- | 60" | 507.0 | 0-48" Dry, red BRICK | | |
| 36 | | | | 294.0 | 48-60" CONCRETE | | |
| 38 | | | | | | | |
| 40 | 40-45' (SO) Sonic | --- | 30" | --- | 0-6" CONCRETE | | |
| | | | | | 6-12" Black, weathered GNEISSIC SCHIST | | |
| 42 | | | | | 12-30" White SCHIST (quartz veins) | | |
| 44 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/15)
5 to 45'=Interval sampling with and sonic rig (5/8)
45 to 50'=Rock Cored (1 segment, 5/11)
Boring complete to 50' bgs; Grouted to surface

| | | | |
|---|---|---|---|
| **Contractor:** Advanced Drilling Technology<br>**Driller:** Chris Mason, Chris Jenkins/Chris Migl<br>**Inspector:** Sam Monte<br>**Rig Type:** Sonic / CME 75 | **PARSONS**<br>**DRILLING RECORD**<br>**PROJECT NAME:** Consolidated Edison West 45th Street PDI<br>**PROJECT NUMBER:** 446672-05000 | **BORING/ WELL NO.** PDI-2 Sheet 2 of 2<br>**Location Description:**<br>West 45th Street, Manhattan, NY |

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 3/15/2012 | | | |
| Time | 930 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Cloudy, upper 60s

**Date/Time Start:** 5-7-12, 13:30

**Date/Time Finish:** 5-10-12, 10:30

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 45 | 45-50' (C) Coring | --- | Recovery: 42" RQD: 72% | | White SCHIST, some black GNEISSIC SCHIST incursions; vertical rose quartz vein dips | | |
| | | | | | 45-46' - 28 minutes | | |
| | | | | | 46-47' - 31 minutes | | |
| 47 | | | | | 47-48' - 34 minutes | | |
| | | | | | 48-49' - 45 minutes | | |
| 49 | | | | | 49-50' - 60 minutes | | |
| | | | | | End of Boring at 50 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/15)
5 to 45'=Interval sampling with and sonic rig (5/8)
45 to 50'=Rock Cored (1 segment, 5/11)
Boring complete to 50' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-3 — Sheet 1 of 1

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** Chris Migliori/Frank Quinn
**Inspector:** N. Garguilo/D. Miller/S. Monte
**Rig Type:** Truck CME 75 (Drive and Wash)

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 3/21/2012 | | | |
| Time | 1045 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, 40s to 50s
**Date/Time Start:** 3/30/12 ; 1100
**Date/Time Finish:** 4/3/12 ; 1025

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT | | Hand clearance was conducted to 6 ft bgs Observed Water Level at 5' bgs |
| | | | | 0.0 | 8-42" Brown medium to fine SAND, some Silt, little medium to fine Gravel | | |
| 2 | | | | 77.3 | 42-48" Brown medium to fine SAND, some Silt, some medium to coarse Gravel, strong hydrocarbon odor | | |
| 4 | | | | 66.3 | 48-72" Brown medium to fine SAND, some Silt, some medium to coarse Gravel, strong hydrocarbon odor | | |
| 6 | 5-7' (SS) 3" Spoon | 1-1-1-1 | 6" | 112 | 0-6" Wet, brown, fine to coarse SAND, some subangular to round Gravel, little Silt, light to moderate NAPL staining, moderate hydrocarbon odor | | |
| 8 | 7-9' (SS) 3" Spoon | 5-5-5-5 | 20" | 1122 | 0-20" Wet, brown, SAND and subangular GRAVEL, little Silt, wood, and brick fragments, trace porcelain fragment, NAPL blebs, discrete NAPL saturated areas, strong hydrocarbon odor | | |
| 10 | 9-11' (SS) 3" Spoon | 3-4-4-3 | 20" | 730 | 0-20" Wet, dark brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, NAPL staining from 0-2", NAPL and tar blebs (0.25" diameter) from 18-20", moderate hydrocarbon odor | | |
| 12 | 11-13' (SS) 3" Spoon | 4-5-5-3 | 13" | 213 | 0-8" Wet, dark brown, fine to medium SAND, little Gravel, trace Silt, slight hydrocarbon odor<br>8-13" Wet, olive, fine to medium SAND, little Gravel, trace Silt, slight fuel oil-like odor | | |
| 14 | 13-15' (SS) 2" Spoon | Weight of Rod/24" | 0" | - | No Recovery | | |
| 16 | 15-17' (SS) 2" Spoon | 9-3-3-12 | 6" | 72.8 | 0-6" Wet, gray medium to coarse SAND, some black fine to medium Sand, some micaceous Schist, trace medium to coarse Gravel | | |
| 18 | 17-22' (C) Coring | - | Recovery: 50" RQD: 73% | | Cored from 17 to 22': Black/Dark gray, GNEISSIC SCHIST, slight odor in rock (Attempt 1) 17-18'->75 minutes, 6" of core; (Attempt 2) 17-18' -> 60 minutes<br>18-19' -> 90 minutes<br>19-20' -> 90 minutes<br>20-21' -> 90 minutes<br>21-22' -> 15 minutes | | |
| 22 | 22-27' (C) Coring | - | Recovery: 58" RQD: 88% | | Cored from 22 to 27': Black/ Dark gray, GNEISSIC SCHIST<br>22-23' -> 12 minutes<br>23-24' -> 15 minutes<br>24-25' -> 16 minutes<br>25-26' -> 18 minutes<br>26-27' -> 14 minutes | | |
| | | | | | End of Boring at 27 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON: (2", 3")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/21); 5 to 17'=Interval sampling with (3" and 2") split spoon
Casing refusal at 17', use roller bit to clear borehole
17 to 22', 22 to 27'=Rock Cored
Boring complete to 27' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliori
**Inspector:** Sam Monte/Zohar Lavy
**Rig Type:** CME 75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-4 Sheet 1 of 1
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW 3.5 ft | DTW | | |
| Date | 3/21/2012 | | | |
| Time | 1330 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, 40's
**Date/Time Start:** 4/3/12 ; 1315
**Date/Time Finish:** 4/5/12 ; 1030

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT<br>8-60" Brown, fine to medium SAND, some Silt, some medium to coarse Gravel, little Brick fragments | | Observed Water Levelat 3.5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-7' (SS) 3" Spoon | - | 0" | | No Recovery | | |
| 6 | | | | | | | |
| | 7-9' (SS) 3" Spoon | 3-11-24-13 | 6" | 1.1 | 0-6" Brown SILT and weathered, micaceous, black GNEISSIC SCHIST | | |
| 8 | | | | | | | |
| | 9-11' (SS) 3" Spoon | 4-1-1-2 | 6" | 2.5 | 0-6" Brown SILT and weathered, micaceous, black GNEISSIC SCHIST | | |
| 10 | | | | | | | |
| | 11-13' (SS) 3" Spoon | 6-3-3-1 | 6" | 19.6 | 0-6" Wet, black, weathered GNEISSIC SCHIST, slight fuel oil-like odor | | |
| 12 | | | | | | | |
| | 13-15' (SS) 3" Spoon | 4-3-2-6 | 10" | 81.2 | 0-10" Black, weathered GNEISSIC SCHIST, trace brown Silt, fuel oil-like odor | | |
| 14 | | | | | | | |
| | 15-17' (SS) 3" | 50/1" | 0" | NA | No Recovery | | |
| 16 | 15-20' (C) Coring | - | Recovery: nine 2-3" pieces RQD: 0% | | Cored from 15 to 20': Hard, black, Gneissic SCHIST, weathering and soil at existing fractures/interfaces: one 3" long Concrete piece; two 2-3" long hard, fresh, fine grained black Gneiss. Boulders and cobbles.<br>15-16' -> 8 minutes<br>16-17' -> 7 minutes<br>17-18' -> 6 minutes<br>18-19' -> 5 minutes<br>19-20' -> 12 minutes | | |
| 18 | | | | | | | |
| 20 | 20-25' Roller Bit | - | - | - | Drove casing to 20 feet. Roller bit and drive casing 20-25' due to obstructions. | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-27' (SS) 2" Spoon | 3-2-1-2 | 3" | 0.0 | 0-3" Black, GNEISSIC SCHIST; Brick in cutting shoe | | |
| 26 | | | | | | | |
| | 27-29' (SS) 2" Spoon | 13-1-2-4 | 6" | 77.9 | 0-6" Wet, brown, fine SAND and GRAVEL, some Brick, NAPL blebs | | |
| 28 | | | | | | | |
| | 29-31' (SS) 2" Spoon | 9-15-7-9 | 6" | 112 | 0-4" Wet, black, fine to coarse SAND, trace fine angular Gravel, trace Brick fragments, strong hydrocarbon odor, sheen; 4-6" Brick, strong hydrocarbon odor | | |
| 30 | | | | | | | |
| | 31-33' (SS) 2" Spoon | 6-8-7-8 | 8" | 260 | 0-8" Wet, brown/black, fine to coarse SAND, some Brick, NAPL blebs, strong hydrocarbon odor | | |
| 32 | | | | | | | |
| | 33-35' (SS) 2" Spoon | 4-1/18" | 10" | 114 | 0-10" Wet, brown, medium to coarse SAND, trace fine subangular Gravel, trace weathered Schist, trace Brick | | |
| 34 | | | | | | | |
| | 35-35.2' (SS) 2" Spoon | 50/2" | 2" | 307 | 0-2"Brown/dark gray, fine to medium SAND, trace fine angular Gravel, trace Gneissic Schist, strong hydrocarbon odor | | |
| 36 | 35.2 - 36" Roller Bit | | | | Roller bit to 36 feet | | |
| | 36-36.5' (SS) 2" Spoon | 50, 50/0" | 6" | 697 | 0-6" Wet, brown, SILT, strong hydrocarbon odor | | |
| 38 | 37.5-39.5' (C) Coring | - | Recovery: 6" RQD: N/A | | Cored from 37.5 to 39.5': Metal. Three pieces recovered. First is a 1/2" thick plate, oriented horizontally. Other two pieces are roughly 5" long, and overlap at a near vertical junction. All pieces occupy entire diameter of core.<br>37.5-38.5' -> 17 minutes<br>38.5-39.5' -> 38.5 minutes | | |
| | | | | | End of Boring at 39.5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON: (3", 2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/21)
5 to 16'=Interval sampling with split spoon (3") ; 25 to 36.5'=Interval sampling with split spoon (2")
15 to 20', 37.5 to 39.5' =Rock Cored
Boring complete to 39.5' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Zohar Lavy
**Rig Type:** Sonic Rig/CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-5 Sheet 1 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/23/2012 | | | |
| Time | 1155 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Light rain, Up to 58F, Wind: 10-15 mph
**Date/Time Start:** 4/23/12 ; 1155
**Date/Time Finish:** 5/4/12 ; 1100

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0 | 0-8" ASPHALT | | |
| | | | | 0 | 8"-1.5' Moist, brown SILT and GRAVEL, some Sand and Brick | | |
| 2 | | | | 0 | 1.5-2' Moist, tan SAND and SILT | | |
| | | | | 0 | 2-4' Moist, brown SILT and SAND | | |
| 4 | | | | 0 | 4-5' COBBLE | | Observed Water Level at 5 ft bgs |
| | 5-10' (SO) Sonic | --- | 34 | 135 | 0-15" Wet, brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, trace Brick | | |
| 6 | | | | | 15-34" Moist, brown/gray fine to medium SAND, little Brick, little fine to coarse angular to subround Gravel, trace Silt | | |
| | | | | | | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 40 | 240 | 0-20" Wet, dark brown/black fine to coarse GRAVEL, little Sand, trace Brick, hydrocarbon odor, staining, NAPL Blebs, sheens | | |
| | | | | | 20-40" Brown fine to medium SAND and BRICK (mortor joints present), NAPL saturation, hydrocarbon odor | | |
| 12 | | | | | | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 36 | 22.5 | Moist, highly micaceous, weathered GNEISSIC SCHIST (likely from 17-20') | | Sonic sampler advanced through a Gneissic Schist boulder |
| 16 | | | | | | | |
| | | | | | | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | 20-25' (SO) Sonic | --- | 18" | --- | METAL, trace Brick (rivetted metal plates), tar/NAPL coating | | |
| | | | | | | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 42" | 85.0 | 0-8" Wet, brown/orange fine to coarse SAND and METAL, some Brick, little fine to coarse subangular gravel | | |
| 26 | | | | | 8-24" Wet, dark brown fine to coarse SAND and fine to coarse GRAVEL, little Brick, sheens, hydrocarbon odor | | |
| | | | | | | | |
| 28 | | | | | 24-42" Tan/olive fine to coarse SAND, little subangular to round fine to medium Gravel, trace Brick, trace Silt, trace Mica, sheens, hydrocarbon odor | | |
| | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 24 | 690.0 | 0-12" Dark brown/black fine to medium SAND and METAL, trace schist, trace Gneiss, NAPL saturation, staining, odors, sheens, | | |
| | | | | | 12-24" Wet, dark brown fine to medium SAND,trace fine to medium subangular to round Gravel, trace Metal, NAPL saturation, hydrocarbon odor, staining, sheens | | |
| 32 | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-40' (SO) Sonic | --- | 40" | 4324 | 0-20" Wet, METAL and fine dark brown/black SAND, trace Silt, NAPL saturation, strong hydrocarbon odor, staining | | Resistance (hard drilling) |
| 36 | | | | | 20-30" Brown fine to medium SAND, little weathered Gneiss, trace Silt, NAPL bleb | | |
| | | | | | 30-40" CONCRETE, trace Wood, trace Hair, trace Plastic/Resin | | |
| 38 | | | | | | | |
| | | | | | | | |
| 40 | 40-42.5' (SO) Sonic | --- | 30" | 695 | 0-10" CONCRETE | | |
| | | | | | 10-30" Weathered GNEISS (soft) | | |
| 42 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/14)
5 to 42.5' and 47.5 to 60' = Intervals sampled using sonic rig
42.5-47.5' and 60-65' =Rock Cored
Boring complete to 65' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic Rig/CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-5 Sheet 2 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/23/2012 | | | |
| Time | 1155 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Light rain, Up to 58F, Wind: 10-15 mph
**Date/Time Start:** 4/23/12 ; 1155
**Date/Time Finish:** 5/4/12 ; 1100

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 42 | | | | | | | |
| | 42.5-47.5' (C) Coring | --- | Recovery: 14" RQD: 0% | | 0-6" Weathered white SCHIST, trace Coal; 6-12" BRICK and MORTAR, Metal, Wood, Paper, Porcelain; 12-14" Black GNEISSIC SCHIST | | |
| 44 | | | | | 42.5-43.5' - 58 minutes | | |
| | | | | | 43.5-44.5' - 45 minutes | | Sonic was used to drill passed metal and debris to 60 ft bgs |
| | | | | | 44.5-45.5' - 70 minutes | | |
| 46 | | | | | 45.5-46.5' - 5 minutes | | |
| | | | | | 46.5-47.5' - 15 minutes | | |
| 48 | 47.5-55' (SO) Sonic | --- | 60" | --- | Heavily fractured and weathered GNEISS and GNEISSIC SCHIST | | |
| | | | | | | | |
| 50 | | | | | | | |
| | | | | | | | |
| 52 | | | | | | | |
| | | | | | | | |
| 54 | | | | | | | |
| | 55-60' (SO) Sonic | --- | 60" | --- | Heavily fractured and weathered GNEISS and GNEISSIC SCHIST | | |
| 56 | | | | | | | |
| | | | | | | | |
| 58 | | | | | | | |
| | | | | | | | |
| 60 | 60-65' (C) Coring | --- | Recovery: 54" RQD: NA | | Hard, black GNEISSIC SCHIST; mechanical breaks throughout at 20-40 degrees following folding planes and vein dips; 20-24" Fractured zone; | | |
| | | | | | 60-61' - 10 minutes | | |
| 62 | | | | | 61-62' - 10 minutes | | |
| | | | | | 62-63' - 9 minutes | | |
| 64 | | | | | 63-64' - 7 minutes | | |
| | | | | | 64-65' - 8 minutes | | |
| | | | | | End of Boring at 65 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/14)
5 to 42.5' and 47.5 to 60' = Intervals sampled using sonic rig
42.5-47.5' and 60-65' =Rock Cored
Boring complete to 65' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-6 — Sheet 1 of 1

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** Truck CME 75 (Drive and Wash)

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Cloudy, high 60s
**Date/Time Start:** 4/26/12 ; 0800
**Date/Time Finish:** 4/30/12; 1100

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW ~3' bgs | DTW | | |
| Date | 3/23/2012 | | | |
| Time | 1000 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 5.6 | 0-8" ASPHALT<br>8-36" Moist, brown fine to coarse SAND, some Concrete/Debris/Cobbles, slight hydrocarbon odor; 36-48" Wet, brown fine to coarse SAND, some Concrete/Debris/ Cobbles, slight hydrocarbon odor<br>48-60" Water; Dig bar advanced to 60" in several locations | | Observed Water Level at 3 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | 5-8' Roller bit | | | | Drove casing to 8'; no 5 to 7 ft bgs sample taken due to rock obstructing case, apparent from difficulty driving case and difficulty advancing roller bit | | |
| 8 | 8-10' (SS) Spoon | 50/2" | 2" | 0.0 | 0-2" Soft, highly weathered, black, GNEISSIC SCHIST | | |
| 10 | 10-12' (SS) Spoon | 10-50/2" | 0" | - | No Recovery | | |
| 12 | | | | | Drove case to 12' bgs and advanced roller bit to 13' bgs | | |
| 14 | 13-18' (C) Coring | - | Recovery: 50" RQD: 80% | | Cored from 13 to 18': 0-35" Hard, fresh, black, GNEISSIC SCHIST ; 35-50" Hard, fresh, white, SCHIST. Transition at 35" where rock type interface is intact<br>13-14' -> 10 minutes<br>14-15' -> 8 minutes<br>15-16' -> 14 minutes<br>16-17' -> 18 minutes<br>17-18' -> 15 minutes | | |
| 16 | | | | | | | |
| 18 | 18-23' (C) Coring | - | Recovery: 54" RQD: 85% | | Cored from 18 to 23': 0-54" Hard, fresh, black, GNEISSIC SCHIST; First 1" of sample has some White, Schist incursions; existing fresh 20°-40° non-coplane fractures at 1", 6", 41" and 54"; green staining at 54"<br>18-19' -> 19 minutes 21-22' -> 10 minutes<br>19-20' -> 11 minutes 22-23' -> 15 minutes<br>20-21' -> 10 minutes | | |
| 20 | | | | | | | |
| 22 | | | | | | | |
| | | | | | End of Boring at 23 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/23)
5 to 8', 12 to 13' = Roller bit; 8 to 12' = Interval sampling with split spoon (2")
13 to 18' and 18 to 23' = Rock Cored
Boring Complete at 23' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-7 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Sean Miller
**Inspector:** Sam Monte
**Rig Type:** CME-85

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW 2' | DTW | | |
| Date | 3/9/2012 | | | |
| Time | 1300 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, high 60s
**Date/Time Start:** 4/4/12 ; 1150
**Date/Time Finish:** 4/5/12; 1010

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-9" ASPHALT | | Observed Water Level at 2 ft bgs |
| 2 | | | | | 9-24" Moist, brown fine to coarse SAND and GRAVEL, trace Silt, trace Cobbles; Brick and Mortar abundant at 12" bgs | | |
| 4 | | | | | 24" Ground water encountered<br>Dig bar advanced to 60" in 3 locations | | |
| 6 | 5-7' (SS) Spoon | 16-20-21-27 | 21" | 53.1 | 0-21" Brown, fine to coarse SAND and coarse angular GRAVEL, Concrete in drive shoe, slight hydrocarbon odor | | |
| 8 | 7-9' (SS) Spoon | 28-29-24-21 | 24" | 121 | 0-24" Wet, brown, fine to coarse SAND and coarse angular GRAVEL | | |
| 10 | 9-11' (SS) Spoon | 40-44-28-50/3" | 18" | 128 | 0-18" Moist, brown, fine to coarse SAND and coarse angular GRAVEL | | |
| 12 | 11 to 13' Auger | | - | - | Auger to 13 ft bgs due to 50/3" blow count | | |
| 14 | 13-15' (SS) Spoon | 14-8-6-3 | 16" | 2083 | 0-4" Red BRICK<br>4-16" Moist, brown, micaceous SAND and SILT, some Gravel, hydrocarbon odor, NAPL blebs (0.25-0.5" diameter), low viscosity NAPL | | |
| 16 | 15-17' (SS) Spoon | 5-10-4-4 | 20" | 1356 | 0-20" Wet, brown, micaceous SAND and SILT, some Gravel, hydrocarbon odor, NAPL blebs (0.25-0.5" diameter), low viscosity NAPL | | |
| 18 | 17-19' (SS) Spoon | 3-12-4-3 | 12" | 1119 | 0-6" Light brown, SILT and SAND, some Gravel, strong hydrocarbon odor, Moderately to heavily abundant NAPL blebs, viscous NAPL<br>6-12" Wet, red BRICK, NAPL blebs | | |
| 20 | 19-21' (SS) Spoon | 2-2-3-2 | 3" | 141 | 0-3" Wet, brown/olive, medium SAND and GRAVEL. Lightly abundant NAPL blebs, low viscosity NAPL | | |
| 22 | 21-23' (SS) Spoon | WH-WH-4-8 | 24" | 995 | 0-24" Wet, brown/gray fine SAND and SILT, some Gravel, NAPL present, slight hydrocarbon odor | | |
| 24 | 23-25' (SS) Spoon | 2-2-2-4 | 0" | - | No Recovery | | |
| 26 | 25-27' (SS) Spoon, | 5-2-5-4 | 12" | 4495 | 0-8" Gray/brown, fine to medium SAND, some Silt, hydrocarbon odor, NAPL blebs<br>8-12" Dark brown, micaceous SILT, hydrocarbon odor, NAPL blebs | | |
| 28 | 27-29' (SS) Spoon | WOR-WOR-1-4 | 10" | 792 | 0-10" Wet, gray/brown, SAND and SILT, some weathered Gneissic Schist, slight hydrocarbon odor, NAPL blebs (0.25" diam), low viscosity NAPL | | |
| 30 | 29-31' (SS) Spoon | WOR-WOR-1-1 | 10" | 3700 | 0-10" Dark brown, fine to medium SAND and SILT, some coarse Gravel, hydrocarbon odor, NAPL blebs | | |
| 32 | 31-33' (SS) Spoon | 2-1-2-1 | 12" | NA | 0-12" Wet, soft, dark gray, SAND, some Silt, hydrocarbon odor | | |
| 34 | 33-35' (SS) Spoon | 3-2-2-1 | 8" | 1411 | 0-8" Brown, fine SAND, some Silt, little weathered Gneissic Schist, hydrocarbon odor, NAPL blebs | | |
| 36 | 35-37' (SS) Spoon | WH/24" | 2" | 85 | 0-2" Brown, fine SAND, some Silt, little weathered Gneissic Schist, hydrocarbon odor | | |
| 38 | 37-39' (SS) Spoon | 2-3-4-6 | 6" | 4186 | 0-6" Brown, fine SAND and weathered SCHIST, some BRICK,trace coal fragments, slight hydrocarbon odor | | |
| 40 | 39-41' (SS) Spoon | 18-25-50/0" | 10" | 8072 | 0-10" Brown, fine SAND and black weathered GNEISSIC SCHIST, quartz in drive shoe, NAPL blebs, spotty sheen | | |
| 42 | 41-41.5' (SS) Spoon | 50/4" | 4" | 9999 | 0-4" Brown, fine to medium SAND and weathered SCHIST, trace Cobble, hydrocarb | | |

End of Boring at 42 ft bgs

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (3")
WOR = Weight of Rod
WH = Weight of Hammer
C = CORED

0-5'=Hand Clearance (3/12)
5 to 11', 13 to 41.25' =Interval sampling with split spoon (3"); 11 to 13' and 40-41' = Auger; Auger refusal at 42' bgs
Quantification of NAPL performed by Noah Garguilo on 5/2/12 using bag samples
Boring complete to 42' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-8 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Only Hand Cleared
**Inspector:** Jeena Shepard
**Rig Type:** Vactron

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~2 ft bgs | DTW | | |
| Date | 3/12/2012 | | | |
| Time | 1330 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, high 60s

**Date/Time Start:** 3/12/12; 1230

**Date/Time Finish:** 3/12/12; 0350

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT | | |
| | | | | | 8-24" Brown medium to coarse SAND, some Silt and fine to medium Gravel | | |
| 2 | | | | | 24" Ground water encountered | | Observed Water Level at 2 ft bgs |
| | | | | | Dig bar advanced to 60" in several locations | | |
| 4 | | | | | | | |
| | | | | | End of Boring at 5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/12)
This PDI location was not drilled because of field observations at PDI-7.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-9 — Sheet 1 of 1

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** S. Miller, C. Stratton, C. Migliori
**Inspector:** Sam Monte/Zohar Lavy/Noah Garguilo
**Rig Type:** CME 85 HSA, Sonic, CME 75 (Core)

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** High 50s, breezy
**Date/Time Start:** 4/5/12 ; 1305
**Date/Time Finish:** 4/13/12 ; 1256

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW ~3.5 ft bgs | DTW | | |
| Date | 3/19/2012 | | | |
| Time | 1000 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-10" CONCRETE | | |
| | | | | 0.0 | 10-24" Moist, brown fine to coarse SAND, some Silt, some medium to coarse Gravel | | |
| 2 | | | | 0.0 | 24-30" BRICK fragments | | |
| | | | | 7.2 | 30-42" Brown fine to coarse SAND, some Silt, some medium to coarse Gravel, some BRICK fragments, slight hydrocarbon odor | | |
| 4 | | | | | | | |
| | | | | 19.8 | 42-60" Wet, brown fine to coarse SAND, some Silt, some medium to coarse Gravel, some BRICK fragments, slight hydrocarbon odor, NAPL Saturated and NAPL staining, strong hydrocarbon odor | | |
| | | | | | | | |
| | | | | | | | |
| | 5-7' (SS) 3" Spoon | 1-3-3-4 | 18" | 115 | 0-18" Moist, brown fine Sand and angular GRAVEL, some Silt, hydrocarbon odor, NAPL blebs | | |
| 6 | | | | | | | |
| | 7-9' (SS) 3" Spoon | 1-3-2-2 | 12" | 82.9 | 0-12" Moist, brown fine Sand and angular GRAVEL, some Silt, hydrocarbon odor, NAPL blebs-saturation | | |
| 8 | | | | | | | |
| | 9-11' (SS) 3" Spoon | 2-1-3-7 | 18" | 128 | 0-18" Moist, brown fine Sand and angular GRAVEL, some Silt, hydrocarbon odor, little Brick, NAPL blebs-saturation | | |
| 10 | | | | | | | |
| | 11-13' (SS) 3" Spoon | 3-1-2-2 | 18" | 161 | 0-18" Wet, dark brown, SILT and GRAVEL, some fine Sand, Slight fuel oil-like odor, NAPL blebs, sheen present | | |
| 12 | | | | | | | |
| | 13-15' (SS) 3" Spoon | 4-2-2-3 | 20" | 103 | 0-20" Wet, dark brown fine SAND, some Silt, little coarse angular Gravel, hydrocarbon odor, NAPL blebs, sheen | | |
| 14 | | | | | | | |
| | 15-17' (SS) 3" Spoon | 1-4-5-23 | 20" | 928 | 0-10" Wet, dark brown fine SAND, some Silt, little coarse angular Gravel, hydrocarbon odor, NAPL blebs-saturation, sheen | | |
| | | | | | | | |
| 16 | | | | | 10-20" Brown, fine SAND and BRICK, strong hydrocarbon odor | | |
| | 17-19' (SS) 3" Spoon | 49-50/3" | 10" | 659 | 0-10" Light brown, fine SAND, some red Brick and Mortar, strong hydrocarbon odor, NAPL blebs | | |
| 18 | | | | | | | |
| | 19-21' (SS) 2" Split Spoon | 50/5" | 5" | 2.5 | 0-5" BRICK and black GNEISSIC SCHIST | | |
| 20 | | | | | | | |
| | 20-25' (SO) Sonic | --- | 32" | 2.3 | 0-32" BRICK | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-27' (SO, SS) 2" Split Spoon | 50/5" | 5" | 2.8 | 0-5" BRICK | | Mortar is adhered to brick, and different wythes are visible. Sample appears to have fractured at each course (drilling fracture) resulting in a stack of cylinders each roughly 4" tall. |
| 26 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 60" | 3.2 | 0-60" BRICK and MORTAR | | |
| 28 | | | | | | | |
| | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 60" | 2.8 | 0-60" BRICK and MORTAR | | |
| | | | | | | | |
| 32 | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-37' (SO) Sonic | --- | 24" | 3.1 | 0-12" CONCRETE | | |
| 36 | | | | | 12-24" White SCHIST | | |
| | | | | | Advanced Sonic casing through rock from 37 to 39.5 ft bgs | | |
| 38 | | | | | | | |
| | 39.5-44.5' (C) Coring | | RQD: 83% | | Cored from 39.5 to 44.5': Hard, fresh, white SCHIST, mechanical break in top foot due to sonic. See note 5 below. | | |
| 40 | | | | | 39.5-40.5' -> 8 minutes 43.5-44.5' -> 30 minutes | | |
| | | | | | 40.5-41.5' -> 13 minutes | | |
| 42 | | | | | 41.5-42.5' -> 21 minutes | | |
| | | | | | 42.5-43.5' -> 25minutes | | |
| | | | | | End of Boring at 44.5 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON: (3", 2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/19) ; 5 to 19'=Interval sampling with (3")split spoon, 25 to 27'=(2") split spoon, 19 to 37' sonic rig

Rock coring from 39.5 to 44.5', ADT experienced difficulty pulling core barrel. Reverse hammer (300 lb) used. Due to this, no additional core run was performed.

Boring complete to 44.5'; Grouted to surface

Additional Notes:

1. Drilled 4/5/12 by Sean Miller of ADT with CME 85 truck rig with 4 1/4 " HSA. Logging by Sam Monte. Drilled to 19 ft bgs.
2. Drilled 4/11/12 by Chris Stratton of ADT on Rotosonic rig, logging by Zohar Lavy. Drilled to 39.5 ft bgs.
3. Cored 4/13/12 by Chris Migliori of ADT with CME 75 truck rid. Logging by Noah Garguilo.
4. Quantification of NAPL abundance performed by Noah Garguilo on 4/13/12 using bag samples.
5. Core 39.5 to 44.5 ft: No vein dip apparent in rock core. Fractures are mechanical and horizontal except at 24" where fracture is 45 degrees. No staining/weathering on core.

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-10 — Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Sam Monte, Noah Garguilo
**Rig Type:** Sonic / CME 75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Cloudy, mid 60s
**Date/Time Start:** 5-8-12, 13:30
**Date/Time Finish:** 5-11-12, 10:00

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~2' | DTW | | |
| Date | 4/27/2012 | | | |
| Time | 1130 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT | | Observed Water Level at 2' bgs. |
| | | | | 0.0 | 8"-2' Brown fine to coarse SAND and COBBLE | | |
| 2 | | | | 0.0 | Groundwater encountered at 2 ft bgs | | |
| | | | | 0.0 | Dig bar advanced to 60" in 3 locations | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 60" | 0.2 | 0-60" Wet, grey fine SAND and Silt, some weathered Schist | | |
| 6 | | | | | | | |
| | | | | | | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 42" | 1.0 | 0-18" Soft, wet, brown/grey SILT, trace fine micaceous Sand | | |
| | | | | | 18-36" CONCRETE | | |
| 12 | | | | 63.7 | 36-42" Moist, red/brown, micaceous SILT, trace fine Sand, slight hydrocarbon odor | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 48" | 1.4 | 0-12" Wet, dense, red/brown SILT | | |
| 16 | | | | 2.4 | 12-36" Wet, brown, fine to medium SAND, some Silt | | |
| | | | | 0.4 | 36-48" Wet, red/brown, fine to medium SAND, some Silt, some coarse Gravel | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | 20-25' (SO) Sonic | --- | 60" | 0.9 | 20-25' Moist, red/brown, fine SAND, some Silt, some Gravel, trace Cobble | | |
| | | | | | | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-29' (SO) Sonic | --- | 48" | 0.7 | 0-42" Moist, hard, red/brown, fine to coarse SAND, little to some Gravel, little Silt | | |
| 26 | | | | | | | |
| | | | | 4.0 | 42-48" Black, highly weathered GNEISSIC SCHIST, slight hydrocarbon odor | | |
| 28 | | | | | | | |
| | 29-35' (SO) Sonic | --- | 48" | --- | 0-12" Black, weathered GNEISSIC SCHIST | | |
| 30 | | | | | 12-48" Black GNEISSIC SCHIST | | |
| | | | | | | | |
| 32 | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-40' (SO) Sonic | --- | 60" | ---- | 0-60" Hard, black GNEISSIC SCHIST | | |
| 36 | | | | | | | |
| | | | | | | | |
| 38 | | | | | | | |
| | | | | | | | |
| 40 | 40-45' (C) Coring | --- | RQD: 100% | --- | Cored from 40 to 45': Hard, black, gneissic SCHIST, occasional red garnets, highly folded with vein dip generally 45° but highly variable. Vein dip changes rapidly throughout sample. | | |
| | | | | | | | |
| 42 | | | | | 40-41' -> 5 minutes | | |
| | | | | | 41-42' -> 9 minutes | | |
| | | | | | 42-43' -> 5 minutes | | |
| | | | | | 43-44' -> 5 minutes | | |
| 44 | | | | | 44-45' -> 7 minutes | | |
| | | | | | End of Boring at 45 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/15)
5 to 40'=Interval sampling with and sonic rig (5/8)
40 to 45'=Rock Cored (1 segment, 5/11)
Boring complete to 45' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Straton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 1 of 1 **PDI-11**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 3/30/2012 | | | |
| Time | 1355 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, Up to 56F, Wind: 5-10 S
**Date/Time Start:** 3/28/12 ; 1330
**Date/Time Finish:** 4/2/12 ; 1415

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0 | 0-9" ASPHALT | | Observed Water Level at 5 ft bgs |
| | | | | 0 | 9-18" Moist, brown SILT and GRAVEL, some Brick fragments | | |
| 2 | | | | 0 | 18-60" Moist, brown SILT and fine SAND, some Cobble | | |
| | | | | 0 | | | |
| 4 | | | | 0 | | | |
| | 5-7' (SS) Spoon | 3-4-5-5 | 8" | 1.5 | Wet, brown fine to coarse SAND, little fine to coarse subangular Gravel, trace Silt | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 40" | 2.2 | 0-16" Wet, brown fine to coarse SAND, little fine to coarse subangular Gravel, trace Silt | | |
| 8 | | | | | 16-36" Wet, dark brown, fine to medium SAND, some blue/green Silt and Clay, little subangular-angular fine to medium Gravel | | |
| | | | | | | | |
| | | | | | 36-40" Wet, dark brown, fine to medium SAND and WOOD, some blue/green Silt and Clay, little sub-angular to angular fine to medium Gravel | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 5-21-6-7 | 12" | 2.8 | 0-8" Moist, dark brown, fine to coarse SAND, little green/olive Silt/Clay, little angular to sub-angular fine-medium Gravel, trace Brick | | |
| | | | | | | | |
| | | | | | 8-12" Moist, dark brown, fine to coarse SAND, little green/olive Silt/Clay, little angular to sub-angular fine-medium Gravel, little weathered black Gneissic Schist, trace Brick | | |
| | | | | | | | |
| 12 | 10-15' (SO) Sonic | --- | 60" | 1.7 | 0-40" Brown, fine to coarse SAND, little gray/olive Clay/Silt, little sub-angular medium to coarse Gravel, trace weathered black Gneissic Schist; 40-60" Orange/brown fine to coarse SAND, little gray/olive Clay/Silt, little subangular medium to coarse Gravel | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-17' (SS) Spoon | WOH/18" | 14" | 0.9 | 0-10" Wet, brown/orange, fine to medium SAND, some Silt, trace fine angular to sub-angular Gravel, loose; 10-14" Wet, brown/orange, fine to medium SAND, some Silt, very loose | | |
| | | | | | | | |
| | 15-20' (SO) Sonic | --- | 10" | 3.2 | Wet, brown, fine to medium SAND, little Silt, little black Gneissic Schist, trace angular to sub-angular fine to coarse Gravel, very loose | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | 20-22' (SS) Spoon | 5-2-1-1 | 2" | 0.8 | Wet, dark brown/black, fine SAND, trace Mica | | |
| | | | | | | | |
| 22 | 20-25' (SO) Sonic | --- | 0 | - | No Recovery | | |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-27' (SS) Spoon | 6-7-3-3 | 8" | 37.5 | Wet, brown, fine to medium SAND, some Brick, little weathered black Gneissic Schist, trace Silt, slight hydrocarbon odor, sheen | | |
| 26 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 20" | 140.0 | Wet, brown, fine to medium SAND, some Silt, little Brick, little weathered black Gneissic Schist, trace Glass, slight hydrocarbon odor, sheen | | |
| 28 | | | | | | | |
| | | | | | | | |
| 30 | 30-32' (SS) Spoon | 8-8-6-6 | 10" | 184 | Black, fine to medium SAND, trace Mica, trace sub-angular coarse Gravel, trace weathered black Gneissic Schist | | |
| | | | | | | | |
| 32 | 30-35' (SO) Sonic | --- | 20" | 75 | Wet, brown/gray, fine to medium SAND, some sub-angular to round fine to coarse Gravel, trace Brick, track black Gneissic Schist, hydrocarbon odor | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-37' (SS) Spoon | 1/12" , 50/0" | 4" | 259 | Brown/gray, medium to coarse SAND, NAPL blebs, hydrocarbon odor | | |
| 36 | | | | | | | |
| | 35-40' (SO) Sonic | --- | 14" | - | METAL, BRICK and grey/green GNEISSIC SCHIST | | |
| 38 | | | | | | | |
| | | | | | | | |
| 40 | 40-42' (SS) | 50/0" | 1" | - | Subangular medium GRAVEL and GNEISS | | |
| | 40-41' (SO) Sonic | --- | 12" | 875 | 0-9" Gray, medium to coarse SAND, hydrocarbon odor | | |
| | | | | | 9-12" Gray/white, SCHIST, trace Metal | | |
| | 41-46' (C) Coring | --- | Recovery: 51" RQD: 85% | | Cored from 41 to 46' bgs: Gray SCHIST with quartz veins (9 segments) | | |
| | | | | | 41-42' -> 15 minutes | | |
| 42 | | | | | 42-43' -> 13 minutes | | |
| | | | | | 43-44' -> 26 minutes | | |
| 44 | | | | | 44-45' -> 30 minutes | | |
| | | | | | 45-46' -> 46 minutes | | |
| | | | | | End of Boring at 46 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
WH = Weight of Hammer
C = CORED

0 to 5'=Hand-Clearance (3/16)
5 to 41'=Interval sampling with split spoon and sonic rig
41 to 46'=Rock Cored (9 segments)
Boring complete to 46' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-12 (Sheet 1 of 1)
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~3.5 | DTW | | |
| Date | 3/19/2012 | | | |
| Time | 1330 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, Up to Mid-60s
**Date/Time Start:** 4/3/12 ; 1000
**Date/Time Finish:** 4/4/12 ; 1140

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-10" CONCRETE | | |
| | | | | 0.0 | 10-24" Brown, fine to medium SAND, some Silt and medium to coarse Gravel, little Brick fragments and Wood chips; | | |
| 2 | | | | 0.0 | 24-42" Brown, fine SAND, some Silt, little medium to coarse Gravel, little Brick and Concrete fragments; Groundwater encountered at 42" bgs | | Observed Water Level at 3.5 ft bgs |
| 4 | | | | | Dig bar advanced to 60" in several locations | | |
| | 5-7' (SS) Spoon | 4-12-6-3 | 8" | 2.8 | 0-4" Wet, dark brown, medium SAND, some angular fine to medium Gravel, trace Silt | | |
| 6 | | | | | 4-8" Wet, tan/brown, medium to coarse SAND, trace Gneiss | | |
| | 5-10' (SO) Sonic | --- | 50" | 7.8 | 0-20" Wet, tan/brown, medium to coarse SAND, trace Gneiss, trace sub-angular to angular medium to coarse Gravel | | |
| 8 | | | | | 20-50" Wet, dense, brown/orange, fine to coarse SAND, some sub-angular to round fine to medium Gravel, trace Gneiss, trace Silt | | |
| 10 | 10-12' (SS) Spoon | 7-10-11-13 | 12" | 122 | 0-10" Wet, dense, brown/orange, fine to coarse SAND, some sub- angular to round fine to medium Gravel, trace Gneiss, trace Silt | | |
| | | | | | 10-12" Olive/brown, fine to coarse SAND, some fine to medium sub-angular to sub-round Gravel | | |
| 12 | 10-15' (SO) Sonic | --- | 10" | 163 | 0-10" Wet, black, fine to coarse SAND, some fine to medium sub-angular Gravel, little coarse round Gravel, strong hydrocarbon odor, Schist Cobble/Boulder in sonic cutting | | |
| 14 | 12.5-14' (SO) | --- | 29.5" | - | Cored from 12.5 to 14': 0-29.5" Gray/tan SCHIST with some rose quartz. (6 segments) | | |
| | 14-22.4' (C) Coring | --- | Recovery: 52" RQD: 73% | - | Cored from 14 to 22.4': 0-9" Coarse grained grey SCHIST, white quartz garnets; 9-16" Rose QUARTZ-SCHIST; 16-52" Coarse grained grey SCHIST, white quartz garnets | | NAPL observed in wash water while coring from 19-19.5 ft bgs |
| 16 | | | | | 14-15' -> 15 minutes 19-20' - > 18 minutes | | |
| | | | | | 15-16' -> 24 minutes 20-21' - > 20 minutes | | |
| 18 | | | | | 16-17' -> 13 minutes 21-22.4' - > 17 minutes | | |
| | | | | | 17-18' -> 15 minutes | | |
| | | | | | 18-19' -> 17 minutes | | |
| 20 | | | | | | | |
| | | | | | End of Boring at 22.4 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/19)
5 to 12.5=Interval sampling with split spoon and sonic rig
12.5 to 22.4'=Rock Cored (17 segments)
Boring complete to 22.4' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Straton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-13 Sheet 1 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/5/2012 | | | |
| Time | 1100 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** High 50s, breezy
**Date/Time Start:** 4/5/12 ; 1042
**Date/Time Finish:** 4/10/12 ; 1145

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT | | |
| | | | | 0.0 | 8-24" Moist, gray, medium to coarse SAND, some Silt, some medium to coarse Gra | | |
| 2 | | | | | 24-36" ASPHALT | | |
| | | | | | 36-42" COBBLE | | |
| 4 | | | | | 48-60" Moist, gray, medium to coarse SAND, some Silt, little Cobble | | Observed Water Level at 5 ft bgs |
| | 5-7' (SS) Spoon | 6-1-2-3 | 0" | - | No Recovery | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 26" | 111.0 | Wet, black, fine to coarse SAND, some fine to coarse sub-angular Gravel, little Brick, trace Silt, trace Wood, NAPL/tar coated, hydrocarbon odor | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 3-4-5-4 | 10" | 189 | Wet, black, medium to coarse SAND, some fine to coarse subangular-subround Gravel, trace Brick, NAPL blebs-saturation | | |
| | 10-15' (SO) Sonic | --- | 24" | 73.2 | Black fine to coarse SAND, little fine to coarse sub-angular Gravel, trace Brick, trace Wood, NAPL saturation, strong hydrocarbon odor, staining, sheens | | |
| 12 | | | | | | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-17' (SS) Spoon | 12-12-50/3" | 8" | 86.5 | BRICK and WOOD, little sub-angular fine to medium Gravel, hydrocarbon odor, sh | | |
| 16 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 60" | | 0-12" WOOD | | |
| 18 | | | | | 12-60" BRICK | | |
| | | | | | | | |
| 20 | 20-22' (SS) Spoon | 50/5" | 0" | - | No Recovery | | |
| 22 | 20-25' (SO) Sonic | --- | 24" | 12.7 | Wet, highly weathered BRICK, some angular medium to coarse Gravel, trace fine to coarse Sand | | Sonic sampler refusal at 22 ft bgs |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-27' (SS) Spoon | 17-50/3" | 6" | 18.6 | Wet, BRICK and MORTAR | | |
| 26 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 60" | 5.2 | Wet, BRICK and MORTAR | | |
| 28 | | | | | | | |
| | | | | | | | |
| 30 | 30-32' (SS) Spoon | 23-35-50/1" | 12" | 3.1 | Wet, BRICK and MORTAR | | |
| 32 | 30-35' (SO) Sonic | --- | 60" | 2.7 | Wet, BRICK and MORTAR | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-37' (SS) Spoon | 15-22-50/2" | 10" | 2.5 | Wet, BRICK and MORTAR | | |
| 36 | | | | | | | |
| | 35-40' (SO) Sonic | --- | 60" | 2.6 | 0-36" Wet, BRICK and MORTAR | | |
| 38 | | | | | 36-60" Grey SCHIST and CONCRETE | | |
| | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/20)
5 to 20'=Interval sampling with split spoon and sonic rig
40 to 44.5'=Rock Cored (6+ segments)
Boring complete to 44.5' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-13 Sheet 2 of 2

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Straton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/5/2012 | | | |
| Time | 1100 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** High 50s F, breezy
**Date/Time Start:** 4/5/12 ; 1042
**Date/Time Finish:** 4/10/12 ; 1145

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 40 | 40-44.5' (C) Coring | --- | Recovery: 43" RQD: 79% | | Cored from 40 to 44.5': Gray SCHIST with quartz veins (6+ segments) | | NAPL observed in wash water while coring at 42.5 ft bgs |
| | | | | | 40-41' -> 15 minutes | | |
| 42 | | | | --- | 41-42' -> 22 minutes | | |
| | | | | | 42-43' -> 17 minutes | | |
| 44 | | | | | 43-44' -> 40 minutes | | |
| | | | | | 44-44.5' -> 30 minutes | | |
| | | | | | End of Boring at 44.5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/20)
5 to 20'=Interval sampling with split spoon and sonic rig
40 to 44.5'=Rock Cored (6+ segments)
Boring complete to 44.5' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Only Hand Cleared
**Inspector:** Lopa Naik
**Rig Type:** Vactron

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-14 Sheet 1 of 1
**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**
See Site Plan

**Weather:** Partly Cloudy, low 70s
**Date/Time Start:** 3/19/12; 0800
**Date/Time Finish:** 3/19/12; 0930

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 3/19/2012 | | | |
| Time | 930 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT<br>8-48" Brown medium to coarse SAND, some Silt and fine to medium Gravel<br>48-54" BRICK<br>54-60" Moist, brown medium to coarse SAND, some Silt, little fine to medium Grav | | Observed Water Level at 5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | | | | | End of Boring at 5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/19)
This PDI location was not drilled because of field observations at PDI-12, PDI-13, and PDI-15.

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic, CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-15 (Sheet 1 of 1)
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 5/14/2012 | | | |
| Time | 1210 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Cloudy, mid 60s, rain
**Date/Time Start:** 5/14/12; 1050
**Date/Time Finish:** 5/17/12 0945

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT | | Observed Water Level at 5 ft bgs |
| | | | | 0.0 | 8-17" Moist, brown SILT and GRAVEL some Sand and Brick fragments | | |
| 2 | | | | 0.0 | 17-21" Moist, tan SILT, some Sand | | |
| | | | | 0.0 | 17-48" Moist, brown SILT, some Sand | | |
| 4 | | | | | 48-60" Moist, brown SILT, some Sand and fine to coarse Gravel, little Cobble | | |
| | 5-7' (SS) Spoon | 2-2-2-3 | 14" | 483.0 | 0-6" Wet, brown/grey fine to medium SAND, some angular to sub-angular fine to medium Gravel; 6-14" Moist, brown/dark grey fine to medium SAND, trace sub-angular fine Gravel | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 30" | 389.0 | 0-12" Wet, brown/grey fine to coarse SAND, some sub-angular to sub-round fine to medium Gravel; 12-20" Wet, brown/dark grey fine to medium SAND, trace Silt, hydrocarbon odor, slight sheen; 20-30" Wet, dark grey/black fine to medium SAND, little Silt, staining | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 2-3-50/3" | 6" | 1188.0 | Wet, black/orange fine to medium SAND, trace Silt, strong hydrocarbon odor, NAPL blebs, staining, sheens; White Schist in tip of cutting shoe | | |
| | | | | | | | |
| 12 | 10-13' (SO) Sonic | --- | 36" | --- | 0-12" Wet, black/orange fine to medium SAND, some white Schist, trace Silt, strong hydrocarbon odor, NAPL blebs, staining, sheens; 12-36" White SCHIST | | |
| | | | | | | | |
| | 13-18' (C) Coring | --- | Recovery: 60" RQD: 83% | --- | Cored from 13 to 18': Hard, white, SCHIST, very abundant rose Quartz, occasional 1/4"-1/2" veins of black Gneissic Schist from 45-60" with 90° dips, fractures at 7", 39" and 48"; closed vertical fracture from 48-55" along Gneissic Schist vein | | |
| 14 | | | | | | | |
| | | | | | | | |
| 16 | | | | | 13-14' - >10 minutes 17-18' - >11 minutes | | |
| | | | | | 14-15' - > 12 minutes | | |
| | | | | | 15-16' - >9 minutes | | |
| | | | | | 16-17' - > 10 minutes | | |
| 18 | 18-23' (C) Coring | --- | Recovery: 56" RQD: 90% | | Cored from 18 to 23 ft bgs: Hard, white SCHIST, abundant rose Quartz, no vein dip; NAPL coating throughout core; a 45° fracture at 12" is lightly weathered and black stained; additional 10° fractures at 37" and 39" | | |
| | | | | | | | |
| | | | | | | | |
| 20 | | | | | 18-19' - > 12 minutes 22-23' - > 10 minutes | | |
| | | | | | 19-20' - >10 minutes | | |
| | | | | | 20-21' - > 13 minutes | | |
| 22 | | | | | 21-22' - > 10 minutes | | |
| | | | | | End of Boring at 23 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON: 2"
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/15)
5 to 13'=Interval sampling with split spoon (2 ") and sonic rig
13 to 23'=Rock Cored
Boring complete to 23' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** C. Jenkins / C. Migliori
**Inspector:** Noah Garguilo
**Rig Type:** Sonic / CME 75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-16 (Sheet 1 of 1)
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 5/9/2012 | | | |
| Time | 1105 | | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

**Weather:** Rain, low 60s
**Date/Time Start:** 5/9/12; 1105
**Date/Time Finish:** 5/14/12; 1000

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT | | |
| | | | | 0.0 | 8-60" Brown fine to coarse SAND, some Concrete and Cobble, little brick | | |
| 2 | | | | | | | |
| 4 | | | | | | | Observed Water Level at 5 ft bgs |
| | 5-10' (SO) Sonic | --- | 42" | 1.4 | 0-24" Wet, soft, brown, fine to coarse SAND, little sub-round Gravel, trace Silt | | |
| 6 | | | | | | | |
| | | | | | 24-30" Black, weathered GNEISSIC SCHIST | | |
| 8 | | | | 0.3 | 30-42" Moist, firm, brown, fine SAND, little Gravel, trace Silt | | |
| 10 | 10-15' (SO) Sonic | --- | 15" | 0.4 | 0-15" Wet, soft, brown, medium SAND and weathered GNEISSIC SCHIST, trace Gravel, trace Silt, slight hydrocarbon odor | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 48" | 0.2 | 0-42" Moist, firm, brown (green and red mottled), fine SAND, little Gravel, trace Cobbles, trace Silt, trace porcelain | | |
| 16 | | | | | | | |
| 18 | | | | | 42-48" Moist, firm, dark grey, SAND, some Gravel | | |
| 20 | 20-25' (SO) Sonic | --- | 0" | --- | 20-25': No Recovery, abundant NAPL in return water from 22-25' bgs. Difficult drilling 22 to 25': possibly metal | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 12" | 44.8 | 0-0.5" METAL | | Two 1/4" plate steel sections oriented horizontally (possibly pushed down from 22 to 25' zone). |
| 26 | | | | | 0.5-12" Brown, CONCRETE, some Sand and Gravel | | |
| 28 | | | | | | | |
| 30 | 30-32' (SO) Sonic | | 24" | | 0-24": Hard, white SCHIST | | |
| 32 | 32-37' (C) Coring | | Recovery: 60" RQD: 90% | --- | Cored from 32 to 37': Hard, white SCHIST; no folding or vein dip apparent; existing fractures at 14" (slight rust color staining), 16", and 40", fractures at 16" and 40" exhibit black staining - possibly NAPL; NAPL coating in small area at 16"; existing fractures are planar at 0-20° | | |
| 34 | | | | | 32-33' -> 13 minutes | | |
| | | | | | 33-34' -> 18 minute | | |
| | | | | | 34-35' -> 16 minutes | | |
| 36 | | | | | 35-36' -> 20 minutes | | |
| | | | | | 36-37' -> 20 minute | | |
| | | | | | End of Boring at 37 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Cleared
5 to 32=Sonic rig
32 To 37=Rock Cored (1 segment)
Boring complete to 37' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-17 (Sheet 1 of 1)

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 3/12/2012 | | | |
| Time | 1230 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, high 60s
**Date/Time Start:** 3/12/12 ; 1200
**Date/Time Finish:** 3/14/12 ; 1330

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | - | 0-10" ASPHALT<br>10-36" Brown, fine to coarse SAND, some sub-angular to round fine to medium, Gravel, little Cobble, trace Gneissic Schist, trace Brick<br>36-60" Moist, brown, fine to coarse SAND, some round Cobble, little sub-angular Gravel | | |
| 2 | | | | | | | |
| 4 | | | | 0.2 | | | Observed Water Level at 5 ft bgs |
| 6 | 5-7' (SS) Spoon | 6-2-2-3 | 14" | 2.3 | 0-11" Moist, dark brown, fine to coarse SAND, little to some Silt, Brick fragments at 9" | | |
| 8 | 7-9' (SS) Spoon | 4-7-8-6 | 12" | 2.3 | 0-5" Moist to wet, dark brown, fine to coarse SAND, some Silt<br>5-9" Black, micaceous, GNEISSIC SCHIST<br>9-12" Moist, dark brown, coarse SAND, some micaceous, Gneissic Schist | | |
| 10 | 9-11' (SS) Spoon | 3-2-2-2 | 6" | 473 | 0-6" Wet, dark brown, fine to coarse SAND, some Gravel, little Silt, Brick in drive shoe, strong Naphthalene odor | | |
| 12 | 11-13' (SS) Spoon | 5-6-8-2 | 15" | 271 | 0-15" Wet, gray SAND, some Gravel, little Silt, Brick in drive shoe, brown NAPL bleb at 7" | | |
| 14 | 13-15' (SS) Spoon | 2-2-2-2 | 0" | - | No Recovery<br>Brick fragment in drive shoe | | |
| 16 | 15-17' (SS) Spoon | 1-2-2-2 | 0" | 38.5 | No Recovery<br>Rock fragment in drive shoe | | |
| 18 | 17-19' (SS) Spoon | 1-3-3-3 | 10" | 39.8 | 0-10" Wet, dark brown, fine to coarse SAND, trace Silt, rock fragment in drive shoe | | |
| 20 | 19-21' (SS) Spoon | 5-3-1-5 | 6" | 33.2 | 0-6" Wet, dark brown, fine to coarse SAND, little brick fragments, trace Silt | | |
| 22 | 21-23' (SS) Spoon | 2-3-4-5 | 20" | 87.5 | 0-6" Wet, dark brown, fine to coarse SAND, little Silt, little fine Gravel<br>6-20" Wet, gray/brown, fine SAND and SILT, trace black fibrous rope fragments, trace | | |
| 24 | 23-25' (SS) Spoon | 1-5-5-7 | 1" | 34.2 | 0-1" Wet, dark brown, medium to coarse SAND, trace Silt, trace Gravel, trace Brick, rock fragment stuck in drive shoe | | |
| 26 | 25-27' (SS) Spoon | 8-16-10-4 | 12" | 94.3 | 0-4" Wet, dark brown, fine to coarse SAND<br>4-12" Wet, gray-brown, fine to medium SAND, some Silt, little black organic material, trace Gravel | | |
| 28 | 27-29' (SS) Spoon | 4-3-3-3 | 11" | 24.2 | 0-11" Wet, gray-brown, fine to medium SAND, some Silt and Brick, trace Gravel, trace porcelain, trace glass, trace black weathered rope | | |
| 30 | 29-31' (SS) Spoon | 3-3-4-4 | 18" | 157 | 0-18" Wet, gray-brown, fine to coarse SAND, some Gravel, trace Brick, trace black organic matter | | |
| 32 | 31-33' (SS) Spoon | 13-4-5-5 | | | No sample retrieved, drive shoe damage, unable to open split spoon | | |
| 34 | 33-35' (SS) Spoon | 50/3" | 3" | 994 | 0-3" Moist, brown, medium to coarse SAND, trace micaceous, Gneissic Schist, brick in drive shoe | | |
| 36 | 35-37' Augered | - | - | - | Augered to 37' bgs, augers grinding | | |
| | 37-37.75' (SS) Spoon | 10-50/3" | 9" | 1955 | 0-5" Brown, fine to medium SAND, trace Gravel, strong hydrocarbon odor; 5-8" BRICK; 8-9" Black micaceous SCHIST and QUARTZ | | |
| 38 | 38-38.1' (SS) | 50/1" | 1" | 124 | 0-1" White with black flecked, QUARTZ and SCHIST | | |
| | | - | - | - | Roller bit to 39' | | |
| 40 | 39-42' (C) Coring | | Recovery: 12" RQD: 0 | | Cored from 39 to 42' bgs: 0-12" Hard, fresh, white, coarse grained, micaceous SCHIST, abundant Quartz garnets<br>39-40' -> 10 minutes<br>40-41' -> 6 minutes<br>41-42' -> 35 minutes | | |
| 44 | 42-45' (C) Coring | | Recovery: 36" RQD: 81% | | Cored from 42 to 45' bgs: 0-12" Hard, fresh to slightly weathered, white, micaceous SCHIST, occasional white-rose Quartz garnets<br>42-43' -> 21 minutes<br>43-44' -> 15 minutes<br>44-45' -> 15 minutes | | |
| | | | | | End of Boring: 45' | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/8)
5 to 38'=Interval sampling with split spoon and augers
39 to 45'=Rock Cored
Boring complete to 45' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-18/MW-23 (Sheet 1 of 1)

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliori, Chris Stratton
**Inspector:** Noah Garguilo, Zohar Lavy
**Rig Type:** CME-75, Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~4.5 ft bgs | DTW 0.24' bgs | | |
| Date | 3/7/2012 | 6/18/12 | | |
| Time | 1000 | 0800 | | |
| Meas. From | Hand Clearance | Top of Casing | | |

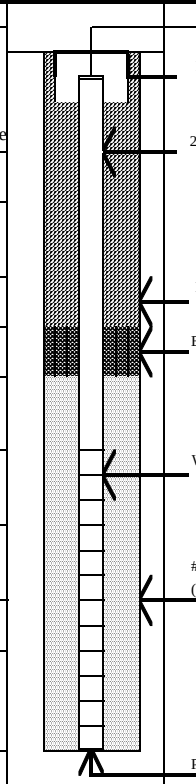
**Weather:** Partly cloudy, low 70s
**Date/Time Start:** 3/20/12; 1330
**Date/Time Finish:** 3/30/12; 0920

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-10" ASPHALT; 10-36" Moist, brown, fine to coarse SAND, some sub-angular to round fine to medium, Gravel, trace Brick, trace Silt, trace Metal; 36-54" Moist, brown, fine to coarse SAND, some sub-angular to round fine to medium, Gravel, trace Brick, trace Silt; 54-70" Wet, brown, fine to coarse SAND, some sub-angular to round fine to medium, Gravel, trace Brick, trace Silt; 60-70" Boulder on west side |
| | | | | 0.0 | |
| 2 | | | | 0.0 | |
| | | | | 0.0 | |
| 4 | | | | | |
| | 5-7' (SS) 2" Spoon | 1-2-1-1 | 6" | 5.2 | Wet, angular to sub-angular fine to coarse GRAVEL and weathered black GNEISSIC SCHIST |
| 6 | | | | | |
| | 7-9' (SS) 2" | 1-1-5-3 | 8" | 4.7 | 0-2" Wet, angular to sub-angular fine to coarse GRAVEL and weathered black GNEISSIC SCHIST, little fine brown/grey Sand; 2-8" Wet, brown/grey fine to medium SAND, some Silt, little angular to sub-angular medium to coarse Gravel |
| | | | | | |
| 8 | | | | | |
| | 9-11' (SS) 3" | 1-2-5-6 | 10" | 3.3 | Brown/grey fine to medium SAND, little Silt, little angular to sub-angular Gravel, trace weathered black Gneissic Schist |
| 10 | | | | | |
| | 11-13' (SS) 3" Spoon | 3-5-14-18 | 8" | 4.0 | Wet, black, white, rose angular to sub-angular fine SAND and coarse GRAVEL, little black Gneissic Schist |
| 12 | | | | | |
| | 13-15' (SS) 3" Spoon | 8-20-28-20 | 15" | 22.9 | 0-12" Wet, black, white, rose angular to sub-angular coarse SAND and fine GRAVEL; 12-15" Weathered black GNEISSIC SCHIST and WOOD |
| 14 | | | | | |
| | 15-17' (SS) 3" Spoon | 8-10-13-7 | 8" | 5.5 | 0-3" Weathered black GNEISSIC SCHIST and WOOD, trace Quartz garnet; 3-5" Wet, brown and green/grey SILT, trace coarse Sand, trace fine Gravel, trace Wood; 5-8" Black, slightly weathered GNEISSIC SCHIST |
| 16 | | | | | |
| | | | | | |
| | 17-19' (SS) 3" Spoon | 4-5-8-13 | 11" | 0.9 | 0-6" Wet, weathered to slightly weathered GNEISSIC SCHIST, little brown/grey fine to coarse Sand, trace Gravel, trace Wood; 6-11" Wet, brown, fine to medium SAND, little angular to sub-angular Gravel, trace Silt |
| 18 | | | | | |
| | | | | | |
| | 19-21' (SS) 3" Spoon | 20-50/2" | 0" | --- | No Recovery |
| 20 | | | | | |
| | | | | | Core attempted from 19 ft bgs; casing became stuck and coring was abandoned. Ran roller bit to 25 ft bgs |
| 22 | | | | | |
| | | | | | |
| 24 | | | | | |
| | 25-30' (C) Coring | --- | Recovery: 60" RQD: 75% | --- | Cored from 25 to 30': 0-26" Light grey/tan SCHIST; 26-60" Grey SCHIST; a 45° fracture at 24" is lightly weathered and black stained |
| 26 | | | | | |
| | | | | | 25-26' - > 16 minutes |
| 28 | | | | | 26-27' - > 14 minutes |
| | | | | | 27-28' - > 13 minutes |
| | | | | | 28-29' - > 17 minutes |
| | | | | | 29-30' - > 20 minutes |
| | | | | | End of Boring at 30 ft bgs |

**SCHEMATIC**




**COMMENTS**

Boring was grouted from 30 to 25 ft bgs prior to well install

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON (2" and 3")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Cleared
5 to 19' =Split spoon sampling; 19-25' = Roller Bit
25 to 30' = Rock Cored
Boring complete to 30' bgs; Grouted to 25 ft bgs; install MW-23 to 25 ft bgs (2" well)

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-19 — Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chirs Stratton, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW 4' | DTW | | |
| Date | 3/20/2012 | | | |
| Time | 900 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Rain, high 60s
**Date/Time Start:** 5/15/12; 1015
**Date/Time Finish:** 5/17/12; 1415

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT | | |
| | | | | 0.0 | 8-24" Moist, gray fine to medium SAND, some Silt, little fine to medium Gravel | | |
| 2 | | | | | 24-25" CONCRETE | | |
| | | | | 0.0 | 25-48" Moist, gray fine to medium SAND, some Silt, little fine to medium Gravel | | Observed Water Level at 4 ft bgs |
| 4 | | | | | 48-60" Wet, gray fine to coarse SAND, some Silt, some medium to coarse Gravel | | |
| | 5-7' (SS) | 14-20-10-12 | 10" | 2.2 | Wet, Sub-angular to sub-round fine to medium GRAVEL, some fine to coarse brown Sand, little Brick, little weathered Gneissic Schist | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 24" | 6.4 | 0-8" Wet, GNEISS and SCHIST, some angular to sub-round fine to coarse Gravel, trace Wood, trace Brick; 8-16" Moist, brown/grey fine to medium SAND, some sub-angular to sub-round fine to medium Gravel, trace weathered Gneissic Schist, trace Brick; 16-20" GNEISSIC SCHIST; 20-24" Moist, brown/light red fine SAND, some sub-angular to round fine Gravel, trace Silt | | |
| 8 | | | | | | | |
| 10 | 10-12' (SS) Spoon | 1-1-2-1 | 6" | 3.8 | Wet, orange/tan fine to medium SAND, some weathered Gneissic Schist, trace Silt | | |
| 12 | 10-15' (SO) Sonic | --- | 40" | 3.8 | 0-20" Wet, orange/tan fine to medium SAND, some weathered Gneissic Schist, trace Silt; 20-40" Wet, grey fine to medium SAND, some weathered Gneissic Schist, little fine to medium sub-angular Gravel, trace Concrete, black staining, | | |
| 14 | | | | 15.7 | | | |
| | 15-17 (SS) Spoon | 1-3-4-5 | 10" | 19.3 | Wet, brown/grey fine to medium SAND, little sub-angular to sub-round fine Gravel, little weathered Gneissic Schist, trace Silt | | |
| 16 | | | | | | | |
| 18 | 15-20' (SO) Sonic | --- | 42" | 43.6 | 0-20" Wet, brown/grey fine to medium SAND, little sub-angular to sub-round fine Gravel, little weathered Gneissic Schist, little Concrete, trace Silt; 20-36" Brown/grey fine to medium SAND and weathered GNEISSIC SCHIST, little fine to medium sub-angular to sub-round Gravel, trace Silt, trace Brick; 36-42" Weathered GNEISSIC SCHIST | | |
| | | | | 13.8 | | | |
| 20 | 20-22' (SS) Spoon | 50/0" | 0 | --- | No Recovery | | |
| 22 | 20-25' (SO) Sonic | --- | 6" | --- | GNEISSIC SCHIST | | |
| 24 | | | | | | | |
| 26 | 25-30' (SO) Sonic | --- | 40" | 77.5 | 0-12" Wet, grey, fine to medium SAND and weathered GNEISSIC SCHIST, little Concrete, trace Brick | | |
| | | | | 68.1 | 12-34" Brown/red fine to medium SAND, little black Gneiss, little Brick, trace round medium Gravel | | |
| 28 | | | | 81.2 | 34-40" GNEISSIC SCHIST | | |
| 30 | 30-32' (SS) Spoon | 50/0" | 0 | --- | No Recovery | | |
| 32 | 33-35' (SO) Sonic | --- | 24" | --- | White/tan SCHIST | | Pushed Sonic sampler to 33 and casing to 35' |
| 34 | | | | | | | Roller bit to 36' due to loose rock |
| 36 | 36-40.7'(C) Coring | --- | Recovery: 56" RQD: 64% | --- | Cored from 36'-40.7': 0-56" Hard White SCHIST, no vein dip present; 45° fracture at 4", 40° fracture at 18", 30° fracture at 41" with rust staining; a fracture at 25" exhibiting rust and black staining | | |
| 38 | | | | | 36-37' - > 16 minutes 39-40' - > 19 minutes<br>37-38' - > 16 minutes 40-40.7' - > 35 minutes | | |
| 40 | | | | | 38-39' - > 10 minutes | | |
| | | | | | End of Boring at 40.7 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/20)
5 to 35'=Interval sampling with split spoon and sonic rig
36 to 40.7'=Rock Cored
Boring complete to 40.7' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-20 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliouri, Frank Quin
**Inspector:** Noah Garguilo
**Rig Type:** CME75 Drive and Wash

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Rain, high 60s
**Date/Time Start:** 5-15-12, 7:15
**Date/Time Finish:** 5-17-12, 11:00

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW ~2.5' | DTW | | |
| Date | 3/8/2012 | | | |
| Time | 1230 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-cleared | --- | --- | 0-20" ASPHALT<br>10-30" Wet, dark brown SAND, some Gravel, trace cobbles, trace Silt,trace Bricks<br>Encountered ground water at 30" bgs. Dig bar advanced to 60" in several locations | | Observed Water Level at 2.5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | N/A | | | | No soil information 5-10' bgs: Spun casing to 8' bgs. Casing sank down when attempting to collect 8-10' spoon. Advanced casing to 10' bgs. | | |
| 8 | | | | | | | |
| 10 | 10-12' (SS) Spoon | 3-3-3-3 | 3" | 1 | 0-3" Moist, black, fine SAND and fine GRAVEL, little Coal fragments, slight hydrocarbon odor | | |
| 12 | 12-14' (SS) Spoon | 1-WOH-1-WOH | 3" | 17.1 | 0-3" Moist, olive, fine to medium SAND, little fine Gravel and Coal | | |
| 14 | 14-16' (SS) Spoon | 1-1-1-1 | 4" | 0.1 | 0-4" Moist, olive, fine SAND, some Silt, little to some Gravel, Brick in drive shoe | | |
| 16 | 16-18' (SS) Spoon | Weight of Rod | 0 | --- | 16-18' No Recovery | | |
| 18 | 18-20' (SS) Spoon | 1-1-2-2 | 12" | 0.1 | 0-12" Moist, olive (with red/green banding), fine SAND, some Silt, some Gravel | | |
| 20 | 20-22' (SS) Spoon | 3-3-4-4 | 6" | 0.2 | 0-6" Olive (red/green banded), fine SAND, some Silt, little Gravel, trace weathered Gneissic Shist, trace Brick fragments | | |
| 22 | 22-24' (SS) Spoon | 7-4-50/4" | 6" | 0.2 | 0-6" Moist, olive, fine SAND, some Silt, little Gravel, trace Brick | | |
| 24 | 23.5-28.5' (C) Coring | | RQD: 55% | 60" | Cored from 23.5 to 28.5': Hard, fresh, white SCHIST, fine grained; abundant existing fractures to 30" (20-30° fractures, non-planar); rock quality increases below 30"; existing fractures at 33", 36", 40", and 57" (45° planar, 33" fracture is horizontal); NAPL in wash water 24-28' bgs<br>25.5-26.5' -> 10 minutes<br>26.5-27.5' -> 1 minutes<br>27.5-28.5' -> 5 minutes<br>28.5-29.5' -> 5 minutes<br>29.5-30.5' -> 1 minutes | | |
| 26 | | | | | | | |
| 28 | | | | | | | |
| 30 | 28.5-33.5' (C) Coring | | RQD: 95% | 60" | Cored from 28.5 to 33.5': 0-12": Hard, fresh, white SCHIST; 12-60": Hard, fresh, black, gneissic SCHIST, mechanical break at 12" at rock change, highly folded with vein dip ranging from +45° to -45°<br>28.5-29.5' -> 10 minutes<br>29.5-30.5' -> 4 minutes<br>30.5-31.5' -> 12 minutes<br>31.5-32.5' -> 6 minutes<br>32.5-33.5' -> 8 minutes | | |
| 32 | | | | | | | |
| | | | | | End of Boring at 33.5 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON (3")
WH = Weight of Hammer
C = CORED

0 to 5'=Hand-Clearance (3/8/12).
10 to 23.5'=Interval sampling with split spoon.
23.5' to 28.5' and 28.5' to 33.5' = Rock Cored.
Boring complete to 33.5' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-21 (Sheet 1 of 2)

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**
See Site Plan

**Weather:** Clear, low 60s
**Date/Time Start:** 4/24/12; 0845
**Date/Time Finish:** 4/24/12; 1330

GROUNDWATER OBSERVATIONS

| Water Level | DTW ~5 ft bgs | DTW | | |
|---|---|---|---|---|
| Date | 4/24/2012 | | | |
| Time | 900 | | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-cleared | --- | 0.0 | 0-8" ASPHALT | | |
| | | | | 0.0 | 8"-60" Moist, brown, fine to medium SAND, some Silt and medium to coarse Gravel | | |
| 2 | | | | | | | |
| 4 | | | | | | | Observed Water Level at 5 ft bgs |
| | 5-10' (SO) Sonic | --- | 48" | 36.8 | 0-20" Wet, brown, fine to coarse SAND and fine to coarse sub-angular to round GRAVEL, trace Wood, trace Metal, hydrocarbon odor | | |
| 6 | | | | | | | |
| | | | | 5.4 | 20-48" Moist, grey/orange fine to medium SAND, little fine to medium sub-angular to round Gravel, trace Metal, trace Gneiss, trace Silt, hydrocarbon odor | | |
| 8 | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 0" | --- | No Recovery; Dark Brown NAPL noted on casing | | |
| 30 | | | | | | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 36" | 38.0 | 0-12" Wet, dark grey, fine SAND, trace fine sub-round Gravel, trace Wood, trace Silt, NAPL blebs, hydrocarbon odor, sheen | | |
| 16 | | | | | | | |
| | | | | 382.0 | 12-30" Wet, dark brown fine to medium SAND, little Silt, little fine to coarse sub-angular to sub-round Gravel, trace Gneiss, hydrocarbon odor | | |
| 18 | | | | | | | |
| | | | | | 30-36" Weathered micaceous GNEISS, slight hydrocarbon odor | | |
| 20 | 20-25' (SO) Sonic | --- | 50" | 3569.0 | 0-18" Wet, soft, grey fine to coarse SAND, some fine sub-angular to sub-round Gravel, hydrocarbon odor, slight sheen; 18-36" Moist, weathered GNEISS and grey fine to coarse SAND, trace Metal wire, trace Wood; 36-48" Olive/grey fine to medium SAND, trace Silt, trace Schist; 48-50" SCHIST, NAPL coated/saturated | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 40" | 9999.0 | 0-30" Wet, dark grey/brown fine to medium SAND, trace Mica, trace hair, NAPL blebs to saturation, hydrocarbon odor, slight sheen; 30-40" Wet, dark grey/brown fine to medium SAND and BRICK, trace Mica, trace hair, trace medium to coarse round Gravel, NAPL blebs, hydrocarbon odor, slight sheen | | |
| 26 | | | | | | | |
| 28 | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 60" | 1127.0 | 0-50" Moist to dry, BRICK and MORTAR | | |
| | | | | | 50-60" Wet, BRICK and MORTAR | | |
| 32 | | | | | | | |
| 34 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/20/12).
5'-45'=Interval sampling Sonic
Rock Core not conducted in this location due to artesian conditions
Boring complete to 45' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-21 Sheet 2 of 2

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 4/24/2012 | | | |
| Time | 900 | | | |
| Meas. From | Sonic Sample | Top of Casing | | |

**Weather:** Clear, low 60s
**Date/Time Start:** 4/24/12; 0845
**Date/Time Finish:** 4/24/12; 1330

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 36 | 35-40' (SO) Sonic | --- | 60" | 1511.0 | CONCRETE | | |
| 38 | | | | | | | |
| 40 | 40-45' (SO) Sonic | --- | 18" | 108.0 | Weathered, white and grey SCHIST COBBLE, little Gneiss | | |
| 42 | | | | | | | |
| 44 | | | | | | | |
| | | | | | End of Boring at 45 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/20/12).
5'-45'=Interval sampling Sonic
Rock Core not conducted in this location due to artesian conditions
Boring complete to 45' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Jenkins
**Inspector:** Noah Garguilo
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-22 Sheet 1 of 1
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~2.5 ft bgs | DTW | | |
| Date | 3/15/2012 | | | |
| Time | | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, low 60s
**Date/Time Start:** 5/10/12; 9:45
**Date/Time Finish:** 5/10/12; 13:00

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | --- | --- | | 0-6" ASPHALT<br>6-36" Moist, brown fine to coarse SAND, some Gravel and Brick, trace to little Cobbles, trace Silt, bricks becoming more abundant with depth<br>Encountered ground water at 30" bgs. Dig bar advanced to 60" in several locations | | Observed Water Level at 2.5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | 5-10' (SO) Sonic | ---- | 12" | 14.8 | 0-12" Wet, soft, dark brown, fine SAND, some fine to coarse subangular Gravel, little to some weathered Gneissic Schist and Porcelain, trace Plastic | | |
| 8 | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 6" | 17.6 | 0-6" Weathered, black GNEISSIC SCHIST | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| 16 | 15-20' (SO) Sonic | --- | 36" | 105 | 0-24" Wet, black, fine SAND, little weathered Gneissic Schist, trace Slate, trace brick/mortar/glass, rare NAPL blebs<br>24-36" Wet, black, medium to coarse SAND and GRAVEL, some Slate and Brick/Mortar, rare NAPL blebs, slight hydrocarbon odor | | |
| 18 | | | | | | | |
| 20 | 20-25' (SO) Sonic | --- | 30" | 1880 | 0-30" NAPL saturated WOOD (oval slats with metal bands, metal has oval holes 1/4" apart, snugly fit with wood) | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| 26 | 25-30' (SO) Sonic | ---- | 48" | 249<br>642<br>684 | 0-18" CONCRETE<br>18-36" Wet, brown SAND and GRAVEL, some black Gneissic Schist<br>36-48" Brown/black SAND, some Gravel, trace Cobbles, trace Wood (with nail), NAPL staining slight sheens, staining heaviest in and near wood | | |
| 28 | | | | | | | |
| 30 | 30-33.5' (SO) Sonic | ---- | 32" | 2289<br>16.8 | 0-4" White, fresh to weathered SCHIST, thin NAPL coating, NAPL saturated Wood<br>4-26" White, hard, fresh SCHIST, NAPL stained, no free NAPL | | |
| 32 | | | | | 26-32" White, hard, fresh SCHIST, NAPL stained | | |
| | | | | | End of Boring at 33.5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/15)
5 to 33.5'=Sonic rig (5/10)
Rock Core not conducted in this location due to artesian conditions
Boring complete to 33.5' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-23 (Sheet 1 of 1)
**Location Description:** West 45th Street, Manhattan, NY

**Weather:** Clear, mid 70s
**Date/Time Start:** 5/17/12; 0905
**Date/Time Finish:** 5/17/12; 1400

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 5/17/2012 | | | |
| Time | 905 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 0 | | | | 0.0 | 0-8" ASPHALT | | |
| | | | | 0.0 | 8-60" Brown fine to coarse SAND and sub-angular to sub-round medium to coarse GRAVEL, some Cobble, trace Brick - Wood at 4.5' | | |
| 2 | Vac-Tron | Hand-Cleared | --- | 0.0 | | | |
| | | | | 0.0 | | | |
| 4 | | | | 0.0 | | | |
| | 5-7' (SS) | 12-6-8-14 | 4" | 1.7 | Wet, weathered GNEISSIC SCHIST, some sub-angular medium Gravel, trace Wood | | Observed Water Level at 5 ft bgs |
| 6 | | --- | 48" | 29.8 | 0-16" Wet, brown/grey medium to coarse SAND and fine to coarse sub-angular to round Gravel, trace Wood | | |
| | 5-10' (SO) Sonic | | | | | | |
| 8 | | | | 157.0 | 16-36" Moist, dark grey fine to medium SAND and weathered Gneissic Schist, trace round fine Gravel, trace Silt; 36-40" BRICK, slight hydrocarbon odor; 40-48" Moist, dark grey/black fine to medium SAND and GNEISS | | |
| | | | | | | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 6-6-8-9 | 6" | 80.4 | Wet, black GNEISS, trace Wood, slight hydrocarbon odor | | |
| | | --- | 6" | 110.0 | Wet, black GNEISS, little grey fine to medium SAND, trace Wood, slight hydrocarbon odor | | |
| 12 | 10-15' (SO) Sonic | | | | | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-17' (SS) Spoon | 6-3-3-3 | 8" | 130.0 | 0-4" Wet, black GNEISS, little grey fine to medium SAND, trace Wood, slight hydrocarbon odor | | |
| 16 | | | | | 4-6" CONCRETE; 6-8" Black, medium to coarse SAND and black GNEISS | | |
| | | --- | 14" | 2469.0 | 0-8" CONCRETE and black GNEISSIC SCHIST, some tan Schist medium Gravel, NAPL blebs, strong hydrocarbon odor; 8-14" Brown/black medium SAND and weathered GNEISS, some Concrete, trace Brick, NAPL saturation-blebs, moderate hydrocarbon odor | | |
| 18 | 15-20' (SO) Sonic | | | | | | |
| | | | | | | | |
| 20 | 20-22' (SS) Spoon | 50/0" | <1" | --- | White SCHIST in tip of drive shoe | | |
| | | --- | 72" | | White SCHIST, multiple horizontal fractures throughout; vertical ~20° fracture from 56-72" | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | 20-29' (SC) Sonic Casing | | | | | | |
| | | | | | | | |
| 26 | | | | | | | |
| | | | | | | | |
| 28 | | | | | | | |
| | | | | | End of Boring at 29 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/26)
5 to 29'= Sampling with sonic rig and split spoon
20 to 29'=Rock Cored utilizing Sonic casing
Boring complete to 29' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-24/MW-21 (Sheet 1 of 1)

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** CME-75 Truck Rig

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

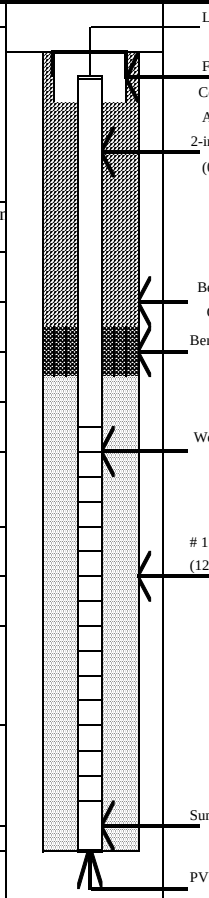
| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~3' | DTW 0.95 | | |
| Date | 3/7/2012 | 4/10/12 | | |
| Time | 1500 | 0800 | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, low 70s
**Date/Time Start:** 3/14/12 ; 0930
**Date/Time Finish:** 3/19/12 ; 1030

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0.0 | 0-8" ASPHALT |
| | | | | 0.0 | 8-36" Moist, dark brown, fine to coarse SAND, some angular to sub-round fine to medium Gravel |
| 2 | | | | 0.0 | |
| | | | | 0.0 | 36-51" Wet to moist, dark brown, fine to coarse SAND, some angular to sub-round fine to medium Gravel, little Cobble |
| 4 | | | | 0.0 | |
| | | | | 0.0 | 51-60" Wet, dark brown, fine to coarse SAND, some angular to sub-round fine to medium Gravel, little Cobble |
| | 5-7' (SS) 2" Spoon | 10-9-15-8 | 6" | 21.5 | 0-4" Wet, brown/gray, medium to coarse Sand and fine to coarse angular to sub-rour |
| 6 | | | | | Gravel; 4-6" WOOD |
| | 7-9' (SS) 2" Spoon | 6-8-6-3 | 2" | 5.4 | Wet, angular to subangular GRAVEL |
| 8 | | | | | |
| | 9-11' (SS) 2" Spoon | 3-1-5-1 | 2" | 11.6 | Wet, angular to subangular GRAVEL, trace brick |
| 10 | | | | | |
| | 11-13' (SS) 2" Spoon | 7-7-6-6 | 0" | - | No Recovery |
| 12 | | | | | |
| | 13-15' (SS) 2" Spoon | 4-4-1-1 | 0" | - | No Recovery |
| 14 | | | | | |
| | 15-17' (SS) 2" Spoon | 1-1-7-13 | 6" | 158.0 | 0-4" Wet, weathered GNEISSIC SCHIST, little tan, fine to medium Sand, NAPL blebs, strong hydrocarbon odor, staining; 4-6" Tan fine to medium SAND, little angular medium to coarse Gravel, trace Wood |
| 16 | | | | | |
| | 17-19' (SS) 2" Spoon | 12-4-1-1 | 2" | 2567.0 | Black, fine to medium SAND, some fine angular to sub-angular Gravel, NAPL blebs, strong hydrocarbon odor, staining |
| 18 | | | | | |
| | 19-21' (SS) 3" Spoon | 2-3-5-2 | 2" | 17.7 | SCHIST, COBBLE, and WOOD |
| 20 | | | | | |
| | 21-23' (SS) 3" Spoon | 5-2-1-2 | 12" | 3641.0 | 0-9" Wet, weathered black Gneissic SCHIST and fine to coarse GRAVEL, NAPL blebs, strong hydrocarbon odor |
| 22 | | | | | 9-12" Wet, black fine to medium SAND, some fine to medium sub-angular to sub-round Gravel, NAPL saturation, strong hydrocarbon odor, staining |
| | 23-25' (SS) 3" Spoon | 2-1-50/3 | 10" | 3590 | 0-6" Wet, black fine to medium SAND, some fine to medium sub-angular to sub-round Gravel, NAPL saturation, strong hydrocarbon odor, staining; 6-10" Wet, black, fine to medium SAND and fine to medium angular to sub-round GRAVEL, NAPL saturation, strong hydrocarbon odor, staining |
| 24 | | | | | |
| | | | | | Pound casing and roller bit to 26 ft bgs |
| 26 | 26-31' (C) Coring | - | Recovery: 30" RQD: 90% | | Cored from 26-31': 0-10" two segments of CONCRETE ; 10-12" one segment of SCHIST ; 12-24" one segment of black GNEISSIC SCHIST w/ Quartz, gray schist vein; 24-42" one segment of black GNEISSIC SCHIST w/ Quartz; 42-45" one segment of black GNEISSIC SCHIST with Quartz. |
| | | | | | 26-27' -> 2 minutes |
| 28 | | | | | 27-28' -> 2 minutes |
| | | | | | 28-29' -> 10 minutes |
| 30 | | | | | 29-30' -> 10 minutes |
| | 31-36' (C) Coring | - | Recovery: 30" RQD: 90% | | Cored from 31-36': 0-60" two segments of black GNEISS, bands of Gneissic Schist |
| 32 | | | | | 31-32' -> 27 minutes |
| | | | | | 32-33' -> 8 minutes |
| 34 | | | | | 33-34' -> 11 minutes |
| | | | | | 34-35' -> 9 minutes |
| | | | | | 35-36' -> 10 minutes |
| | | | | | End of Boring at 36 ft bgs |

**SCHEMATIC**




**COMMENTS**
Boring was grouted from 36 to 26 ft bgs prior to well install

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2", 3")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/6)
5 to 19'=Interval sampling with split spoon (2"), 19 to 25'=Interval sampling with split spoon (3")
26 to 31' bgs=Rock Cored (6 segments ); 31-36'=Rock Cored (2 segments)
Boring complete to 36' bgs; Grouted to surface; install MW-21 to 26 ft bgs (2" well)

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-25 — Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** Truck CME 75 (Drive and Wash)

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Clear, High in the low 50s F, very windy
**Date/Time Start:** 3/26/12 ; 900
**Date/Time Finish:** 3/30/12 ; 1300

GROUNDWATER OBSERVATIONS

| Water Level | DTW ~4.5' bgs | DTW | | |
|---|---|---|---|---|
| Date | 3/7/2012 | | | |
| Time | 1100 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-10" ASPHALT<br>10-16" Moist, brown fine to coarse SAND and GRAVEL, trace Silt, trace Cobbles, trace Brick<br>16-54" Moist, dark brown fine to coarse SAND, some fine to coarse Gravel, little Silt, trace Cobbles, trace black, micaceous, Schist fragments, trace concrete<br>Encountered ground water at 4.5' bgs. Dig bar advanced to 60" in several locations | | Observed Water Level at 4.5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | 5-7' (SS) Spoon | 1-4-6-3 | 13" | 16.0 | 0-6" Wet, fine to coarse SAND, some fine Gravel<br>6-13" Wet, brown, SAND and GRAVEL, some black Gneissic Schist, trace Brick | | |
| 8 | 7-9' (SS) Spoon | 2-3-3-1 | 12" | 25.8 | 0-12" Wet, brown/black SAND, some black Gneissic Schist, little Gravel and Brick, slight hydrocarbon odor | | |
| 10 | 9-11' (SS) Spoon | 3-5-5-3 | 0" | - | No Recovery | | |
| 12 | 11-13' (SS) Spoon | 2-2-3-4 | 8" | - | 0-8" BRICK and MORTAR and black GNEISSIC SCHIST, little weathered red Concrete | | |
| 14 | 13-15' (SS) Spoon | 2-6-33-50/3" | 13" | 104 | 0-7" Gray, red, and black, fine to coarse angular to sub-angular medium to coarse SAND, little fine Gravel; 7-10" Red, weathered CONCRETE; 10-13" Wet, gray fine SAND, some Silt, slight hydrocarbon odor | | |
| 16 | 15-17' (SS) Spoon | 7-8-13-19 | 9" | 80.1 | 0-6" Wet, medium to coarse SAND, little fine to coarse angular to sub-angular Gravel, trace black Gneissic Schist, trace Brick<br>6-9" Gray fine SAND, some fine Gravel, little Silt, trace Wood | | |
| 18 | 17-19' (SS) Spoon | 22-17-22-23 | 21" | 99.5 | 0-9" Wet, brown and red medium to coarse SAND, little fine Gravel, little Brick<br>9-21" Soft, highly weathered, black, micaceous, GNEISSIC SCHIST, slight hydrocarbon odor | | |
| 20 | 19-25' Roller bit | - | - | - | Roller bit advanced 19 to 25 ft bgs due to obstructions. Roller bit grinds then drops. Returns are black, Gneissic Shist. Possible weathered bedrock. Difficult to advance casing, switched to 3" casing with spin shoe to advance. | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| 26 | 25-30' (C) Coring | | Recovery: 58/60" RQD: 88% | | Cored from 25 to 30': 0-58" Hard, fresh, black, GNEISSIC SCHIST, abundant red quartz. White quartz veins throughout sample with vein dip at 45°<br>25-26' -> 30 minutes<br>26-27' -> 21 minutes<br>27-28' -> 40 minutes<br>28-29' -> 60 minutes<br>29-30' -> 19 minutes | | |
| 28 | | | | | | | |
| 32 | 30-35' (C) Coring | | Recovery: 57/60" RQD: 95% | | Cored from 30 to 35': Hard, fresh, black , GNEISSIC SCHIST, rose and white quartz veins<br>30-31' -> 20 minutes<br>31-32' -> 30 minutes<br>32-33' -> 31 minutes<br>33-34' -> 24 minutes<br>34-35' -> 50 minutes | | |
| 34 | | | | | | | |
| | | | | | End of Boring at 35 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON (3")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/7)
5 to 19'=Interval sampling with split spoon (3")
25 to 30', 30 to 35' =Rock Cored
Boring complete to 35' bgs; Grouted to surface (3/30)

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-26 Sheet 1 of 1
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~4 ft bgs | DTW | | |
| Date | 3/22/2012 | | | |
| Time | 930 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Cloudy, mid 50s
**Date/Time Start:** 4/11/12; 0900
**Date/Time Finish:** 4/12/12; 1430

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-12" ASPHALT | | Observed Water Level at 4 ft bgs |
| | | | | 4.0 | 12-24" Moist, brown, fine to medium SAND, some medium to coarse Gravel, little Brick | | |
| 2 | | | | 2.7 | 24-36" Moist, brown, fine to medium SAND, some medium to coarse Gravel and Silt, little Brick, little Cobble | | |
| | | | | | | | |
| | | | | 1.9 | 36-48" Moist, brown, fine to medium SAND, some medium to coarse Gravel and Silt, little Brick, little Cobble, slight hydrocarbon odor | | |
| | | | | | | | |
| 4 | | | | 1.5 | 48-60" Brown/green Sand, some Clay and Brick, little Cobble | | |
| | | | | | Spun casing to 6 ft bgs | | |
| 6 | 6-8' (SS)Spoon | 45-35-25-36 | 10" | 1.9 | 0-3" Wet, brown SAND and GRAVEL; 3-10" Wet, white highly weathered SCHIST, moderate hydrocarbon odor | | |
| | | | | | | | |
| 8 | 8-10' (SS)Spoon | 4-11-12-3 | 5" | 172.0 | 0-2" Wet, white slightly weathered SCHIST, some brown fine to coarse SAND, NAPL saturated, moderate hydrocarbon odor; 2-5" Wet, black, GNEISSIC SCHIST, some grey Clay, NAPL blebs | | |
| | | | | | | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 1-2-1-1 | 0 | --- | No Recovery | | |
| | | | | | | | |
| 12 | 12-14' (SS) Spoon | 50/2" | 2" | --- | Hard, white SCHIST (pulverized) | | Roller bit refusal at 13 ft bgs and sent core barrel from 13 to 18 ft bgs. Core was not through bedrock. When casing was pulled, artesian conditions were present with NAPL. No further coring was |
| | 13-18' (C)Coring | --- | Recovery: 28" RQD: NA | | 0-28" Fresh, hard, black Gneissic SCHIST, quartz vein at 5"; mechanical fractures at 5", 7", 17", and 21"; 16-18' BRICK and MORTAR and NAPL saturated WOOD | | |
| 14 | | | | | 13-14' - > 36 minutes 15.75-16.75' - > 25 minutes | | |
| | | | | | 14-15' - > 33 minutes 16.75-17.75 - > 92 minutes | | |
| 16 | | | | | 15-15.75' - > 25 minutes | | |
| | | | | | End of Boring at 18 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (3")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/22)
5 to 13'=Interval sampling with split spoon (3")
13'-18'= Cored through boulder
Boring complete to 18' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Chris Migliori
**Inspector:** Noah Garguilo, Zohar Lavy
**Rig Type:** Sonic, CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 1 of 2 **PDI-27**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 4/17/2012 | | | |
| Time | 1150 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, high 70s
**Date/Time Start:** 4/17/12; 1150
**Date/Time Finish:** 4/23/12;1430

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 2.7 | 0-12" ASPHALT | | Observed Water Level at 5 ft bgs |
| | | | | 3.9 | 12-24" Fine to medium SAND, some medium to coarse Gravel and Brick | | |
| 2 | | | | 5.0 | 24-36" Moist, fine to medium SAND, some Silt and coarse Cobble | | |
| | | | | 22.0 | 36-54" Moist, fine to medium SAND, some Silt and Clay, little Cobble | | |
| 4 | | | | 22.0 | 54-60"Moist, fine to medium SAND, some Clay, NAPL blebs, hydrocarbon odor, sheen | | |
| | 5-7' (SS) Spoon | 6-8-5-7 | 10" | 14.3 | Wet, dark brown fine to coarse SAND, some angular to sub-round fine to medium Gravel, little weathered Gneissic Schist, trace Brick | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 36" | 24.9 | Wet, dark brown/grey fine to coarse SAND, some angular to sub-round fine to medium Gravel, little weathered Gneissic Schist, trace Brick | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 5-4-5-3 | 14" | 37.1 | Wet, dark brown/grey fine to coarse SAND, some angular to sub-round fine to medium Gravel, little weathered Gneissic Schist, trace Silt, trace Brick, NAPL blebs, hydrocarbon odor, staining | | |
| | | | | | | | |
| 12 | 10-15' (SO) Sonic | --- | 60" | 65.8 | 0-12" Wet, dark brown/grey fine to coarse SAND, some angular to sub-round fine to medium Gravel, little weathered Gneissic Schist, little Silt, trace Brick, NAPL blebs, hydrocarbon odor, staining; 12-60" Wet, dark brown/grey fine to coarse SAND, some angular to sub-round fine to medium Gravel, little weathered Gneissic Schist, little Silt, trace Brick, trace Wood, NAPL blebs, hydrocarbon odor, staining | | |
| | | | | | | | |
| | | | | 73.8 | | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-17' (SS) Spoon | 2-1-1-3 | 24" | 27.8 | Wet, brown/grey fine to medium SAND, little angular to sub-angular fine to coarse Gravel, little Silt, slight hydrocarbon odor, sheen | | |
| 16 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 0" | --- | No Recovery | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | 20-22' (SS) Spoon | 1/12"-1/12" | 5" | 25.6 | 0-3" Wet, fine to medium sub-angular to sub-round GRAVEL; 3-5" Wet, brown fine to medium SAND and fine sub-angular GRAVEL, trace Silt | | |
| | | | | | | | |
| 22 | 20-25' (SO) Sonic | --- | 20" | 31.8 | Wet, brown fine to medium SAND and fine sub-angular GRAVEL, trace Silt | | |
| | | | | | | | |
| 24 | | | | | | | |
| | | | | | Added 7" casing and it slipped to 27 ft bgs. Added an additional section of 7" casing to 30 ft bgs | | |
| 26 | | | | | | | |
| | | | | | | | |
| 28 | | | | | | | |
| | | | | | | | |
| 30 | 30-32' (SS) Spoon | 6-12-10-14 | 14" | 156 | 0-12" Wet, brown fine to coarse SAND, little Brick, little fine to medium sub-angular Gravel, trace Wood, trace Silt, hydrocarbon odor; 12-14" BRICK | | |
| | | | | | | | |
| 32 | 30-35' (SO) | --- | 32" | 731 | 0-12" Wet, brown fine to coarse SAND, little Brick, little fine to medium sub-angular Gravel, trace Wood, trace Silt, hydrocarbon odor; 12-32" Wet, brown/black fine to coarse SAND, some fine to coarse sub-angular to sub-round Gravel, little Brick, trace Silt, striated zones of NAPL blebs-saturation, hydrocarbon odor, staining | | |
| | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-35.5' (SS) Spoon | 12-50/1" | 6" | 72.1 | 0-2" Wet, brown/grey fine SAND, trace Brick, hydrocarbon odor, sheen; 2-6" BRICK | | |
| | 35-37' (SO) Sonic | --- | 24" | 291 | 0-12" Wet, brown/grey fine to coarse SAND, little sub-angular to sub-round fine to medium Gravel, hydrocarbon odor, sheen; 12-20" BRICK; 20-24" White/grey | | |
| 36 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/22)
5 to 37'=Interval sampling with split spoon and sonic
37'-42'= Rock Cored
Boring complete to 42' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Chris Migliori
**Inspector:** Noah Garguilo, Zohar Lavy
**Rig Type:** Sonic, CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-27 Sheet 2 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 4/17/2012 | | | |
| Time | 1150 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, high 70s
**Date/Time Start:** 4/17/12; 1150
**Date/Time Finish:** 4/23/12;1430

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 37 | 37-42' (C) Coring | --- | Recovery: 58" RQD: 0% | | Cored from 37 to 42': 0-58": Hard, white SCHIST; vertical fracturing throughout sample, red and green weathering along vertical fractures, little horizontal fractures | | |
| | | | | | 37-38' - > 113 minutes 40-41' - > 53 minutes | | |
| 39 | | | | | 38-39' - > 150 minutes 41-42' - > 112 minutes | | |
| | | | | | 39-40' - > 47 minutes | | |
| 41 | | | | | | | |
| | | | | | End of boring at 42 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/22)
5 to 37'=Interval sampling with split spoon and sonic
37'-42'= Rock Cored
Boring complete to 42' bgs ; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-28 (Sheet 1 of 1)

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/19/2012 | | | |
| Time | 1250 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, Up to 70F, Wind: 5-10 mph S
**Date/Time Start:** 4/19/12; 1250
**Date/Time Finish:** 4/24/12; 1500

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT | | |
| | | | | 0.0 | 8-24" Brown fine to coarse SAND, some Silt, some medium to coarse Gravel, and Brick | | |
| 2 | | | | 0.0 | 24-60" COBBLE and BRICK, trace Metal (at 2.5') | | |
| | | | | | | | |
| 4 | | | | | | | Observed Water Level at 5 ft bgs |
| | 5-7' (SS) Spoon | 3-6-52/5" | 10" | 18.8 | Wet, brown/black fine to coarse SAND and black micaceous GNEISS | | |
| 6 | | | | | | | |
| | 5-7' (SO) Sonic | - | 24" | 18.8 | Wet, brown/black fine to coarse SAND and black micaceous GNEISS | | |
| 8 | | | | | Sonic sampler refusal at 7 ft bgs, 5" casing down to 10.0' bgs. Rock encountered from 8 to 10' bgs. | | |
| | 9-14' (C) Coring | --- | Recovery: 60" RQD: 100% | --- | Cored from 9 to 14': 0-60": Hard, white SHIST; weathered horizontal fracture with red/rust staining at 16" | | |
| 10 | | | | | | | |
| | | | | | | | |
| 12 | | | | | 9-10' - > 17 minutes 12-13' - > 21 minutes | | |
| | | | | | 10-11' - > 13 mintues 13-14' - > 20 minutes | | |
| | | | | | 11-12' - > 15 minutes | | |
| 14 | 14-19' (C) Coring | --- | Recovery: 47" RQD: 62% | --- | Cored from 14 to 19': 0-47" Hard, fresh white SCHIST; horizontal fractures at 5", 7" and 25"; abundant mechanical breaks; no vein dip apparent. | | |
| | | | | | | | |
| 16 | | | | | 14-15' - > 20 minutes 17-18' - > 17 minutes | | |
| | | | | | 15-16' - > 12 minutes 18-19' - > 15 minutes | | |
| | | | | | 16-17' - > 25 minutes | | |
| | | | | | End of boring at 19 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/21)
5 to 9'=Interval sampling with and sonic rig
9 to 19'=Rock Cored
Boring complete to 19' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-29 Sheet 1 of 2

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers, Chris Migliori
**Inspector:** Noah Garguilo, Zohar Lavy
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW 2.5 ft bgs | DTW | | |
| Date | 6/5/2012 | | | |
| Time | 1130 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Clear, 60-70s
**Date/Time Start:** 6-6-12, 1200
**Date/Time Finish:** 7-5-12, 1500

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-10" ASPHALT | | |
| | | | | 0.0 | 10-60" Moist , brown fine to coarse SAND and GRAVEL, some Brick and Gneissic SCHIST Cobble | | |
| 2 | | | | | | | |
| | | | | | Encountered ground water at 30" bgs. Dig bar advanced to 60" in several locations | | Observed Water Level at 2.5 ft bgs |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 36" | 27.0 | 0-24" Moist, brown, GRAVEL, some Sand, Brick, and Debris | | |
| 6 | | | | | | | |
| | | | | 58.1 | 24-36" Black/brown, fine to coarse SAND, some weathered Gneissic SCHIST, moderate hydrocarbon odor | | |
| 8 | | | | | | | |
| | | | | | | | |
| 10 | 10-13' (SO) Sonic | --- | 24" | 151 | 0-24" Black, weathered, GNEISSIC SCHIST, moderate hydrocarbon odor | | |
| | | | | | | | |
| 12 | | | | | | | |
| | 13-15' (SO) Sonic | --- | 12" | --- | CONCRETE | | |
| 14 | | | | | | | |
| | 15-16' (SO) Sonic | --- | 6" | 0.2 | 0-6" Moist, brown, SAND and GRAVEL | | |
| 16 | 16-20' (SO) Sonic | --- | 6" | --- | CONCRETE | | |
| | | | | | | | |
| 18 | | | | | | | |
| | | | | | | | |
| 20 | 20-24' (SO) Sonic | | 24" | 0.0 | CONCRETE | | |
| | | | | | | | |
| 22 | | | | | | | |
| | | | | | | | |
| 24 | 24-27' (SO) Sonic | | 20" | | 0-8" Black, GNEISSIC SCHIST | | |
| | | | | 1019 | 8-12" Grey, fine SAND, some Gravel, little Silt, moderate hydrocarbon odor | | |
| 26 | | | | | 12-20" Black GNEISSIC SCHIST | | |
| | 27-29' (SO) Sonic | | 0 | --- | No recovery. NAPL in wash water at 27' | | |
| 28 | | | | | | | |
| | 29-31' (SO) Sonic | | 24" | 1020 | Moist, brown, SAND and SILT, little Gravel, little Gneissic Schist Cobbles, | | |
| 30 | | | | | moderate hydrocarbon odor, NAPL blebs | | |
| | 31-35' (SO) Sonic | | 36" | 0.0 | Moist, black, weathered GNEISSIC SCHIST | | |
| 32 | | | | | | | |
| | | | | | | | |
| 34 | | | | | | | |
| | 35-39' (SO) Sonic | | 48" | 0.0 | Black, hard, fresh, GNEISSIC SCHIST, vertically folded (+80° to -80°), some white SCHIST | | |
| 36 | | | | | | | |
| | | | | | | | |
| 38 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/5)
5 to 40'=Interval sampling with and sonic rig
38 to 44'=Rock Cored.
Boring complete to 44' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Jeremy Meyers, Chris Migliori
**Inspector:** Noah Garguilo, Zohar Lavy
**Rig Type:** Sonic, CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 2 of 2 **PDI-29**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW 2.5 ft bgs | DTW | | |
| Date | 6/5/2012 | | | |
| Time | 1130 | | | |
| Meas. From | Hand Clearanc | Top of Casing | | |

**Weather:** Clear, 60-70s
**Date/Time Start:** 6-6-12, 1200
**Date/Time Finish:** 7-5-12, 1500

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 38 | 38-44' (C) Coring | --- | Recovery: 38" RQD: 41% | --- | Cored from 38 to 44': 0-24" Hard, white SCHIST; weathered horizontal fracture at 4"; 45° fracture at 8"; 24-38" Black, GNEISSIC SCHIST, vertical banding and dips, weathered horizontal fractures at 27" and 35". | | Coring began at 38 ft bgs through weathered rock which was pulled up by the sonic. |
| | | | | | 38-39' - > 20 minutes 41-42' - > 17 minutes<br>39-40' - > 20 minutes 42-43' - > 12 minutes<br>40-41' - > 16 minutes 43-44' - > 13 minutes | | |
| | | | | | End of Boring at 44 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/5)
5 to 39'=Interval sampling with and sonic rig
38 to 44'=Rock Cored.
Boring complete to 44' bgs; Grouted to surface

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** Chris Migliori, Frank Quinn
**Inspector:** Noah Garguilo
**Rig Type:** Truck CME 75 (Drive and Wash)

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 1 of 1 **PDI-30**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW 39" bgs | DTW | | |
| Date | 3/16/2012 | | | |
| Time | 900 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, 40s to 50s
**Date/Time Start:** 4/9/12; 900
**Date/Time Finish:** 4/19/12; 1024

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-39" ASPHALT ; 10-20" Dry, very dense, brown fine to coarse SAND, some Gravel, trace Cobbles, trace Silt; Solid iron bar in the hole at 16" | | Observed Water Level at 3.25 ft bgs |
| 2 | | | | | Encountered ground water at 39" bgs. Dig bar advanced to 60" in several locations. | | |
| 4 | | | | 0.0 | | | |
| 6 | 5-7' (SS) 3" Spoon | 11-10-12-9 | 10" | 13.4 | 0-10" Wet, highly weathered, black, GNEISSIC SCHIST, some brown fine to medium Sand, white cement-like material in drive shoe | | |
| 8 | 7-9' (SS) 3" Spoon | 8-14-8-8 | 12" | 10.4 | 0-8" Wet, black, medium to coarse SAND and fine GRAVEL, little black Gneissic SCHIST<br>8-10" White, fresh, hard CONCRETE<br>10-12" White, highly weathered CONCRETE, trace Brick and Gneissic SCHIST | | |
| | Not Sampled | | | | 9 to 10' not sampled, see notes | | |
| 10 | 10-12' (SS) 2" Spoon | 11-7-8-8 | 8" | 8.4 | 0-6" Wet, black fine to medium SAND and black weathered Gneissic SCHIST<br>6-8" White, hard CONCRETE, black NAPL saturation, slight hydrocarbon odor | | |
| 12 | 12-14' (SS) 2" Spoon | 3-5-5-4 | 6" | 22.5 | 0-3" WOOD<br>3-6" Wet, light brown, fine to coarse SAND | | |
| 14 | 14-16' (SS) 2" Spoon | 17-5-6-7 | 12" | 5.9 | 0-12" Wet, weathered, black, GNEISSIC SCHIST, some Brick | | |
| 16 | 16-18' (SS) 2" Spoon | 14-11-8-9 | 8" | 4.0 | 0-8" Wet, weathered, black, GNEISSIC SCHIST, some Brick | | |
| 18 | 18-20' (SS) 2" Spoon | 8-10-17-15 | 18" | 8 | 0-9" Wet, weathered SCHIST, some Brick<br>9-18" Wood, some black GNEISSIC SCHIST, NAPL coating, NAPL saturation-blebs | | |
| 20 | 20-22' (SS) 2" Spoon | 3-5-3-7 | 0" | | No Recovery | | |
| 22 | 22-24' (SS) 2" Spoon | 6-4-10-16 | 6" | | 0-6" Hard, fresh, white, QUARTZ | | |
| 24 | 24-26' (SS) 2" Spoon | 15-45-50/1" | 2" | 13.8 | 0-2" Wet, SCHIST, trace brick | | |
| 26 | 25-27' (SO) Sonic | - | 24" | 13.8 | 0-12" Wet, SCHIST, some fine to coarse Gravel, trace brick, trace Wood; 12-24" Gray, fine to coarse SAND and weathered SCHIST, some fine to coarse angular to subround Gravel, trace Silt | | |
| 28 | 25-30' (SO) Sonic, 5" Casing | - | | | White-gray SCHIST | | |
| 30 | 31-35'-10" (C) Coring | - | Recovery: 32" RQD: 10/32" | - | Cored from 31 to 35'-10": 0-58" White, hard, SCHIST, existing fractures horizontally at 6", 11", 16", and 36". Open vertical fractures at 2 to 16" and 28 to 36". Closed vertical fractures 26 to 58". Mechanical fractures (drilling breaks) at 24" and 27". Existing fractures contain black weathering, possibly very weathered NAPL staining or possible weathering of base material. Discoloration extends ~0.25" into material. No odor to 36", then slight below 36". Open vertical fracture closes at 36", no black staining below 36". Rock has light rust weathering in areas throughout. NAPL present on core barrel exterior.<br>31-32' -> 20 minutes<br>32-33' -> 47 minutes<br>33-34' -> 74 minutes<br>34-35' ->119 minutes | | |
| 36 | | | | | End of Boring at 35.8 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (3", 2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/8) ;
5 to 9'=Interval sampling with (3") split spoon, 10 to 26' with (2") split spoon, 25 to 30' with sonic rig.
9 to 10' interval not sampled due to switch from 4" case to 3" case, needed to seat 3" case 1 foot to maintain seal.
31 to 35'-10" =Rock Cored ; Boring completed to 35.8 ft bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-31 — Sheet 1 of 1

**Contractor** Advanced Drilling Technology
**Driller:** Chris Migliori, Chris Stratton
**Inspector:** Zohar Lavy
**Rig Type:** CME-75(Track), Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Weather:** Clear, 30s - 50s
**Date/Time Start:** 3/27/1 ; 0935
**Date/Time Finish:** 3/27/12; 1235

**Location Plan**
See Site Plan

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 3/27/2012 | | | |
| Time | 0935 | | | |
| Meas. From | Sonic Sample | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" Wire mesh reinforced CONCRETE<br>8-24" Moist, dark brown, fine to coarse SAND, some Gravel, trace Silt, trace Cobble<br>17-23" Moist, dark brown, fine to coarse SAND, some Gravel, trace Silt, trace Cobble; light brown SILT visible in the west side wall<br>24-60" Moist, dark brown, fine to coarse SAND, some Gravel, trace Silt, trace boulder | | Observed Water Level at 5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic, | - | 60" | 6.5 | 0-30" Wet, brown fine to coarse SAND, some Cobble; 30-60" Wet, gray/brown fine SAND and weathered BRICK, some Silt, gneissic schist, little medium to coarse angular-subangular gravel | | |
| 6 | | | | | | | |
| 8 | | - | | | | | |
| 10 | 10-12' (SS) Spoon | 50/1" | 1" | --- | Black GNEISSIC SCHIST | | |
| | 10-15' (SO) Sonic | - | 18" | 14.7 | Moist, highly weathered black GNEISSIC SCHIST and fine to coarse SAND; Drove casing to 15 ft bgs. NAPL washing into mud tub during casing advancement | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| | 15-15.5' (SS) Spoon | 50/6" | 6" | 25.6 | Fluff (gneiss, weathered rock, slight hydrocarbon) odor | | |
| 16 | 15-20' (C) Coring | - | Recovery: 56" RQD: 77% | --- | Cored from 15-20': 0-6" Coarse GNEISSIC SCHIST GRAVEL; 6-56" Hard, black GNEISSIC SCHIST, abundant vein dip and folding throughout, horizontal fractures at 9", 17", 24", 36"-40"; 45° fracture at 44" and 54"<br>15-16' -> 10 Minutes<br>16-17' -> 20 Minutes<br>17-18' -> 15 Minutes<br>18-19' -> 10 Minutes<br>19-20' -> 10 Minutes | | |
| 18 | | | | | | | |
| 20 | | | | | End of Boring at 20 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/9)
5 to 15.5'=Interval sampling with split spoon and sonic rig
15 to 20'=Rock Cored
Boring complete to 20' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PDI-32 Sheet 1 of 1
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 3/28/2012 | | | |
| Time | 930 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Partly Cloudy, Up to high 60's
**Date/Time Start:** 3/28/12 ; 0930
**Date/Time Finish:** 3/28/12 ; 1320

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | 0 | 0-8" CONCRETE | | Observed Water Level at 5 ft bgs |
| | | | | 0.0 | 8"-3' Moist, brown fine to coarse SAND, some Cobble and Gravel, little Concrete debris | | |
| 2 | | | | 0.0 | 3-5' Moist, brown fine to coarse SAND, some Cobble, little Concrete debris, trace Wood | | |
| | | | | | | | |
| 4 | | | | | | | |
| | 5-7' (SS) Spoon | 3-5-7-9 | 14" | 1.8 | Wet, brown, fine to medium SAND, little fine to medium angular-sub-angular Gravel | | |
| 6 | | | | | | | |
| | 5-10' (SO) Sonic | - | 50" | 1.9 | 0-20" Wet, brown, fine to medium SAND, little fine to medium angular-sub-angular Gravel | | |
| 8 | | | | | 20-40" Wet, dark brown/orange, medium SAND, little angular-sub-angular medium to coarse gravel, trace Silt | | |
| | | | | | | | |
| | | | | | 40-50" Wet, brown/red fine to coarse SAND, little fine to coarse subangular-round gravel, trace Silt | | |
| | | | | | | | |
| 10 | 10-12' (SS) Spoon | 7-8-9-9 | 12" | 3.5 | 0-10" Wet, brown, medium to coarse SAND, little medium to coarse sub-angular-round Gravel, trace Silt | | |
| | | | | | | | |
| | | | | | 10-12" Wet, dark brown, medium to coarse SAND, little medium to coarse sub-angular-round Gravel, trace Silt | | |
| | | | | | | | |
| 12 | 10-15' (SO) Sonic | - | 48" | 4.6 | 0-20" Wet, brown/red medium to coarse SAND, little sub-angular-round fine to coarse Gravel | | |
| | | | | | 20-48" Dark brown/black, medium to coarse SAND, trace round fine to coarse Gravel, trace black Gneissic Schist | | |
| 14 | | | | | | | |
| | 15-15.25' (SS) Spoon | 50/3" | 3" | 8.2 | 0-3" Black GNEISSIC SCHIST | | |
| 16 | 15-20' (C) Coring | - | Recovery: 60" RQD: 86% | --- | Cored from 15 to 20': 0-36" Black GNEISS; 36-60" Black GNEISSIC SCHIST; abundant vein dip and folding throughout; 45° fractures at 1", 8", 18", 24", 34", 42", 52", and 58" | | |
| | | | | | | | |
| 18 | | | | | 15-16' -> 8 Minutes | | |
| | | | | | 16-17' -> 11 Minutes | | |
| | | | | | 17-18' -> 9 Minutes | | |
| | | | | | 18-19' -> 7 Minutes | | |
| | | | | | 19-20' -> 8 Minutes | | |
| 20 | | | | | End of Boring at 20 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5' = Hand-Clearance (3/9)
5 to 15' = Interval sampling with split spoon and sonic rig
15 to 20'=Rock Cored
Boring complete to 20' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-33 — Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Mike Brody
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Cloudy, up to 70F
**Date/Time Start:** 3/21/12 ; 1335
**Date/Time Finish:** 3/26/12 ; 1100

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~4 ft bgs | DTW | | |
| Date | 3/9/2012 | | | |
| Time | 1335 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | --- | 0-8" CONCRETE; 8"-48" Moist, brown fine to coarse SAND, some Gravel, Cobble, and Concrete debris, trace Brick, trace Wood; 48-60" Wet, brown fine to coarse SAND, some sub-angular to sub-round Gravel, trace Silt | | |
| 2 | | | | | | | |
| 4 | | | | | | | Observed Water Level at 4 ft bgs |
| | 5-7' (SS) Spoon | 10-12-14-27 | 14" | 46.0 | 0-6" Wet, brown fine to coarse SAND, some angular to subangular medium to coarse Gravel; 6-10" BRICK | | |
| 6 | | | | | 10-14" Highly weathered black GNEISSIC SCHIST | | |
| | 5-10' (SO) Sonic | All Fluff | 30" | 4.5 | 0-20" Wet, brown-gray fine to coarse SAND, some angular medium Gravel | | |
| 8 | | | | | 20-25" BRICK | | |
| | | | | | 25-30" Wet, highly weathered black GNEISSIC SCHIST, slight hydrocarbon odor | | |
| 10 | 10-12' (SS) Spoon | 12-6-6-6 | 10" | 642 | 0-8" Wet, highly weathered black GNEISSIC SCHIST, NAPL saturation, very fluid, staining, strong hydrocarbon odor | | |
| | | | | | 8-10" Wet, gray fine Sand and SILT, NAPL saturation, strong hydrocarbon odor, staining | | |
| 12 | 10 - 15' (SO) Sonic | - | 0" | | No Recovery | | |
| | | | | | | | |
| 14 | | | | | | | |
| | 15-17' (SS) Spoon | 5-6-12-50/2" | 8" | 571.0 | 0-8" Wet, brown/gray fine to coarse SAND and highly weathered black GNEISSIC SCHIST, trace Wood, NAPL blebs, sheens, strong hydrocarbon odor | | |
| 16 | | | | | | | |
| | 15-20' (SO) Sonic | - | 24" | 254.0 | 0-12" Wet, brown/gray fine to coarse SAND and highly weathered black GNEISSIC SCHIST, trace Wood, NAPL blebs, sheens, strong hydrocarbon odor; 12-20" | | |
| 18 | | | | | 20-24" Wet, gray fine to medium SAND, little Silt, little fine to medium sub-angular to angular Gravel, trace Cobble, NAPL blebs, staining, strong hydrocarbon odor | | |
| 20 | 20-22' (SS) Spoon | 7-7-9-10 | 8" | 415 | 0-7" Wet, dark brown medium to coarse SAND, some weathered black Gneissic Schist | | |
| | | | | | 7-8" Gray SCHIST | | |
| 22 | 20-25' (SO) Sonic | - | 8" | 78 | Wet, black weathered GNEISSIC SCHIST, some Concrete, trace Brick, strong hydrocarbon odor, sheen | | |
| | | | | | | | |
| 24 | | | | | | | |
| | 25-27' (SS) Spoon | 50/5" | 4" | 14.7 | Wet, black GNEISSIC SCHIST and gray SCHIST | | |
| 26 | | | | | | | |
| | 25-30' (SO) Sonic | - | 24" | | 0-12" Wet, black GNEISSIC SCHIST and gray SCHIST | | |
| 28 | | | | | 12-24" Degraded mix of CONCRETE, some black weathered Gneissic Schist, little Cobble, trace Wood, trace Brick | | |
| | | | | | | | |
| 30 | 30-35' (C) Coring | - | Recovery: 60" RQD: ~75% | | Casing set to 30'; Cored from 30 to 35': 0-18" Light tan SCHIST with dark gray band; 18-24" SCHIST abundant mechanical breaks; 24-26" GNEISS; 26-60" Light gray/tan SCHIST, some rose quartz garnets, trace gneiss; horizontal fractures at 12", 19", 21", 41", 44", and 55"; 30° fracture at 48" | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | 30-31.5' - >15 minutes | | |
| 32 | | | | | 31.5-33' - > 43 minutes | | |
| | | | | | 33-34' - > 40 minutes | | |
| 34 | | | | | 34-35' - > 42 minutes | | |
| | | | | | End of Boring at 35 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (3/9)
5 to 30'=Interval sampling with split spoon and sonic rig
30 to 35'=Rock Coring (15 segments)
Boring complete to 35' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PDI-34 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Stratton, Chris Migliori
**Inspector:** Zohar Lavy
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/13/2012 | | | |
| Time | 945 | | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Cloudy, up to 70F
**Date/Time Start:** 4/13/12 ; 0945
**Date/Time Finish:** 4/17/12 ; 0959

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" CONCRETE; 8"-48" Moist, brown fine to coarse SAND, some Gravel, Cobble, and Concrete debris, trace Brick, 48-60" Moist, brown fine to coarse SAND, some sub-angular to sub-round Gravel, little Cobble | | |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-7' (SS) Spoon | 6-12-50/3" | 8" | 6.7 | 0-6" Wet, brown medium to coarse SAND, little angular medium Gravel<br>6-8" Wet, brown coarse SAND and light tan weathered SCHIST | | Observed Water Level at 5 ft bgs |
| 6 | 5-7' (SO) Sonic | - | 24" | 7.2 | 0-12" Wet, brown medium to coarse SAND, little medium to coarse angular Gravel, trace Silt, trace Brick; 12-20" Brown fine to coarse SAND, little angular to sub-angular fine to coarse Gravel, trace Silt, trace Schist; 20-24" Weathered SCHIST | | |
| 8 | 7-11' (SC) Sonic Casing | | | | Sonic sampler refusal at 7 ft bgs. Pushed casing from 7 to 11 ft bgs through highly resistant rock<br>7-11' Grey, fresh, hard SCHIST | | |
| 10 | | | | | | | |
| 12 | 11-16' (C) Coring | | Recovery: 56" RQD: 36" | --- | Cored from 11-16': White, hard SCHIST. Fresh to 13', then slightly weathered with numerous existing fractures to 16'. Some areas of white to rose quartz. Consists of pieces generally 2-4" in length. Some 0.5-1" pieces. Light rust staining in many areas. Some mechanical breaks, but mostly existing fractures.<br>11-12' -> 20 minutes<br>12-13' -> 25 minutes<br>13-14' -> 82 minutes<br>14-15' -> 70 minutes<br>15-16' -> 13 minutes | | |
| 14 | | | | | | | |
| 16 | 16-23' (C) Coring | | Recovery: 24" RQD: NA | --- | Cored from 16 to 23': White, hard SCHIST. Light rust staining in many areas. Some mechanical breaks, but mostly existing fractures. Core ran quickly from 16 to 21, and rock core likely not recovered in that interval. Return contains highly weathered rock flour. Stopped core due to loss of seal at surface and excessive water loss.<br>16-17' -> 2 minutes<br>17-18' -> 1 minute<br>18-19' -> 1 minute<br>19-20' -> 1 minute<br>20-21' -> 1 minute<br>21-22' -> 39 minutes<br>22-23' -> 35 minutes | | |
| 18 | | | | | | | |
| 20 | | | | | | | |
| 22 | | | | | | | |
| | | | | | End of Boring at 23 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON (2")
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance
5 to 11'=Interval sampling with split spoon and sonic rig
11 to 16', 16 to 21', and 21 to 23'=Rock Cored
Boring complete to 23' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** CONT-1 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Zohar Lavy
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 4/25/2012 | | | |
| Time | 915 | | | |
| Meas. From | Sonic Sample | Top of Casing | | |

**Weather:** Clear, Mid 60s
**Date/Time Start:** 4/25/12 ; 0915
**Date/Time Finish:** 5/2/12 ; 1230

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT<br>8-60" Brown SAND and GRAVEL, some Brick, Wire, Metal | | Observed Water Level at 5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | - | 60" | 2.8 | 0-18" Wet, brown/gray, fine to coarse SAND and fine to coarse sub-angular to round GRAVEL, trace Silt, trace Brick, trace Wood;18-24" Moist, gray/black, fine to medium SAND, little Silt, trace fine to medium sub-angular to sub-round Gravel | | |
| 6 | | | | | | | |
| | | | | 3.1 | | | |
| 8 | | | | | 24-60" Moist, brown/gray, fine to medium SAND, little Silt, trace Wood, trace Brick, trace weathered Gneiss, trace round Cobble | | |
| | | | | 1.7 | | | |
| 10 | 10-15' (SO) Sonic | - | 18" | 11.2 | Wet, weathered GNEISSIC SCHIST, some Brick, little brown, fine to coarse Sand | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | - | 36" | 140.0 | 0-24" CONCRETE | | |
| 16 | | | | | 24-36" CONCRETE and BRICK, little Wood | | |
| 18 | | | | | | | |
| 20 | 20-25' (SO) Sonic | - | 20" | 7.8 | Moist, red, fine to coarse SAND, trace Silt, trace sub-angular to round, fine to medium Gravel, trace weathered Gneiss | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | - | 60" | 12.1 | 0-18" Moist, red, fine to coarse SAND, trace Silt, trace sub-angular to round, fine to medium Gravel, trace weathered Gneiss | | |
| 26 | | | | | 18-60" Weathered GNEISS | | |
| 28 | | | | | | | |
| 30 | 30-35' (SO) Sonic | - | 42" | 1.5 | 0-42" GNEISSIC SCHIST | | |
| 32 | 31.5-36.5' (C) Coring | | Recovery: 54" RQD: 90% | | Cored with truck rig, appears casing deviated when installed, causing core to start at 31.5 ft bgs in fresh rock. Rechecked core depth in field. Cored from 31.5-36.5 ft bgs: 0-2" Hard, fresh, black GNEISSIC SCHIST; 2-8" Hard fresh white SCHIST; 8-42" Hard, fresh, black GNEISSIC SCHIST; 42-53" Hard fresh white SCHIST; 53-54" very hard white to rose QUARTZ; transitions are intact and continuous; 35-45° fractures at 10", 31", and 38".<br>31.5-32.5' - > 20 minutes 34.5-35.5' - > 18 minutes<br>32.5-33.5' - > 10 minutes 35.5-36.5' - > 20 minutes<br>33.5-34.5' - > 11 minutes | | |
| 34 | | | | | | | |
| 36 | | | | | | | |
| | | | | | End of Boring at 36.5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance
5 to11'=Interval sampling with sonic rig
31.5-36.5'= Rock Coring
Boring complete to 36.5' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Jankins, C. Migliori.
**Inspector:** Z. Lavy, S. Monte, N. Garguilo
**Rig Type:** Sonic / CME 75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** Sheet 1 of 1 **CONT-2**
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~2 ft bgs | DTW | | |
| Date | 4/27/2012 | | | |
| Time | 800 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** 60s, Rain.
**Date/Time Start:** 5/4/12, 13:00
**Date/Time Finish:** 5/11/12, 9:00

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | --- | 0-8" ASPHALT<br>8-24" Brown, fine to coarse SAND and COBBLE<br>Encountered ground water at 24" bgs. Dig bar advanced to 60" in several locations. | | Observed Water Level at 2 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 24" | 1.9 | 0-24" Moist, grey/brown, fine to medium SAND, some weathered Gneissic Schist, little Brick, little sub-angular to sub-rounded fine to coarse Gravel, trace black fine Sand, trace Silt, trace Concrete | | |
| 6 | | | | | | | |
| 8 | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 52" | 14.6 | 0-24" CONCRETE mixed with Schist and Gneiss | | |
| 12 | | | | 9.6 | 24-52" Orange/brown, fine SAND and SILT, trace Clay | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 60" | 15.3 | 0-36" Moist, brown, medium to coarse SAND | | |
| 16 | | | | | | | |
| 18 | | | | 5.5 | 36-60" Moist, brown SILT, trace Cobble (weathered schist), slight hydrocarbon | | |
| 20 | 20-25' (SO) Sonic | --- | 60" | --- | 0-18" Moist, red/brown, fine SAND, some Silt, trace Cobbles, trace black weathered Gneissic Schist.<br>18-30" Moist, black, weathered GNEISSIC SCHIST<br>30-60" Dry, red/brown SAND, some Silt and Gravel, weathered Rock 48-60" | | |
| 22 | | | | | | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 36" | 0.0 | 0-8" Weathered SCHIST and COBBLE<br>8-36" Black, GNEISSIC SCHIST | | |
| 26 | | | | | | | |
| 28 | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 60" | --- | 0-60" Black, weathered GNEISSIC SCHIST, highly fractured | | |
| 32 | | | | | | | |
| 34 | | | | | | | |
| 36 | 35-40' (C) Coring | --- | Recovery: 60" RQD: 100% | --- | Cored from 35-40': 0-14" Hard, black, fresh GNEISSIC SCHIST. 14-16": Black, GNEISSIC SCHIST transitions to white SCHIST (intact contact). 16-60': Hard, white, fresh SCHIST. Notes: No fractures in core. 0-16" is folded with vein dip from 45° to 135°, varies rapidly.<br>35-36' -> 26 minutes<br>36-37' -> 10 minutes<br>37-38' -> 16 minutes<br>38-39' -> 19 minutes<br>39-40' -> 19 minutes | | |
| 38 | | | | | | | |
| | | | | | End of Boring at 40 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (4/25)
5 to 35'=Sonic rig (5/4, 5/7)
35 to 40'=Rock Cored (1 segment, 5/11)
Boring complete to 40' bgs; Grouted to surface

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic, CME-75

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** CONT-3 Sheet 1 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 5/2/2012 | | | |
| Time | 845 | | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

**Weather:** Cloudy. Light rain, mid 50s
**Date/Time Start:** 5/2/12; 0845
**Date/Time Finish:** 5/3/12; 1330

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-9" ASPHALT<br>9-18" Moist, brown SILT and GRAVEL, some Brick fragments<br>18-60" Moist, brown SILT and fine SAND, some Cobble | | |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-10' (SO) SONIC | --- | 60" | 12.3 | 0-30" Wet, brown fine to coarse SAND, some angular to sub-round fine to coarse Gravel | | Observed Water Level at 5 ft bgs |
| 6 | | | | | 30-36" Wet, red/brown fine to coarse SAND, some angular to sub-round fine to coarse Gravel | | |
| | | | | 29.7 | 36-44" Highly weathered, black, micaceous GNEISS | | |
| 8 | | | | | 44-60" Moist, brown fine to medium SAND, little sub-angular to round fine to coarse Gravel, trace Brick, trace Silt | | |
| 10 | 10-15' (SO) Sonic | --- | 40" | 18.0 | 0-15" Wet, grey/brown fine to coarse SAND, some fine to medium sub-angular to sub-round Gravel, trace Brick | | |
| 12 | | | | | 15-40" Highly weathered GNEISSIC SCHIST | | |
| 14 | | | | | | | |
| | 15-20' (SO) Sonic | --- | 24" | 82.9 | 0-6" Highly weathered GNEISSIC SCHIST | | |
| 16 | | | | | 6-24" Wet, grey/orange fine to medium SAND, some angular to sub-round fine to coarse Gravel, little weathered Gneissic Schist, trace Brick, NAPL blebs, hydrocarbon odor, sheens | | |
| 18 | | | | | | | |
| 20 | 20-22' (SO) Sonic | --- | 18" | 171.0 | 0-8" Wet, grey/brown fine to medium SAND, some weathered Gneissic Schist, little sub-angular fine to coarse Gravel; 8-18" SCHIST and weathered CONCRETE | | |
| 22 | 22-25' (SO) Sonic | --- | 30" | 15.7 | CONCRETE (mixed heavily with black Gneissic Schist and tan Schist Cobble) | | |
| 24 | | | | | | | |
| | 25-30' (SO) Sonic | --- | 8" | --- | White SCHIST and BRICK | | |
| 26 | | | | | | | |
| 28 | | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 18" | --- | 0-2" BRICK; 2-18" GNEISSIC SCHIST | | |
| 32 | | | | | | | |
| 34 | | | | | | | |
| | 35-38' (SO) Sonic | --- | 14" | --- | Grey SCHIST | | |
| 36 | | | | | | | |

Please see Sheet 2

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (4/25)
5 to 38'=Interval sampling with sonic rig
38.5-45.5'=Rock Cored
Boring complete to 45.5' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** CONT-3 Sheet 2 of 2

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Migliori
**Inspector:** Zohar Lavy, Noah Garguilo
**Rig Type:** Sonic, CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 5/2/2012 | | | |
| Time | 845 | | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

**Weather:** Cloudy. Light rain, mid 50s

**Date/Time Start:** 5/2/12; 0845

**Date/Time Finish:** 5/3/12; 1330

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 38 | 38.5-43.5'(C) Coring | --- | Recovery: 50" RQD: 70% | --- | Cored from 38.5-43.5': 0-31" Fresh, hard, white SCHIST with intact transition to black Gneissic Schist; 31-50" Fresh, hard, black Gneissic Schist; mechanical fractures at 4", 17", 31", and 42-50"; existing fractures at 35" and 42-50"; 45° vein<br>38.5-39.5' - > 17 minutes 41.5-42.5' - > 20 minutes<br>39.5-40.5' - > 28 minutes 42.5-43.5' - > 18 minutes<br>40.5-41.5' - > 36 minutes | | |
| 40 | | | | | | | |
| 42 | | | | | | | |
| 44 | 43.5-45.5' (C) Coring | --- | Recovery: 6" RQD: NA | --- | Cored from 43.5-45.5': 0-6" Vertically split/fracture between white SCHIST and black GNEISSIC SCHIST fragments<br>43.5-44.5' - > 10 minutes<br>44.5-45.5' - > 8 minutes | | |
| | | | | | End of Boring at 45.5 ft bgs | | |

**SAMPLING METHOD**

SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (4/25)
5 to 38'=Interval sampling with sonic rig
38.5'-45.5'=Rock Cored
Boring complete to 45.5' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** CONT-4 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Migliori, Kensley Noran
**Inspector:** Noah Garguilo
**Rig Type:** CME-75

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Weather:** Cloudy, high 60s
**Date/Time Start:** 5/7/12; 1200
**Date/Time Finish:** 5/8/12; 1430

**Location Plan**
See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 5/7/2012 | | | |
| Time | 1200 | | | |
| Meas. From | Casing Advancement | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-6" CONCRETE | | Observed Water Level at 5 ft bgs |
| | | | | 0.0 | 6-60" Moist, brown, fine to coarse SAND and weathered GNEISSIC SCHIST BOULDERS, some Brick and fine to coarse sub-angular to round Gravel, trace Metal | | |
| 2 | | | | | | | |
| 4 | | | | | Drove casing to 8 ft bgs due to leaking mud tub; NAPL observed in wash water | | |
| 6 | | | | | | | |
| 8 | 8-13' (C) Coring | --- | Recovery: 54" RQD: 82% | --- | Cored from 8-13': 0-54" Hard, fresh, white SCHIST, abundant rose Quartz to 20"; existing fractures at 12" and 26" are horizontal, fresh to slightly weathered, and NAPL stained; mechanical breaks at 20", 36", 39", and 42" | | |
| 10 | | | | | 8-9' - > 14 minutes 11-12' - > 27 minutes | | |
| 12 | | | | | 9-10' - > 21 minutes 12-13' - > 20 minutes | | |
| 14 | 13-16.7' (C) Coring | --- | Recovery: 48" RQD: 100% | --- | 10-11' - > 22 minutes | | |
| 16 | | | | | Cored from 13-16.7': 0-48" Hard, white SCHIST, abundant rose Quartz, no fractures or vein dip apparent | | |
| | | | | | 13-14' - > 36 minutes 15-16.7' - > 61 minutes | | |
| | | | | | 14-15' - > 54 minutes | | |
| | | | | | End of Boring at 16.7 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (4/26)
5 to 8'=Not sampled due to drilling difficulties
8 to 16.7'=Rock Cored
Boring complete to 16.7' bgs ; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** CONT-5 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Chris Mason, Chris Jenkins
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Location Plan**

See Site Plan

**Weather:** Cloudy, high 70s
**Date/Time Start:** 5/4/12; 0730
**Date/Time Finish:** 5/4/12; 1000

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5 ft bgs | DTW | | |
| Date | 5/4/2012 | | | |
| Time | 820 | | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT<br>8-60" Moist, brown, fine to coarse SAND, some Cobble and Brick, little fine to coarse sub-angular to round Gravel, trace Wood | | Observed Water Level at 5 ft bgs |
| 2 | | | | | | | |
| 4 | | | | | | | |
| | 5-10' (SO) Sonic | --- | 30" | 142.0 | 0-12" Wet, brown fine to coarse SAND and fine to medium sub-angular to round GRAVEL | | |
| 6 | | | | | 12-26" Moist, weathered, black GNEISSIC SCHIST and brown fine to medium SAND, little blue/green fine SAND, hydrocarbon odor | | |
| 8 | | | | | 26-30" Moist, weathered, black GNEISSIC SCHIST and brown fine to medium SAND, little blue/green fine SAND, trace Brick, hydrocarbon odor | | |
| 10 | 10-15' (SO) Sonic | --- | 60" | 92.4 | 0-24" CONCRETE and GNEISSIC SCHIST, trace Wood<br>24-56" Moist, dark brown fine to coarse SAND, some angular to sub-round fine to medium Gravel, trace Wood, trace Silt | | |
| 12 | | | | 138.0 | | | |
| 14 | | | | | 56-60" Highly weathered, black GNEISS | | |
| | | | | | Drilled to 16 ft bgs with Sonic | | |
| 16 | 16-20' (SO) Sonic | --- | 38" | --- | GNEISS to GNEISSIC SCHIST; Dark brown/black NAPL in wash water from 16 to 21 ft bgs | | |
| 18 | | | | | | | |
| 20 | 20-25' (SO) Sonic | --- | 60" | --- | 0-6" GNEISS to GNEISSIC SCHIST<br>6-12" GNEISS to GNEISSIC SCHIST (intact transition into tan/rose SCHIST) | | |
| 22 | | | | | 12-60" White/rose SCHIST | | |
| 24 | | | | | | | |
| | | | | | End of Boring at 25 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (4/26)
5 to 25'=Interval sampling with sonic rig
16-25'=Rock Cored utilizing sonic casing; further coring not conducted due to rapid water/NAPL outflow from the borehole (artesian cor
Boring complete to 25' bgs; Grouted to surface

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Contractor: Advanced Drilling Technology | | | | | **PARSONS** DRILLING RECORD | BORING/ WELL NO. | Sheet 1 of 1 **CONT-7** |
| Driller: Chris Mason, Chris Jenkins | | | | | | Location Description: | |
| Inspector: Zohar Lavy | | | | | PROJECT NAME: Consolidated Edison West 45th Street PDI | West 45th Street, Manhattan, NY | |
| Rig Type: Sonic | | | | | PROJECT NUMBER: 446672-05000 | | |
| GROUNDWATER OBSERVATIONS | | | | | | Location Plan | |
| Water Level | DTW ~5 ft bgs | DTW | | | Weather: Rain, low 70s | | |
| Date | 5/1/2012 | | | | Date/Time Start: 5/1/12; 0900 | See Site Plan | |
| Time | 945 | | | | Date/Time Finish: 5/1/12; 1430 | | |
| Meas. From | Split Spoon | Top of Casing | | | | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-8" ASPHALT<br>8-24" Moist, brown fine to coarse SAND and COBBLE<br>Encountered ground water at 24" bgs. Dig bar advanced to 60" in several locations | | Upon advancing air knife to 2 ft bgs, the water level within the hand clearance hole rose to 0.5 ft bgs. |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | 5-10' (SO) Sonic | --- | 24" | 62.5 | Wet, highly weathered GNEISSIC SCHIST, some brown fine to coarse SAND, little Brick, trace round fine to medium Gravel | | |
| 8 | | | | | | | |
| 10 | 10-15' (SO) Sonic | --- | 20" | 124.0 | 0-10" CONCRETE and weathered GNEISSIC SCHIST COBBLES<br>10-20" Weathered GNEISSIC SCHIST COBBLES | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| 16 | 15-20' (SO) Sonic | --- | 60" | --- | 0-48"Black GNEISSIC SCHIST, white Schist banding; 48-60" Black GNEISSIC | | |
| 18 | | | | | | | |
| 20 | 20-24' (SO) Sonic | --- | 12" | --- | 0-4" Black GNEISSIC SCHIST, white Schist banding<br>4-12" White SCHIST | | |
| 22 | | | | | | | |
| | | | | | End of Boring at 24 ft bgs | | |

SAMPLING METHOD
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance
5 to 24'=Interval sampling with sonic rig
15 to 24'=Rock Cored with sonic casing; further coring was not possible due to rapid water flow out of the borehole (artesian conditions)
Boring complete to 24' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** CONT-8 Sheet 1 of 1

**Contractor:** Advanced Drilling Technology
**Driller:** Joey McGill, Jamey Meyers
**Inspector:** Zohar Lavy
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW ~5' | DTW | | |
| Date | 6/4/2012 | | | |
| Time | 945 | | | |
| Meas. From | Hand Clearance | Top of Casing | | |

**Weather:** Cloudy, high 70s
**Date/Time Start:** 6/25/12; 1300
**Date/Time Finish:** 6/25/12; 1400

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | | 0-7" ASPHALT | | Observed Water Level at 5 ft bgs |
| | | | | 0.0 | 7-60" Moist to wet, brown fine to coarse SAND and sub-angular GRAVEL | | |
| 2 | | | | | | | |
| 4 | | | | | | | |
| 6 | 5-10' (SO) Sonic | --- | 60" | 0.0 | 0-30" Wet, orange/grey medium SAND, some fine to coarse sub-angular to round Gravel, trace weathered Gneissic Schist | | |
| | | | | 1.7 | 30-48" Wet, grey, fine to medium SAND and weathered GNEISSIC SCHIST | | |
| 8 | | | | 2.4 | 48-60" Wet, grey, fine to medium SAND and weathered GNEISSIC SCHIST, trace Brick, trace Wood | | |
| 10 | 10-15' (SO) Sonic | --- | 60" | 18.2 | 0-40" Wet, light brown/grey fine to medium SAND, little fine to medium sub-angular to sub-round Gravel, little Silt, trace Brick, trace green Clay | | |
| 12 | | | | 106.0 | 40-50" CONCRETE | | |
| | | | | 481 | Moist WOOD and BRICK, strong hydrocarbon odor | | |
| 14 | | | | | | | |
| 16 | 15-20' (SO) Sonic | --- | 48" | 245.0 | 0-30" Moist, tan/orange SILT, little fine Sand | | |
| | | | | 46.5 | 30-40" Wet, brown/orange medium SAND, trace Silt | | |
| 18 | | | | 58.7 | 40-48" Wet, brown/orange medium SAND and highly weathered, micaceous GNEISS, trace medium sub-angular Gravel, trace Silt, slight hydrocarbon odor | | |
| 20 | 20-23.5' (SO) Sonic | --- | 30" | 384.0 | Wet, brown/red fine to coarse SAND, some fine to medium sub-angular to round Gravel, trace weathered Gneissic Schist, trace Silt, slight hydrocarbon odor | | |
| 22 | | | | | | | |
| 24 | 23.5-24.5' (SO) Sonic | --- | 12" | 685 | 0-10" Wet, brown/red fine to coarse SAND and fine to medium sub-angular to round Gravel, NAPL blebs, strong hydrocarbon odor | | |
| 25 | | | | | 10-12" Weathered SCHIST, little Concrete, trace Brick | | |
| 26 | 24.5-25.5' (SC) Sonic Casing | --- | 12" | --- | White SCHIST | | |
| | | | | | End of Boring at 25.5 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance
5 to 25.5'=Interval sampling with sonic rig
24.5-25.5'=Rock Cored with sonic casing
Boring complete to 25.5' bgs; Grouted to surface

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** MW-24 (Sheet 1 of 1)

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** J. Meyers, J. McGill
**Inspector:** Zohar Lavy/Noah Garguilo
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

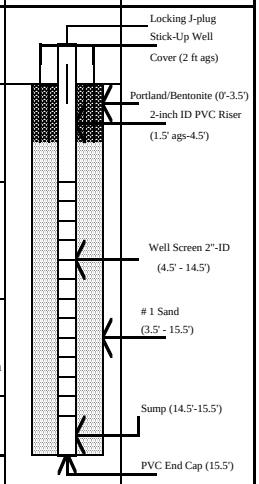
**Weather:** Cloudy, mid 90s
**Date/Time Start:** 6/20/12 ; 0900
**Date/Time Finish:** 6/21/12; 1320

**Location Plan**
See Site Plan

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW 5 ft bgs | DTW 1.35 (~0.5 ft above grade) | | |
| Date | 6/20/2012 | 6/26/2012 | | |
| Time | 925 | 1125 | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| +2 | | | | | |
| 0 | Vac-Tron | Hand-Cleared | --- | --- | 0-8" ASPHALT |
| | | | | | 8-60" Moist, brown, fine to coarse SAND, some Cobble and Brick, little fine to coarse sub-angular to round Gravel, trace Wood |
| 2 | | | | | |
| | | | | | |
| 4 | | | | | |
| | 5-10' (SO) Sonic | --- | 48" | 1067 | 0-14" Wet, black fine to coarse SAND, some sub-angular fine to coarse Gravel, trace Wood, trace Silt, NAPL saturation, strong hydrocarbon odor, staining |
| 6 | | | | | |
| | | | | 586 | 14-36" Moist grey fine to medium SAND, some Wood, little weathered Gneiss Gravel, trace Brick |
| | | | | | |
| 8 | | | | 377 | 36-48" Moist, grey fine to medium SAND, trace Silt, slight hydrocarbon odor |
| | | | | | |
| 10 | 10-13' (SO) Sonic | --- | 36" | 3.1 | 0-12" Moist, grey/light green fine SAND and SILT, trace Clay, trace sub-round to sub-angular fine to medium Gravel |
| | | | | | |
| | | | | 3.5 | 12-28" Wet, BRICK |
| | | | | 3 | 28-36" Moist, dark brown fine to medium SAND, little sub-angular fine to medium Gravel |
| 12 | | | | | |
| | 13-16' (SC) Sonic Casing | --- | 10" | --- | Weathered SCHIST |
| 14 | | | | | |
| | | | | | End of Boring at 16 ft bgs |




**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/7)
5-16'=Interval sampling with sonic rig
Rock Coring not conducted, artesian conditions encountered; sonic casing advanced into rock from 13 to 16 ft bgs
Boring complete to 16' bgs; Installed MW-24 to 15.5 ft bgs (2" well)

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PW-1 Sheet 1 of 1

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** J. Meyers, J. McGill
**Inspector:** Zohar Lavy/Noah Garguilo
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

**Weather:** Cloudy, mid 90s
**Date/Time Start:** 6/20/12 ; 0900
**Date/Time Finish:** 6/21/12; 1320

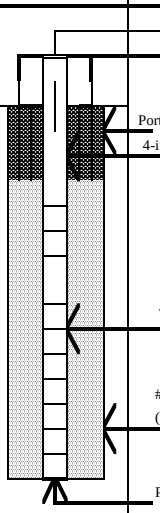
**Location Plan**
See Site Plan

GROUNDWATER OBSERVATIONS

| Water Level | DTW 5 ft bgs | DTW 1.35 (~0.5 ft above grade) | | |
|---|---|---|---|---|
| Date | 6/20/2012 | 6/26/2012 | | |
| Time | 925 | 1125 | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL |
|---|---|---|---|---|---|
| +2 | | | | | |
| 0 | Vac-Tron | Hand-Cleared | --- | --- | 0-8" ASPHALT |
| | | | | 1.6 | 8-60" Moist, brown, fine to coarse SAND and sub-angular to round GRAVEL, slight naphthalene-like odor |
| 2 | | | | | |
| | | | | | |
| 4 | | | | | |
| | 5-10' (SO) Sonic | --- | 8" | 2987 | Wet, dark grey medium SAND, some angular to sub-angular fine to coarse Gravel, trace Wood, NAPL saturation (dark brown, non-viscous), strong hydrocarbon odor, staining |
| 6 | | | | | |
| | | | | | |
| 8 | | | | | |
| | | | | | |
| 10 | 10-12.5' (SO) Sonic | --- | 30" | 1.5 | 0-12" CONCRETE; 12-30" BRICK AND MORTAR |
| | | | | | |
| 12 | | | | | |
| | | | | | Very hard drilling from 12.5-16 ft bgs; no sample retrieved from 12.5 to 16 ft bgs |
| 14 | | | | | |
| | | | | | End of Boring at 16 ft bgs |

**SCHEMATIC**




**COMMENTS**

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/5)
5-16'=Interval sampling with sonic rig
Rock Coring not conducted, artesian conditions encountered
Boring complete to 16' bgs; Installed PW-1 to 14 ft bgs (4" well)

**PARSONS**
**DRILLING RECORD**

**BORING/ WELL NO.** PW-2 — Sheet 1 of 2

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** J. Meyers, J. McGill
**Inspector:** Zohar Lavy/Noah Garguilo
**Rig Type:** Sonic

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**Location Description:** West 45th Street, Manhattan, NY

GROUNDWATER OBSERVATIONS

| | | | | |
|---|---|---|---|---|
| Water Level | DTW | DTW 4.13 | | |
| Date | | 6/26/2012 | | |
| Time | | 935 | | |
| Meas. From | Sonic Sampler | Top of Casing | | |

**Weather:** Clear, 80s (6/8/12); Partly Cloudy, mid 90s (6-22-12)

**Date/Time Start:** 6/8/12 ; 1200

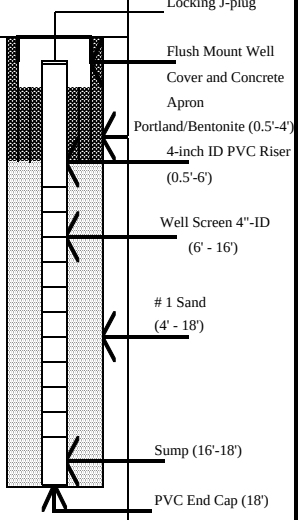
**Date/Time Finish:** 6/22/12; 0830

**Location Plan**

See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | COMMENTS |
|---|---|---|---|---|---|---|
| 0 | Vac-Tron | Hand-Cleared | --- | --- | 0-8" CONCRETE | |
| | | | | 6.1 | 8"-60" Moist, brown, fine to coarse SAND and GRAVEL, some Cobbles in 30" to 60" zone, slight naphthalene-like odor; No groundwater encountered during hand clearance | |
| 2 | | | | | | |
| 4 | | | | | | |
| 6 | 5-10' (SO) Sonic | --- | 20" | 163 | 0-18" DEBRIS (primarily wood, brick), little Cobbles, little Gravel, heavy NAPL blebs to light saturation/coating on wood; Light blebs on debris/gravel | |
| 8 | | | | | 18"-20" Grey, fine to medium SAND and weathered SHIST; NAPL blebs rare (1/4" to 1/2" diameter) | |
| 10 | 10-15' (SO) Sonic | --- | 32" | 125 | 0-6" Wet, black, SAND and weathered GNEISSIC SHIST, rare NAPL blebs (1/2" diameter), strong fuel-oil-like odor | |
| 12 | | | | 772 | 6"-32" Brown, fine to coarse SAND, little Silt, trace fine Gravel, rare NAPL blebs (1/4" diameter), strong fuel-oil-like odor | |
| 14 | | | | | | |
| 16 | 15-20' (SO) Sonic | --- | 44" | 618 | 0-12" Moist, brown, fine SAND and SILT, some weathered Brick, rare NAPL blebs (1/4" diameter), mild fuel-oil-like odor | |
| 18 | | | | 683 | 12"-44" Dry, red, BRICK and MORTAR, slight sheen (1/2" to 1") in patches, mild fuel-oil-like odor | |
| 20 | 20-25' (SO) Sonic | --- | 44" | | 0-44" BRICK, slight fuel-oil-like odor | |
| 22 | | | | | | |
| 24 | | | | | | |
| 26 | 25-30' (SO) Sonic | --- | 60" | 32.1 | 0-60" BRICK, no odor | |
| 28 | | | | | | |
| 30 | 30-35' (SO) Sonic | --- | 48" | 178 | 0-48" BRICK, no odor | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | 35-40' (SO) Sonic | --- | 48" | --- | 0-48" BRICK, slight fuel-oil-like odor | |
| 38 | | | | | | |
| 40 | 40-45' (SO) Sonic | --- | 60" | 0 | 0-12" CONCRETE, trace Brick | Boring stopped temporarily at 40 bgs on 6/8/12. |
| | | | | | 12-48" CONCRETE | |

Please see Sheet 2




**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/7/12) ; 5 to 49' sonic rig
Boring complete to 49' bgs; Installed PW-2 to 18 ft bgs (4" well)

Additional Notes:
1. Drilled 6/8/12 by Jeremy Meyers utilizing Rotosonic rig. Logging by Noah Garguilo. Drilled to 40 ft bgs
2. Drilled 6/22/12 by Joey McGill utilizing Rotosonic from 40-49 ft bgs. Logged by Zohar Lavy

**Contractor:** Aquifer Drilling & Testing Inc.
**Driller:** J. Meyers, J. McGill
**Inspector:** Zohar Lavy/Noah Garguilo
**Rig Type:** Sonic

**PARSONS**
**DRILLING RECORD**

**PROJECT NAME:** Consolidated Edison West 45th Street PDI
**PROJECT NUMBER:** 446672-05000

**BORING/ WELL NO.** PW-2 Sheet 2 of 2
**Location Description:** West 45th Street, Manhattan, NY

| GROUNDWATER OBSERVATIONS | | | | |
|---|---|---|---|---|
| Water Level | DTW | DTW 4.13 | | |
| Date | | 6/26/2012 | | |
| Time | | 935 | | |
| Meas. From | Split Spoon | Top of Casing | | |

**Weather:** Clear, 80s (6/8/12); Partly Cloudy, mid 90s (6-22-12)
**Date/Time Start:** 6/8/12 ; 1200
**Date/Time Finish:** 6/22/12; 0830

**Location Plan**
See Site Plan

| Sample Depth | Sample/ Method | Blow Count | Rec. | PID (ppm) | FIELD IDENTIFICATION OF MATERIAL | SCHEMATIC | COMMENTS |
|---|---|---|---|---|---|---|---|
| 42 | 40-45' (SO) Sonic | | | | 48-60" Weathered white SCHIST (Please see Sheet 1 of this Log for 0-48") | | |
| | | | | | | | |
| 44 | | | | | | | |
| | 45-49' (SO) Sonic | --- | 24" | | Black GNEISSIC SCHIST (vertical banding and fractures) | | |
| 46 | | | | | | | |
| | | | | | | | |
| 48 | | | | | | | |
| | | | | | End of Boring at 49 ft bgs | | |

**SAMPLING METHOD**
SO = SONIC RIG
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

0 to 5'=Hand-Clearance (6/7/12) ; 5 to 40' sonic rig.
Boring complete to 49' bgs; Installed PW-2 to 18 ft bgs (4" well)

Additional Notes:
1. Drilled 6/8/12 by Jeremy Meyers utilizing Rotosonic rig. Logging by Noah Garguilo. Drilled to 40 ft bgs
2. Drilled 6/22/12 by Joey McGill utilizing Rotosonic from 40-49 ft bgs. Logged by Zohar Lavy

# APPENDIX D – EXCAVATION WORK PLAN (EWP)

## D-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the Site's cover system for OU-1 on-site parcels and OU-2 (not OU-1 off-site parcels), the site owner or their representative will notify the NYSDEC contacts listed in the table below. Table D-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

**Table D-1: Notifications***

| | |
|---|---|
| NYSDEC Project Manager<br>Greta White | 518-402-2029<br>greta.white@dec.ny.gov |
| NYSDEC Project Manager Supervisor<br>Amen Omorogbe | 518-402-9662<br>amen.omorogbe@dec.ny.gov |
| NYSDEC Site Control | TBD |

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for Site regrading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated, any modifications of truck routes, and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;

- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 Code of Federal Regulations (CFR) 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix E of this ISMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form and all supporting documentation including, but not limited to, chemical testing results.

## D-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g., PID) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the cover system. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in NYS, or a qualified person who directly reports to a PE who is licensed and registered in NYS will perform the screening. Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-Site disposal and material that requires testing to determine if the material can be reused on site as soil beneath a cover or if the material can be used as cover soil.

## D-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC.

## D-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in NYS, or a qualified person who directly reports to a PE who is licensed and registered in NYS will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easement(s) on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this ISMP is posed by utilities or easement(s) on the Site. A Site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks are washed at the truck wash before leaving the Site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to

Site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed of at an off-site permitted landfill facility in accordance with all applicable local, state, and federal regulations.

## D-5 MATERIALS TRANSPORT OFF-SITE

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

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

Truck transport route selection will be based on the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Due to limited available space at the Site, some off-site queuing of trucks may be necessary. The number and duration of trucks lined up along the Site entrance will be minimized through efficient scheduling.

## D-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed of in an off-site permitted facility in accordance with all local, state and federal regulations. If disposal of material from this Site is proposed for unregulated off-site disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC project manager approval.

Off-Site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate (e.g., hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, construction and demolition [C&D] debris recovery facility). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the PRR. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading, and facility receipts.

Non-hazardous historic fill and contaminated soils taken off site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet USCOs is prohibited from being taken to an NYS C&D debris recovery facility (6 NYCRR Subpart 360-15 registered or permitted facility).

## D-7 MATERIALS REUSE ON-SITE

The qualified environmental professional as defined in 6 NYCRR part 375 will ensure that procedures defined for materials reuse in this ISMP are followed and that unacceptable material (i.e., contaminated) does not remain on site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on site will be placed below the demarcation layer or impervious surface and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Proposed materials for reuse on site must be sampled for a full suite analytical parameters including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the Site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances June 2021 guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

Soil/fill material for reuse on site will be segregated and staged as described in Sections D-2 and D-3 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of site excavation activities and proximity to nearby Site features. Material reuse on site will comply with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Any demolition material proposed for reuse on site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on site.

## D-8 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including but not limited to, excavation dewatering, decontamination waters, and groundwater monitoring well purge and development waters, will be handled, transported and disposed off-Site at a permitted facility in accordance with applicable local, state, and federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, and will be managed off site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e., a local pond, stream or river) will be performed under a State Pollution Discharge Elimination System (SPDES) permit.

## D-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the OU-1 or OU-2 Decision Document, as applicable. If appropriate, a demarcation layer, consisting of orange snow fencing material or equivalent material will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special

conditions for disturbance of remaining contaminated soils defined in this ISMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent PRR and in an updated ISMP.

## D-10 BACKFILL FROM OFF-SITE SOURCES

Backfill materials utilized at the Site will be obtained from a NYSDOT approved source. The following material may be imported and used as backfill without chemical testing:

- Rock or stone, consisting of virgin material from a permitted mine or quarry; or
- Granular fill material (less than 10% passing #80 sieve) that is virgin material from a NYSDOT approved source.

Should backfill material not meet one of the above requirements, the material will be tested via the collection of one composite sample for every 500 cubic yards for each source area and analyzed by a NYSDOH-certified Environmental Laboratory Accreditation Program (ELAP)-approved laboratory. Allowable constituent levels for imported fill materials will be in compliance with DER-10 imported fill or soil guidance.

All materials proposed for import onto the Site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, and will be in compliance with provisions in this ISMP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the Site.

Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC project manager. Soil material will be sampled for

the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

## D-11 STORMWATER POLLUTION PREVENTION

A Stormwater Pollution Prevention Plan will be developed for any future Site development activity affecting an area greater than one acre and will conform to the requirements of the NYSDEC Division of Water guidelines and NYS regulations. As part of the Stormwater Pollution Prevention Plan the following measures will be implemented.

- Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.
- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures identified in the ISMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

## D-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. The NYSDEC project manager will be promptly notified of the discovery.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals, TCL volatiles and semi-volatiles [including 1,4-dioxane], TCL pesticides and PCBs, and PFAS), unless the Site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone within two hours to NYSDEC's project manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the PRR.

## D-13 COMMUNITY AIR MONITORING PLAN

During the performance of on-site intrusive work at the Site, community air monitoring will be conducted in compliance with NYSDOH Generic CAMP. Real-time air monitoring for volatile compounds and particulates of the hot zone will be performed as described below.

### Organic Vapor Monitoring

Periodic monitoring for VOCs will be conducted on site during certain non-intrusive activities, such as the collection of groundwater samples. Periodic monitoring will include obtaining measurements upon arrival at a groundwater sampling location, while opening a monitoring well cap, when bailing and/or purging a well, and upon leaving the location. In some instances, depending on the proximity of exposed individuals, continuous monitoring may be conducted during these activities.

Continuous monitoring for VOCs will be conducted during all on-site intrusive ground disturbance activities. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background concentrations. VOCs will be monitored continuously at the downwind perimeter of the hot zone. Monitoring

will be conducted with a PID equipped with a 10.6 eV lamp capable of calculating 15-minute running average concentrations. The following actions will be taken based on organic vapor levels measured:

- If total organic vapor levels exceed 5 ppm above background levels or concentrations during the 15-minute average at the perimeter, work activities will be temporarily halted and monitoring continued. If levels readily decreased (per instantaneous readings) below 5 ppm above background, work activities will resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the hot zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of the vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm above the background for the 15-minute average.

- If total organic vapor is above 25 ppm at the perimeter of the hot zone, activities will be shut down.

All 15-minute readings will be recorded and available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, will also be recorded.

**Particulate Monitoring**

During on-site ground intrusive activities particulate concentrations will be monitored continuously at the downwind perimeter of the hot zone with a portable real-time particulate monitor capable of measuring particulate matter less than 10 micrometers in size and capable of integrating over a period of 15 minutes (or less). The equipment will include an audible alarm to indicate exceedance of the action level. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background concentrations. The following actions will be taken based on particulate concentrations measured:

- If the measured downwind particulate level is 100 $\mu g/m^3$ or more above background for the 15-minute period or if dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression provided that the downwind particulate level does not

exceed 150 µg/$m^3$ above background and no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, the downwind particulate level is greater than 150 µg/$m^3$ above background, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind particulate level to within 150 µg/$m^3$ of the background (upwind) level and in preventing visible dust migration. All readings will be recorded and be available for NYSDEC and NYSDOH personnel to review.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH project managers.

## D-14 ODOR CONTROL PLAN

This Odor Control Plan is capable of controlling emissions of nuisance odors off site and on site. Specific odor control methods to be used on a routine basis may include foam suppressants or misting, depending on the scope of work. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the PRR.

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

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by

sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

## D-15 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the CAMP provided in Section D-13. If particulate levels at the Site exceed the thresholds listed in the CAMP or if airborne dust is observed on the Site or leaving the Site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the Site.

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

- Dust suppression will be achieved using a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

## D-16 OTHER NUISANCES

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances. Noise levels will also conform to the latest Occupational Safety and Health Administration (OSHA) standards noise levels which interfere with the work of the Owner or others will not be permitted. Operation of heavy equipment will be restricted to the hours set forth in local regulations unless a variance or permit is obtained.

# APPENDIX E – HEALTH AND SAFETY PLAN AND COMMUNITY AIR MONITORING PLAN

**APPENDIX E**

# HEALTH AND SAFETY PLAN
# WEST 45TH STREET FORMER GAS WORKS

# (SITE NO. 231109)




**CONSOLIDATED EDISON CO. OF NEW YORK, INC.**

**31-01 20th Avenue**

**Long Island City, NY 11105**

*Prepared by:*

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**NOVEMBER 2016**

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| | |
|---|---|
| AED | Automated External Defibrillator |
| AHA | Activity Hazard Analysis |
| CFR | Code of Federal Regulations |
| CPR | Cardiopulmonary Resuscitation |
| EMS | Emergency Medical Services |
| HAZWOPER | Hazardous Waste Operations and Emergency Response |
| IDLH | Immediately Dangerous to Life and Health |
| NAPL | Non-Aqueous Phase Liquid |
| NIOSH | National Institute for Occupational Safety and Health |
| OSHA | Occupational Safety and Health Administration |
| PEL | Permissible Exposure Limit |
| PID | Photo Ionization Detector |
| PPE | Personal Protective Equipment |
| PSM | Project Safety Manager |
| HASP | Health and Safety Plan |
| SSO | Site Safety Officer |
| TBD | To Be Determined |
| UV | Ultraviolet Radiation |
| VOC | Volatile Organic Compounds |

# 1.0 INTRODUCTION

This Health and Safety Plan (**HASP**) has been prepared for any post-remediation work at the West 45th Street Former Gas Works Operable Unit 1 (hereinafter referred to as the "**Site**"). It provides guidance for office and field activities required to complete the scope of work. This plan is a template to be used to prepare a site-specific HASP by any future party performing work at the Site. This template provides guidance for potential hazards that may be encountered during field activities that may be required to complete any post-remedial activities. The primary post-remedial field activities may include, but are not limited to, the following:

- Future intrusive construction work; and
- Monitoring, inspection and maintenance of the groundwater monitoring wells installed at the Site.

During intrusive work and other field activities, field staff may be exposed to hazards associated with chemicals of concern on and off the Site. As a result, field personnel may be required to have specialized training (i.e. as per 29 CFR 1910.120) or wear personal protective equipment (**PPE**) suitable for the level of contaminates present. Air monitoring may be required to evaluate contamination levels, ambient air conditions, and to determine if additional PPE is necessary.

Field staff may also be exposed to other hazards that are encountered during field activities including slips, trips, falls, automobiles, traffic, heavy equipment, drill rigs, and winches. Depending upon the time of season, field staff may be exposed to biological hazards, for example insect bites and stings., and ticks. Meteorological hazards such as lightning, wind, rain, and ultraviolet radiation may also be present.

This HASP template outlines safety and health requirements and guidelines for project work. When implemented, these requirements will help protect site personnel, visitors, the public and environment from exposure to potential safety and health hazards.

This HASP must be updated as conditions change or situations change, usually by addenda to the plan. All field personnel must understand and implement the HASP and any addenda. Review of the HASP should be documented by having field personnel sign an acknowledgement form stating that they understand the plan and its requirements.

# 2.0 STATEMENT OF HEALTH & SAFETY POLICY

This Section will be updated with a statement of safety and health policy by the party performing the work prior to commencement of any intrusive field activities at the Site.

## 3.0 SCOPE OF WORK EVALUATION

This HASP Template accompanies the Site Management Plan (SMP) for the Site which has been investigated and assessed for restricted commercial use. This potential scope of work described in the SMP includes but is not limited to intrusive activities that may result in encountering residual contaminated soils as part of future redevelopment; Site cap inspections; and general Site inspections.

## 4.0 SITE BACKGROUND

The site is located in New York, New York and occupies portions of Tax Blocks 1092 and 1107 from 44th to 46th Street, between 11th Avenue and the Hudson River. The site encompasses an approximately 5.1-acre area.

## 5.0 SITE HISTORY

Historical research was previously conducted and documented in the West 45th Street Gas Works Site History Report, Manhattan, New York (Parsons, 2002). Historical maps from Colton (1836), Viele (1865), Dripps (1852, 1867), Perris and Browne (1879, 1880), Taylor's Birds Eye View (1879), Con Edison records, and Sanborn fire insurance maps for the years 1890, 1899, 1911, 1930, 1950, 1968, 1979, 1980, 1982, 1984, 1985, 1987, 1988, 1990, 1991, 1992, 1993, 1994, 1995, and 1996 were examined in order to identify the history of the West 45th Street Former MGP.

Historic maps indicate that Block 1092 was vacant, with its western end under water, through the 1840s and 1850s. The 1852 Dripps map shows several unidentified structures, with the updated 1867 Dripps map showing additional development and a building identified as a saw mill over the western end of the block, overlapping the former shoreline.

Partial construction of the MGP was completed in 1877, with full construction being complete in 1878. The 1879 Bromley map and 1879 Taylor's birds' eye view drawing depict the initial configuration of the MGP Block 1092 contained five gas holders, a generator house, a scrubber and engine house, a retort and condenser house, and a purifying and lime house. The 1880 Perris and Browne map shows an enlarged MGP configuration that included a one-million cubic foot gas holder on Block 1092, which was eventually expanded to hold seven-million cubic feet of gas by 1930. The 1899 Sanborn map depicts the final configuration of the MGP structures, which included several new small tanks, and two small gas holders. The MGP operated until 1913, when all structures aside from the large gas holder were taken out of service and demolish. The large gas holder appeared on the 1930 and 1950 Sanborn maps, and Con Edison records indicate it was decommissioned in December of 1965 with demolition occurring soon thereafter.

Following demolition of the former MGP, Block 1092 saw the construction of two multi-story warehouses which have not changed in footprint since their original construction, and a 1.5 story bus repair depot which was demolished after 1968 to make way for a UPS parking lot and refueling center. Portions of the former gas holders still exist beneath the UPS parking lot, in areas where subsequent underground storage tanks were not constructed. Sanborn fire insurance maps indicate the piers in Block 1107 were extended 250 feet landward between 1911 and 1930, which reconfigured Blocks 1107, 1092, and 1093. The only portions of Block 1107 once used by the MGP still in existence are the piers and immediately adjacent shoreline in the southwest corner of OU-1; the rest is now under water.

## 6.0 RESPONSIBILITY/IDENTIFICATION OF KEY LINE PERSONNEL

This section will be updated by the party performing the work prior to the commencement of such work.

| | | |
|---|---|---|
| Contractor: | TBD | |
| Address: | TBD | |
| Telephone: | TBD | Email: TBD |

| | |
|---|---|
| Company Executive responsible for project: TBD | Contact No. TBD |
| Manager/Superintendent: TBD | Contact No. TBD |
| Safety Representative/Manager: TBD | Contact No. TBD |
| Key Foreperson or forepersons: TBD | Contact No. TBD |
| Client Project Management POC: Mr. Rich Rienzo | Contact No. TBD |
| | |

These personnel have the authority and responsibility for implementing the provisions of this program for:

| | |
|---|---|
| Project Site Location | On-site Contact No. TBD |

All managers and supervisors are responsible for implementing and maintaining the site-specific HASP in their work areas and for answering worker questions about the HASP. A copy of this HASP must be available for review.

# 7.0 IDENTIFICATION OF COMPETENT/QUALIFIED PERSONS

The party performing the work and/or their subcontractors must identify OSHA-regulated and certified competent persons for work or tasks requiring that level of supervision. The field personnel listed below will be assigned to the project and have the designated certifications.

*This section will be updated by the party performing the work prior to the commencement of work at the Site.*

| Name | Job Title | 40-hr HAZWOPER | 8-hr HAZWOPER Supervisor | 8-hr HAZWOPER Refresher Expires | Other training (i.e. excavation, confined space) |
|---|---|---|---|---|---|
| TBD Field | Supervisor | - | - | - | |

Prior to the commencement of any field activities, a competent person will be identified as the Field Supervisor and the person's certifications will be added to the HASP. The supervisor of the competent person must certify in writing the specific competencies of the named competent person.

# 8.0 HAZARD/RISK/EXPOSURE ASSESSMENT

A site-specific risk analysis must be conducted before commencing any investigation and remediation efforts at the site. An example of a site-specific risk review checklist is included as Exhibit 8.1, which must be modified by the Project Manager of the party performing work at the Site. This checklist documents existing exposures that may impact the work, surrounding facilities, equipment, workers, or the public at large. The analysis includes locating, documenting, and/or photographing items such as:

- Overhead and underground power lines;
- Sewer and water utilities;
- Underground fuel oil pipelines;
- Existing building interferences;
- Traffic;
- Security;
- Fences;
- Water hazards;

- Existing geographical and environmental conditions; and
- Investigation Derived Waste (**IDW**) Disposal.

Upon completion of the site-specific risk analysis, personnel must identify and control all work-related hazards and propose controls and mitigation strategies for high-risk activities.

Pre-field work safety activities include a detailed analysis of the scope of work and safety specifications. An example of elements that could be included in a pre-field work safety meeting is presented in Exhibit 8.2.

## Exhibit 8.1 Site-Specific Risk Review Checklist

Date: Project or Location:

| Risk/Hazard | Detail | Present? |
|---|---|---|
| Employee Exposure | Hazardous Chemicals | |
| | Overhead and underground utilities | |
| | Heavy equipment | |
| | Traffic | |
| | | |
| | Airborne contaminants (dust, mists, fumes) | |
| | Other (specify): | |
| Hazardous Waste | Handling, removal or storage of hazardous | |
| Crane Work | Mobile cranes | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Drilling/ Sampling | Drill rig hazards | |
| | Grab Sampling | |
| Electrical | Staging area | |
| | | |
| | | |
| Personal Protective Equipment | Work activities or work site requires hearing protection | |
| | | |
| | Work activities or location requires special protective clothing | |
| Public Exposure | Work activities or location requires special precautions to protect the public | |
| Permits | Required | |
| | Hot permit | |
| Other Exposures | Other exposure or high-risk activities (list): | |
| | | |
| | | |

## Exhibit 8.2 Pre-Field Work Safety Meeting

Notes: _____

_____

Reviewed by:_____ Title: _____ Date:_____

| | |
|---|---|
| Date: | Project/Location: |
| Subcontractor Representative: | Project Manager (Party performing Work): |
| Phone: | Phone: |
| Subcontractor Safety Representative: | Safety Manager (Party performing Work): |
| Phone: | Phone: |

The following items were identified and reviewed:

| **Health & Safety** | |
|---|---|
| Site-Specific Safety Plans/Model Program | |
| Competent/Qualified Person Documentation | |
| Safety Audits/Inspections | |
| Subcontractor Responsibilities | |
| Site Orientation Requirements | |
| Pre-mobilization Safety Meeting/Date | |
| Crane Inspection Certification | |
| Personal Protective Equipment (PPE) | |
| Environmental Hazards | |
| Other: | |
| **Medical** | |
| | |
| Emergency Procedures | |
| Site Security | |
| Smoking Policy | |
| Medical Services Requirements | |
| Treatment Locations/Addresses/Phone | |
| Other | |

Additional Notes/Comments:

_____

_____

_____

# 9.0 CONTROL MEASURES/ACTIVITY HAZARD ANALYSIS

## 9.1 CONTROL MEASURES

Site hazards and hazards resulting from investigation and remediation activities are controlled using one or more of the control measures listed below. The order of precedence is as follows:

### 9.1.1 Engineer/Design to Eliminate or Minimize Hazards

A major component of the design or planning phase is to select appropriate safety features to eliminate a hazard and render it fail-safe or provide redundancy using backup components.

Exclusion Zone

The exclusion zone will be established at the site for each intrusive activity. The zone will be defined by the excavation boundaries. In the field, the zone will be defined by temporary posts/stanchions and caution tape, extending from 10 feet up to the swing radius of the operating equipment in each direction around the intrusive activity. Unprotected onlookers should be located 50 feet upwind of intrusive activities. In the event that action levels are exceeded in the breathing zone, then all personnel in the exclusion zone must stop work, evacuate, evaluate the situation. If the actions levels continue to exceed recommended limits then upgrade the level of personal protective equipment on properly trained and certified crew members to continue work.

Decontamination Zone

A decontamination zone will be established between the exclusion zone and the support zone. This zone will also be delineated utilizing stanchions and caution tape, and will be up to 10 feet wide. Personnel decontamination must take place prior to leaving the decontamination area and prior to entering any personnel hygiene facilities, or before eating, drinking, or smoking. Any decontamination water will be contained for appropriate disposal. Soiled PPE will be removed and placed in drums.

Support Zone

A support zone will be established where break areas, operational direction and support facilities (to include supplies, equipment storage and maintenance areas) will be located. No equipment or personnel will be permitted to enter the support zone from the exclusion zone without passing through the personnel or equipment decontamination zone.

### 9.1.2 Guard the Hazard

Hazards that cannot be eliminated by design must be reduced to an acceptable risk level by safety guards or isolation devices that render them inactive.

### 9.1.3 Provide Warnings

Hazards that cannot be totally eliminated by design or guarding are controlled through using a warning or alarm device.

Exposure/Air Monitoring Program

An environmental and personal monitoring program will be developed based on site-specific information for any future intrusive activity. This plan discusses general information on wind direction monitoring, volatile organic compound (**VOC**) monitoring, and dust monitoring.

Wind Direction Monitoring

A wind direction indicator (such as survey flagging tied to a stake) will be erected at every active work site. This will enable the Site Safety Officer (**SSO**) and on-site personnel to determine upwind locations necessary for proper health and safety procedure implementation, (work areas relative to the excavation) and, if necessary, evacuation procedures.

Volatile Organics Monitoring

Field work at sites with VOC contamination shall use photoionization detector (**PID**) (OVM-580B/580S or equivalent) equipped with a 10.6e V lamp or other monitoring instrument deemed appropriate by the Project Safety Manager (PSM) to monitor VOC concentrations in the working area. Readings detected by the PID or other instrument will be used to determine the appropriate levels of protection. Action levels for some VOCs and particulates that have been previously encountered at the Site are presented in Table 9.1.

Dust Monitoring

If site activities generate sustained (15 minutes), visible dust due to wind erosion of soils, a personal DataRAM meter will be obtained to monitor worker breathing zones for total dust levels. Readings will consider upwind background dust levels, as well as diesel particulate emissions from heavy equipment before upgrades to higher levels of PPE are initiated as shown in Table 9.2.

Community Air Monitoring Plan

Community air monitoring will be conducted in compliance with the NYSDOH's Generic Community Air Monitoring Plan (**CAMP**) which is included as Attachment A. Real-time air monitoring for volatile compounds and particulates at the perimeter of the hot zone will be performed as described below.

VOC Monitoring

Periodic monitoring for VOCs will be conducted during non-intrusive activities such as the collection of soil samples. Periodic monitoring may include obtaining measurements upon

arrival at a location, when overturning soil, and upon leaving the location. In some instances, depending on the proximity of exposed individuals, continuous monitoring may be conducted during these activities.

Continuous monitoring for VOCs will be conducted during all ground intrusive activities (i.e., hand clearing and excavations). Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background concentrations. VOCs will be monitored continuously at the downwind perimeter of the hot zone. Monitoring will be conducted in accordance with Table 9.1.

All 15-minute readings will be recorded and available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, will also be recorded.

Particulate Monitoring

Particulate concentrations will be monitored continuously at the downwind perimeter of the hot zone with a portable real-time particulate monitor capable of measuring particulate matter less than 10 micrometers in size and capable of integrating over a period of 15 minutes (or less). The equipment will include an audible alarm to indicate exceedence of the action level.

Upwind concentrations will be measured at the start of each workday and periodically thereafter in accordance with Table 9.1. All readings will be recorded and be available for NYSDEC and NYSDOH personnel to review.

Calibrations

Field instruments will be calibrated immediately prior to each day's use. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer. Records of all instrument calibration and instrument manuals will be maintained on-site.

A battery check must be completed at the beginning and end of each working day.

### 9.1.4 Provide Special Procedures or Training

When design, guarding, or warnings cannot eliminate hazards, the party performing the work and their subcontractors must develop procedures, training, and audits to ensure safe completion of work. Training cannot be a substitute for hazard elimination when life threatening hazards are present.

Decontamination Procedure

Level D or Modified Level D protection will be worn for initial entry on-site and initially for all activities. If air concentrations exceed action levels, workers will employ engineering controls first before upgrading the level of protection. Personal decontamination may be necessary for activities involving the use of Modified Level D, Level C, or Level B PPE.

Table 9.2 includes the proper decontamination procedures that must be implemented if chemical contamination present and PPE protection greater than level D is used. The Project Safety Manager will determine the proper procedures for decontamination based on the work activities and amount of contamination.

Disposable wet towels will be provided in the decontamination zone for personnel hand/face washing.

Soil / Water / Waste Management

Procedures will be implemented regarding the management of soil, water, and waste to minimize the likelihood of unacceptable release of hazardous constituents. These procedures include:

- TBD
- TBD.
- Under no circumstances is waste to leave the Site prior to characterization and subsequent disposal of waste coordinated by the party performing the work or their subcontractor.

Provide Personal Protective Equipment

To protect workers from injury, the last method in the order of precedence is the use of personal protective equipment, such as hard hats, gloves, eye protection, and other protective equipment with the understanding that bulky, cumbersome, and heavy personal protective equipment is often discarded or not used, rendering this method ineffective without proper controls. If emergency eyewash stations are required, then they must be kept accessible at all times and be maintained to prevent from freezing. In the event that personal protective equipment is ripped or torn, work shall stop immediately and PPE shall be removed and replaced as soon as possible.

PPE Selection

The selection and use of PPE at individual sites will be initially Level D unless specified by the Project Safety Manager. The unknown nature of hazardous waste site work and the possibility of changing conditions during the work may require changes in the personal protective equipment. When changes in personal protective equipment become necessary, these changes shall be made in accordance with the action levels and criteria set forth in this plan. As a rule, levels of PPE will need to be reassessed if any of the following occur:

- Appearance of previously unidentified or anticipated chemical conditions or task hazards (this may require a HASP Addendum for the responsible party's review and acceptance prior to proceeding).
- Ambient weather conditions change which impact the use of assigned PPE.

- A new task is introduced or a previously assigned and evaluated task is expanded in scope.

If work tasks are added to the Scope of Work (**SOW**) after approval of this HASP, the Project Safety Manager shall identify and assess the task hazards, complete and sign an Activity Hazards Analysis (**AHA**) form and designate the level and type of PPE to be used during conduct of the task. The new AHA, along with any other additions, changes or modifications to the approved HASP shall be approved by the PSM and/or the Project Manager. Subsequently, these modifications, resulting in a HASP Addendum, shall be reviewed and accepted by the responsible party's representative prior to proceeding.

Initially at portions of the site, where NAPL may be encountered based on Site Investigation data, work will start in Modified Level D. In the remaining areas of the site, PPE level will be upgraded to Modified Level D, if NAPL is encountered. This includes tyvek coveralls, in addition to safety glasses with permanent side shields, steel toe boots, hearing protection (e.g. when working within 15 feet of vacuum excavation equipment, excavator, drill rig, sawing, or jack hammering), metatarsal foot protectors (when sawing, jack hammering, or pressure washing), long pants or jeans, traffic safety vests (when working on streets, sidewalks, parking lots, or driveways), , short or long sleeve shirts, nitrile outer and PVC inner gloves (required during all sampling activities), and hard hat (cannot be blue or white). Required equipment for Levels B, C, and D are detailed in Table 9.2, Description of Personal Protective

Equipment and Levels of Protection

The organic vapor monitor and dust monitor will be the primary instruments for determining contaminant concentrations that may trigger a change in respiratory protection during intrusive and sampling activities. Other instruments such as Draeger tubes, and/or other particulate air monitors may also trigger changes in PPE. Action levels for changes in personal protection equipment are shown in Table 9.1.

OSHA Requirements for Personal Protective Equipment

All personal protective equipment must meet the following OSHA standards:

| **Type of Protection** | **Regulation** | **Source*** |
|---|---|---|
| Eye and Face | 29 CFR 1910.133<br>29 CFR 1926.102 | ANSI Z87.1-1968 |
| Respiratory | 29 CFR 1910.134<br>29 CFR 1926.103 | ANSI Z88.1-1980 |
| Head | 29 CFR 1910.135<br>29 CFR 1926.100 | ANSI Z89.1-1969 |
| Foot | 29 CFR 1910.136<br>29 CFR 1926.96 | ANSI Z41.1-1967 |

*ANSI = American National Standards Institute

Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134). In addition, if Level C protection is required, a cartridge change-out schedule must be developed. HEPA filters will be the only cartridges used. Medical qualification, training and fit-testing must be received on an annual basis. If a respirator is worn more than 30 days per year, participation in a Medical Surveillance Program is required.

## 9.2 ACTIVITY HAZARD ANALYSIS

The party performing the work and their subcontractors are required to conduct an AHA for all aspects of the work. The activity hazards analyses consist of the following three steps:

- Identify the task and break it down into steps.
- Identify the hazards associated with each step.
- Identify the specific hazard control measure used for each step in accordance with the order-of-precedence method of control.

The U.S. Army Corp of Engineers wesite (www.swl.usace.mil/safety/asaindex.html) contains a library of sample AHAs that may be useful. The Project Managers may use the following list as a guide in determining the investigation and remediation activity hazards analyses for various high-hazard operations and critical tasks.

- **Pre-mobilization Inspection.** Conduct an initial site inspection for pre-job planning. The inspection should cover potential exposures such as the location of electrical lines, underground utilities, nearby structures, traffic conditions, site security needs, public exposures general liability, and other potential exposures.
- **Traffic Controls.** Control measures include warning signs, flagmen, traffic stoppage and control, and unloading procedures. Internal traffic control plans should include ways to restrict the number of vehicles on site, the flow of vehicles accessing the site and driving through the site, merging of site traffic with local vehicle traffic, pedestrian controls in traffic zones, access by emergency and rescue vehicles and operator controls.
- **Vehicle Operation.** Although driving a vehicle may be second nature to many individuals, there are many hazards and controls that need to be identified. Fatigue and distractions are two hazards that many individuals do not think about on a regular basis. **Field Activities.** Many different types of activities occur in the field from excavations, soil sampling, and monitoring. A variety of hazards could be incurred with each activity such as biological, slip/trips/falls and lacerations. An activity hazard analysis is required for each different field activity to identify the hazards and controls.

- **Field Visit.** When a field visit occurs, it may be before any field activities are taking place. However, there may still be hazards present such as walking or driving in fields with uneven terrain, etc. Although personal protective equipment such as a hard hat and safety glasses may not be needed, sturdy work boots, long pants, and sunscreen may be necessary.

- **Mobilization/Demobilization.** Conduct an initial site inspection for pre-job planning. The inspection should cover potential exposures such as the location of electrical lines, underground utilities, nearby structures, traffic conditions, site security needs, public exposures general liability, and other potential exposures.

- **Heavy equipment controls.** Evaluate the use of heavy equipment in operations such as site clearing, grading, drilling and excavation or lifting. Controls should include equipment alarms, use of qualified operators, pre-use inspections, and any specific OSHA regulatory requirements.

- **Personal protective equipment (PPE).** Consider operations where PPE is required and the type of PPE required (e.g., eye, head, foot, respiratory, hearing and hand protection, and types of special protective clothing – Tyvek coveralls).

- **Portable hand and power tools.** Evaluate the tools to be used and the ways thatworkers are protected from the hazards associated with the use of tools. Consider tool maintenance requirements; electrical requirements; the use of ground fault circuit interrupters, grounding, extension cords, and tool inspection procedures; and employee training and PPE requirements.

- **Employee training.** Always review the safety training needs of employees. Training should include initial site safety orientations. Some operations (e.g.,HAZWOPER activities, excavation, confined space, and operating heavy equipment) may require special training that must be checked and evaluated.

Exhibit 9.1 is a sample activity hazards analysis form. Exhibit 9.2 shows a training record to be completed and kept on file for each activity hazards analysis. AHAs can be found in Attachment B. The intent of an AHA is to identify the steps, hazards, and control measures involved with performing a specific task. The attached AHAs are not inclusive of all activities that may be performed at the site, and may not include all of the steps, hazards or control measures required to safely complete a task. Any individual given a work assignment shall review the corresponding AHA prior to commencing work activities to determine whether the AHA needs to be modified for site specific conditions, or if an additional AHA should be developed.

**Table 9.1 Regulatory Levels for Common Air Contaminants**

| Contaminant | OSHA PEL* | Monitoring Instrument | Action Level | Action Taken *(Refer to MSDSs for required actions and develop SOPs for required actions)* |
|---|---|---|---|---|
| Carbon Monoxide | 50 ppm | 4-gas meter, CO meter | >50 ppm | Refer to MSDS for required actions and develop SOPs for required actions. |
| Combustible Gas | 10% | 4-gas meter, LEL meter | >10% | Refer to MSDS for required actions and develop SOPs for required actions. |
| Dust# | 5mg/$m^3$ | DataRAM | <1 mg/$m^3$ | None |
| | | | 1-5 mg/$m^3$ | Implement engineering controls to suppress or control dust. |
| | | | >5 mg/$m^3$ | Continue dust suppression and stop work activities. |
| Oxygen | 20.9% | 4-gas meter, O2 meter | <19.5% | Refer to MSDS for required actions and develop SOPs for required actions |
| | | | 19.5-23.5% | Normal. |
| | | | >23.5% | Refer to MSDS for required actions and develop SOPs for required actions |
| VOCs# | n/a | Photoionization Detector | < 1 ppm | None. |
| | | | 1 - 5 ppm | Implement engineering controls to suppress vapor levels. Monitor for specific contaminants. |
| | | | 6 - 10 ppm | Take 3 consecutive readings. If confirmed,wear half or full face piece respirator. Implement engineering controls to suppress vapor levels. |
| | | | 11 - 50 ppm | Take 3 consecutive readings. If confirmed,wear full face piece respirator. Continue engineering controls to suppress mercury levels. |
| | | | > 50 ppm | Stop work activities. Take 3 consecutive readings to confirm. If trained and fit tested, don supplied air respirator. |

Note: All readings that will be used to determine the appropriateness of an upgrade in PPE shall be taken in theworker's breathing zone. PID readings shall be sustained readings of 15 minutes or more. Multi-gas meter readings shall be 30 second sampling periods with the meter held in the worker's breathing zone. Readings will be taken at the beginning of the day, changes in work activities and during all sampling activities.

* The OSHA PEL levels are current as of December 2008. OSHA constantly reviews and updates these levels. The party performing the work shall review 29 CFR 1910.1000 Table Z-1 and update the levels, as necessary, prior to performing work.

# The action levels and the actions taken for VOCs and for dust provided in this table are based on NYSDOH Generic Community Air Monitoring Plan (CAMP) (December 2002). The party performing the work shall review NYSDEC DER-10 to verify whether updates have been made to the Generic CAMP. For employee safety, OSHA regulation 1910 should be consulted.

**Table 9.2 Description of Personal Protective Equipment and Levels of Protection**

| Level | Description | PPE |
|---|---|---|
| **Level D** | Level D protection will be worn for initial entry on-site and for all activities unless otherwise noted by the PSM. | – Standard work clothes;<br>– Steel-toe safety boots;<br>– Safety glasses (goggles must be worn when splash hazard is present);<br>– Hearing protection (when working within 25 feet of vacuum excavation;equipment, excavators, drill rigs, sawing, or jack hammering);<br>– Metatarsal foot protectors (when sawing, jack hammering, or pressure washing);<br>– Traffic safety vests (when working on streets, sidewalks, parking lots, and driveways)<br>– Nitrile outer gloves and latex or nitrile inner gloves (sampling operations);<br>– Hard hat (must be worn during all site activities and cannot be blue or white); and<br>– |
| **Modified Level D** | Modified Level D protection, unless otherwise specified by the PSM, will consist ofLevel D equipment and the following additional equipment: | – Nitrile outer gloves and latex or nitrile inner;<br>– Tyvek coveralls if particulate hazards only are present; and poly-coated Tyvek overalls if liquid hazards are present. |
| **Level C** | Requirements for Level C protection is described in OSHA regulation 29 CFR 1910.134. Generally, Level C protection, unless otherwise specified by the SSO, will consist of Level D equipment and the following additional equipment: | – Full-face air-purifying respirator;<br>– Combination HEPA filter (P100)/organic vapor cartridges;<br>– Tyvek coveralls if particulate hazards only are present, poly-coated Tyvek coveralls if liquid hazards are present; and<br>– PVC or nitrile inner and nitrile outer gloves. |
| **Level B** | Requirements for Level B protection is described in OSHA regulation 29 CFR 1910.134. If the concentration of volatile organics or cyanide equals or exceeds the specified action levels, all field personnel associated with the project will immediately retreat to a location up-wind of the source of contamination. At this point the SSO must consult with the responsible party to discuss appropriate actions. | |

## Exhibit 9.1 Activity Hazards Analysis Form

**Page____ of _____**

| | | | |
|---|---|---|---|
| **Project Name & Number:** | **AHA No.** | **Date** | **New:** |
| **Location:** | **Contractor:** | | **Revised:** |
| **Required Personal Protective Equipment** | | **Analysis by:** | **Date:** |
| **Superintendent/Competent Person** | | **Reviewed by:** | **Date:** |
| **Work Operation:** | | **Approved by:** | **Date:** |
| **Work Activity** | **Potential Hazards** | **Preventive or Corrective Measures** | **Inspection Requirements** |
| | | | |
| | | | |
| | | | |
| | | | |

**Training Requirements:** All assigned employees are required to familiarize themselves with the contents of this AHA before starting a work activity and review it with their Supervisor during their Daily Safety Huddle.

## Exhibit 9.2 Activity Hazards Analysis Training Record

JOB NUMBER _____
AHA NUMBER _____
JOB LOCATION _____
DATE: _____
NAME OF TRAINER: _____
SUBJECTS COVERED: _____

TRAINING AIDS USED: _____

ATTENDEES (PLEASE SIGN NAME LEGIBLY):

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(Use additional sheets if necessary)

# 10.0 PERIODIC SAFETY INSPECTIONS/AUDITS

The PSM will implement an audit and inspection program. The Project Manager, PSM, or their designee, will conduct monthly safety inspections. The site inspection is a protocol designed to identify and correct unsafe acts and conditions, as well as recognize safe work practices and accomplishments in the party performing the work or their subcontractors' scope of work. The Project Manager or PSM should develop standard safety checklists appropriate to the work being performed. Exhibit 10.1 is an example of a simple checklist to evaluate a project's status, and should be modified to address potential unsafe acts and conditions specific to work activities occurring at the Site.

Inspections involve a daily or weekly site walk of a project site that focuses on safety. The Project Manager or Field Team Leader (**FTL**) responsible for the work conducts inspections, accompanied by the PSM as necessary. Daily site walks do not have to be documented, but once a week the Project Manager, or designee, prepares an inspection report and forwards it to the PSM for maintaining in the project file. Items found to be out of compliance must be assigned to the responsible party for corrective action and the corrective action tracked to completion.

## Exhibit 10.1 Site Safety and Health Inspection Checklist

Project: _____ Date: _____
Name: _____ Time:_____

Any items that have been found deficient must be corrected before work or use.

This checklist includes, but is not limited to, the following:

| **Safe Access and Workspace** | | **Yes** | **No** |
|---|---|---|---|
| Are safe access and adequate space for movement available for: | | | |
| Emergencies | | | |
| Work area | | | |
| Walkways and passageways | | | |
| Are ladders, stairways, and elevators properly located and functioning? | | | |
| Is protection provided for floor and roof openings? | | | |
| Is overhead protection provided for all areas of exposure? | | | |
| Is lighting adequate? | | | |
| Planning Work for Safety | | | |
| Are employees provided with all required protective equipment? | | | |
| Have other contractors and trades been coordinated with to prevent congestion and avoid hazards? | | | |
| Is all temporary flooring, safety nets, and scaffolding provided where required? | | | |
| **Utilities and Services Identification** | | | |
| High voltage lines | | | |
| Have all been identified by signs? | | | |
| Have high voltage lines been moved or de-energized, or barriers erected to prevent employee contact? | | | |
| **Sanitary Facilities** | | | |
| Drinking water | | | |
| Are toilet facilities adequate? | | | |
| **Work Procedures – Materials Handling** | | | |
| Is material handling space adequate? | | | |
| Is material handling equipment adequate and proper? | | | |
| Is material handling equipment in good condition? | | | |
| **Marine Safety** | | | |
| Slip, trip, fall hazards | Muscle strain from improper lifting | | |
| Heat or cold stress | Pinch points | | |
| Insect bites | Inhaling, touching, ingesting contaminants | | |
| Waves, surges, currents | | | |
| Noise exposure | Drowning | | |
| Other (e.g., tunnels, excavations, shafts | | | |

Comments:

_____

_____

# 11.0 COMPLIANCE REQUIREMENTS POLICY

The party performing the work and their subcontractors must enforce all applicable requirements of OSHA 1910 and 1926, where applicable. The party performing the work at the Site in the future and their subcontractors are individually responsible for training their respective employees and for complying with all project requirements. In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite (i.e. 4 minutes for activities that can be expected to result in an accident involving suffocation, severe bleeding, or other life threatening or permanently disabling injury or illness and 15 minutes for other types of injuries), which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the worksite to render first aid. First-aid supplies must be accessible for immediate use and be of sufficient size and number to handle common first aid incidents.

The response time and distance to the nearest clinic, hospital or physician identified in Section 20 has been determined to be 3 minutes; however this may vary depending traffic. Since the response time for Emergency Medical Services (**EMS**) may be greater than four minutes if traffic conditions are not favorable, any future project at the Site that has the potential for an accident involving suffocation, severe bleeding, or other medical emergencies or permanently disabling injury or illness will require at least one individual at the work location have a valid certificate in CPR and first aid. Exhibit 11.1 represents OSHA regulations and requirements applicable to the project.

**Exhibit 11.1 Competent Person and Activity Hazards Analysis Requirements**

| Safety and Health Requirement | OSHA Regulation | Competent Qualified Person-Supv | Training Required | Written Plan and AHA Required |
|---|---|---|---|---|
| General Safety & Health | 1926.20 | | | |
| Safety Training | 1926.21 | | | |
| First Aid and Medical | 1926.23, 50 | | | |
| Emergency Employee Action Plans | 1926.35 | | | |
| Hazard Communication | 1926.59 | | | |
| Hazardous Waste Operations and Emergency Response | 1910.120; 1926.65 | | | |
| Waste Disposal | 1926.252 | | | |
| Excavations | 1926.650-652 | | | |

## 12.0 WRITTEN PROGRESSIVE DISCIPLINARY PROGRAM

Items found to be out of compliance must be assigned to the responsible party for corrective action and the corrective action tracked to completion. The project has a formal notice of subcontractor violation of safety and health regulations program to ensure that violations are issued in an immediately dangerous to life and health (**IDLH**) situation or when the subcontractor repeatedly fails to comply with safety and health requirements. Any noncompliance items must be advised to the responsible party using a Notice of Violation, included as Exhibit 12.1. The notice (Exhibit 12.1) documents poor performance and requires a response from subcontractor senior management. The notice contains five distinct levels of discipline, from submission of a recovery plan to contract termination.

## Exhibit 12.1 Notice of Violation of Safety and Health Regulations

Date _____

Contractor Name _____

Address _____

_____

_____

Attention _____

This letter officially notifies you that you have been found to be in violation(s) of the following Safety Regulations:

on (date): _____ by, _____

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Confined Space Entry | ____ | Lockout/Tagout | ____ | Hot Work | _____ | Personal Protective Equipment | ____ |
| Knowledge of the Environment | ____ | Awareness of Wanring Alarms | ____ | Evaculation Routes | _____ | Back-up Alarms | ____ |
| Assembly Locations | ____ | Fall Protection | ____ | Scaffolding | _____ | Environmental/Hazardous Material Storage | ____ |
| SafeWrok Practices | ____ | Security Practices | ____ | | | | |

Other: _____

This/These violation(s) occurred at the following location(s): _____

at the following time(s): _____ and date(s): _____

The name(s) of the employee(s) was/were: _____

under the supervision of: _____

# 13.0 HAZARD CORRECTION POLICY

Potential hazards that may be encountered during intrusive activities at the Site are listed below, but the list is not all-inclusive.

## 13.1 CHEMICAL HAZARDS

Health hazards and the exposure limits associated with potential chemicals of concern are presented in Table 13.1. These hazards can be encountered during subsurface and intrusive investigation in and around the Site. Both real time breathing zone air-monitoring and CAMP monitoring, using a photoionization detector, and a dust monitor should be performed by the responsible field investigator. The real time data will be recorded in the field book by the field investigator/SSO, following each observation, during intrusive activities and sampling activities. CAMP monitoring data will be downloaded daily and kept as an electronic file.

## 13.2 PHYSICAL HAZARDS

Physical hazards that may be encountered include but are not limited to heat stress, cold related illness, ultra-violet radiation, working on or adjacent to a waterway, and noise hazards.

### 13.2.1 Heat Stress:

Heat stress is one of the most common (and potentially serious) illnesses that affect field personnel. When site personnel are engaged in operations involving hot environments, a number of physiological responses can occur which may seriously affect the health and safety of the workers. Heat stress can result in health effects ranging from transient heat fatigue to serious illness or death. Heat stress can be eliminated or controlled through the use of a omprehensive heat stress prevention and monitoring program.

Training shall be provided to all employees to recognize heat illness hazards before starting to work outdoors. Any employee experiencing or witnessing signs and/or symptoms of a heat related illness shall report the findings to their supervisor immediately. Supervisors shall understand the procedures to follow when an employee exhibits symptoms consistent with heat illness, including emergency response.

### 13.2.2 Definitions

Acclimatization - a temporary adaption of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within 4-14 days of regular work for at least 2 hours per day in the heat.

Environmental Risk Factors - working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, and personal protective equipment worn by employees.

**Table 13.1 Relevant Properties of Known or Suspected Volatiles and Semivolatiles**

| Compound (synonym) | OSHA PEL(1) (ppm) | IDLH (ppm) | LEL (%) | Odor Threshold(2) (ppm) | Odor Character | Vapor Pressue (mm Hg) | Pysical State | Detectible w/ 10.6 eV lamp PID (I.P. eV) |
|---|---|---|---|---|---|---|---|---|
| Benzene | 1<br>5<br>[STEL] | 500<br>[Ca] | 1.2 | 119 | Aromatic, sweet | 75 | Flammable Liquid | Yes (9.24) |
| o-,m-, p- Xylenes | 100<br>150<br>[STEL] | 900 | 0.9 | 20 | Aromatic | 7,9,9 | Flammable Liquid Vapor | Yes (8.4-8.6) |
| Toluene | 200<br>300<br>[CEIL] | 500 | 1.1 | 37 | Sweet, pungent Benzene-like | 20 | Flammable Liquid Vapor | Yes (8.82) |
| Ethyl Benzene | 100<br>125<br>[TLV-STEL] | 800 | 0.8 | 0.8 | Oily Solvent | 10 | Flammable Liquid | Yes (8.76) |
| Hydrogen Sulfide | 10 | 100 | 4 | 0.8 | Rotten Egg | 17.6 | Flammable Liquid | No(3) |
| Naphthalene | 15<br>[TLV-STEL] | 250 | 0.9 | 0.64 | Mothballs/ Tar/Creosote | 0.08 | Combustible Solid | Yes (8.2) |
| Polunuclear Aromatic Hydrocarbons (PAH's) | 0.2 $mg/m^3$<br>[CA] | 80 $mg/m^3$ | Varies | Varies | Varies | Very low | Combustible Solid | No |
| Cyanide | 5.0 $mg/m^3$ | 50 | 5.5 | 5 | Bitter almond | 630 | Flammable Liquid | No Draeger Tube (13.6) |

(1) 29 CFR 1910, June 30, 1993 (8-hour Time weighted average unless otherwise specified.). These values may be modified by OSHA. The
values should be checked and updated, as necessary, prior to commencing work activities.
(2) ACGIH 1989 Highest reported value of acceptable odor threshold range. These values may be modified by ACGIH. The values should be
checked and updated, as necessary, prior to commencing work activities.
(3) For hydrogen sulfide detection, a gas meter with hydrogen sulfide detection capability could be used.
[IDLH] Immediately dangerous to life or health.
[CA] Suspected carcinogen - Minimize all possible exposures.
[STEL] 15 minute Short Term Exposure Limit
[SKIN] Designates that skin is an important possible route of exposure.
[CEIL] Ceiling Limit - not to de exceeded at any time during a work day.
[TLV] Threshold Limit Value.

Heat Illness - a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

Heat Wave - a sudden and temporary rise of temperature above the seasonal average for a particular region, which lasts for a prolonged period of time. A heat wave can greatly increase the risk of heat related illnesses.

Personal Risk Factors - an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

Preventive Recovery Period - a period of time to recover from the heat in order to prevent heat illness.

Shade - blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

### 13.2.3 Signs and Symptoms of Heat Illnesses

Heat Rash – or prickly heat, occurs in hot and humid environments where sweat is notremoved from the skin. Usually disappears when worker returns to cool environment.

Heat Cramps – muscle contractions from the loss of fluids /electrolytes due to sweating. Occurs when workers perform hard physical labor in a hot environment. Most common in the arms and legs. Cramping can occur after work has stopped.

Heat Exhaustion – inadequate blood circulation from stress due to constant heat. The whole body, especially the circulatory system, is extremely stressed. Possible symptoms include: pale, flushed face and neck; clammy skin; heavy sweating; fatigue; shortness of breath; headache; dizziness or fainting; nausea and vomiting; and rapid heartbeat and breathing.

Heat Stroke – body's failure to regulate its' temperature. The most serious stage of heat illness. Symptoms include: dizziness and confusion, red, hot, dry skin; nausea and vomiting; very little sweating; rapid pulse; high body temperature, 105° F or higher; convulsions, and fainting.

### 13.2.4 Heat Illness Prevention

Prevention of heat related illness in extreme temperature project personnel shall consider implement a Physiological monitoring program, include monitoring with a WBGT and implementing work rest regiments. The field team shall be encouraged to drink plenty of liquids

to replenish electrolytes. The field team shall also, construct a shaded rest area for workers to take breaks.

Prevention of heat related illness may call for establishing work teams to rotate to minimize heat related illnesses.

### 13.2.5 Heat Illness Treatment

Heat Cramps - take water every 15 to 20 minutes. Drinking an electrolyte replacement (like Gatorade) may help.

Heat exhaustion - Get medical help. Don't leave the person alone. While waiting, remove worker to cool place to rest; remove as much clothing as possible; give water and electrolytes; and don't allow person to get chilled.

Heat Stroke – Call 911 immediately. While awaiting medical help, get victim into cool area, fan vigorously, apply cool water to clothing or skin, and apply ice packs under arms and to the groin area.

### 13.2.6 Heat Waves

Heat illness prevention during heat waves means taking extra measures. More vigilance - supervisors/employees watch others very closely and provide more frequent feedback during work activities. Site workers shall avoid working alone and utilize the "Buddy System", watch each other and closely monitor/report an employees' condition. Personnel shall be accounted for their whereabouts throughout the work shift and at the end of the day.

More water - employees should drink small quantities of water more frequently before, during and after work. There should be extra supplies of water for replenishment, encourage employees to consult with their doctor on salt/mineral replacement.

More cooling - use other cooling measures in addition to shade, spraying body with water/wiping with wet towels and taking additional/longer breaks in the shade.

Change schedule - work activities may be started earlier on later in the evening, split-up work shifts and avoid working during the hotter parts of the day. Work shifts can be cut short or stop work.

Change meals - encourage employees to eat smaller/or more frequent meals (less body heat during digestion than with big meals), choose foods with higher water content (for example, fruits, vegetables and salads).

Acclimatization warning - personnel should allow the body time to adjust to sudden, abnormally high temperatures or other extreme conditions. Even employees previously fully acclimatized are at risk for heat illness.

### 13.2.7 Environmental and Physiological Factors

- Average ambient air temperature 96ºF (75-116ºF)
- Average humidity 29% (12% - 55%)
- Average wind speed 7 mph
- Average core body temperature 104ºF (98 -108ºF)

### 13.2.8 Provision of Water

Sufficient amounts of cool water shall be available and replenished at all times w/at least one quart per employee per hour for the entire shift. Easy access to clean and cool water shall be available to encourage frequent drinking.

### 13.2.9 Access to Shade

A Preventative Recovery Period (**PRP**) is necessary if an employee is suffering from heatillness or believes that a rest break is needed to recover from the heat. Access to shade shall be permitted at all times. Employees shall have access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than 5 minutes.

### 13.2.10 Measurement

Portable heat stress meters or monitors are used to measure heat conditions. These instruments can calculate both the indoor and outdoor WBGT Index according to established ACGIH Threshold Limit Value equations. With this information and information on the type of work being performed, heat stress meters can determine how long a person can safely work or remain in a particular hot environment.

### 13.2.11 Cold-Related Illness

Cold weather conditions can be hazardous to the safety and health of employees, endanger the stability of the body system, and cause conditions such as hypothermia and frostbite. It is vitally important that adequate precautions be taken to alleviate the effect of cold environments and to ensure that personnel can work safely and efficiently.

Prevent the deep body temperature from dropping below $36^0$ C ($96.8^0$ F) and the core temperature from dropping below $35^0$C ($95^0$F).

The following factors may contribute to a cold injury:

- Age
- Contact with wetness or metal
- Exposure to high winds
- Exposure to humidity
- General health
- Inadequate clothing

The following physical conditions worsen the effects of cold exposure:

- Allergies
- Excessive drinking
- Excessive smoking
- Specific drugs and medicines
- Vascular disease (e.g., Raynaud's phenomenon, acrocyanosis)

To monitor cold stress:

- At air temperatures below 20F (-10C) measure and record the wind chill index at least every 4 hours. The equivalent wind chill temperature and frostbite precautions will be determined using the Wind Chill Index (Table 13.2).

**Table 13.2 Wind Chill Index**

| Estimated Wind Speed (mph) | Actual Temperature Reading (°F) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| | Equivalent Chill Temperature (°F) | | | | | | | | | | | |
| calm | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| 5 | 48 | 37 | 27 | 16 | 6 | -5 | -15 | -26 | -36 | -47 | -57 | -68 |
| 10 | 40 | 28 | 16 | 4 | -9 | -24 | -33 | -46 | -58 | -70 | -83 | -95 |
| 15 | 36 | 22 | 9 | -5 | -18 | -32 | -45 | -58 | -72 | -85 | -99 | -112 |
| 20 | 32 | 18 | 4 | -10 | -25 | -39 | -53 | -67 | -82 | -96 | -110 | -121 |
| 25 | 30 | 16 | 0 | -15 | -29 | -44 | -59 | -74 | -88 | -104 | -118 | -133 |
| 30 | 28 | 13 | -2 | -18 | -33 | -48 | -63 | -79 | -94 | -109 | -125 | -140 |
| 35 | 27 | 11 | -4 | -20 | -35 | -51 | -67 | -82 | -98 | -113 | -129 | -145 |
| 40 | 26 | 10 | -6 | -21 | -37 | -53 | -69 | -85 | -100 | -116 | -132 | -148 |
| Wind Speeds greater than 40 mph have little additional effect | LITTLE DANGER in < 1 hr with dry skin. Maximium danger of false sense of security. | | | | INCREASING DANGER danger of freezing exposed flesh within 1 minute. | | | GREAT DANGER flesh may freeze within 30 seconds. | | | | |

- In outdoor workplaces, measure and record the wind speed at least every 4 hours when the rate of air movement exceeds 5 mph (2.2 meters per second)

- The wind chill index takes into account the wind velocity. If no anemometer is available, use the following to estimate wind speed:
  - 5 mph: light flag moves
  - 10 mph: light flag fully extended
  - 15 mph: raises newspaper sheet
  - 20 mph: causes blowing and drifting snow

To prevent cold stress:

- Use general or spot heating to increase temperature at the site.

- If work is being performed with bare hands for 10 or more minutes, to keep the worker's hands warm supply warm air jets, radiant heaters, or contact warm heaters.
- If the air velocity at the site is increased by the wind, draft, or ventilation equipment, shield the work area.
- At temperatures below $40^0$F, cover metal handles of tools and control bars with thermal insulation.
- When necessary, substitute, isolate, relocate, or redesign equipment and processes to reduce cold stress.
- Use power tools, hoists, cranes, and lifting aids to reduce the metabolic work load.
- If work is performed continuously in an equivalent chill temperature of $30^0$F or below, supply heated warming shelters such as tents, automobiles, or trucks and encourage workers to use them.

### 13.2.12 Electrocution

All drilling and excavation equipment will be kept a safe distance from live sources of electricity. Drill rods and other metal objects will not be raised above the height of the rig. The length of drill rods will be less than the distance to the nearest live electrical source so ifthe drill string is dropped it cannot fall across electrified equipment. All subsurface and overhead electrical sources and lines will be identified before digging, drilling, or sampling activities commence. Where possible and/or practical, electric lines and sources will be deactivated or insulated before digging, drilling, or sampling activities are commenced.

### 13.2.13 Ultraviolet Radiation

The sun emits ultraviolet radiation (**UV**) as heat and light. The skin's natural defense mechanisms attempt to reject the UV by distributing melanin pigmentation where needed. However, overexposure to direct sunlight can cause inflammation or blistering of the skin (sunburn). The use of sunscreen, long sleeve shirts, and wide brim hats can help prevent sunburn. Chronic exposure to UV radiation is known to cause skin cancer. In case of sunburn, do not apply burn ointment, cold cream, or butter to relieve pain. Use a dry dressing and get medical attention for severe, extensive sunburns.

### 13.2.14 Noise

Operating heavy equipment can be a potential noise source. Hearing protection will be worn by personnel operating heavy equipment, or other personnel in close proximity (e.g. 25 feet) to the equipment. If the noise level exceeds 85 decibels over an 8-hour time weighted average, then exposed personnel must be enrolled in a Hearing Conservation Program.

## 13.3 BIOLOGICAL HAZARDS

Biological hazards can result from encounters with mammals, insects, spiders, ticks, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection or infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Ticks carry a number of serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. Most of the field activities will occur in a densely populated area; however, the possibility of encountering biological hazards still exists.

### 13.3.1 Ticks

Ticks may be common during the spring and summer. Two types of ticks may be encountered: the dog tick and the deer tick. The dog tick is the larger, more common tick. After biting, the dog tick will remain attached to the victim until engorged with blood. Dog ticks may transmit rocky mountain spotted fever and other diseases. The deer tick is much smaller, ranging from poppy seed to grape seed size, and does not remain attached to the skin for very long after biting. Deer ticks can transmit Lyme disease, which can have serious, long-term health effects if left untreated. Lyme disease is characterized by a bulls-eye type rash; light in the center with an outer red area. Flu-like symptoms may also occur. These signs may occur at different times and the rash may not appear. If you discover any bites on the skin, wash the affected area and seek medical attention if a rash or flu-like symptoms appear.

### 13.3.2 Bees, Wasps, Hornets, and Other Insects

Symptoms of an insect bite are normally a sharp, immediate pain in the body part bitten. Poisonous insects and insect-like creatures that may be encountered at the Site include the following:

- Bees (honeybees, bumble bees, wasps, and hornets);
- Caterpillars; and
- Beetles/Bugs

### 13.3.3 Spiders:

The two poisonous spiders that may be encountered at the Site are the Brown Recluse and the Black Widow. The Brown Recluse is up to one inch long with a violin or “fiddle” shaped mark on the top of the head. The Black Widow is a smaller, bulbous black spider with a red hourglass-shaped mark on the underside.

Reactions to a Brown Recluse spider bite include mild to severe pain within two to eight hours and a star shaped area around the bite within three to four days. Significant tissue death and loss accompanies a Brown Recluse spider bite. Reactions to a Black Widow spider include intense pain at the site of the bite after approximately 15 to 60 minutes, followed by profuse

sweating, rigid abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils, and generalized swelling of face and extremities.

Persons that have been bitten by a Brown Recluse or Black Widow spider should be immediately transported to a hospital. The spider should be collected (if possible) for confirmation of the species.

### 13.3.4 Bloodborne Pathogens

Bloodborne pathogens include human immunodeficiency virus (**HIV**), hepatitis B virus (**HBV**), hepatitis C virus (**HCV**), and others. All occupational exposure to blood or other potentially infectious materials (**OPIM**) place workers at risk for infection with bloodborne pathogens. OSHA defines blood to mean human blood, human blood components, and products made from human blood. Other potentially infectious materials means: (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Understanding simple precautions can greatly minimize your chances of contracting a bloodborne disease. Practicing universal (standard) precautions refers to assuming that any and all blood or body fluids are contaminated and taking all safety measures to avoid transmission of a disease. Properly cover open cuts and skin abrasions. Never eat, drink, store food, smoke, handle contact lenses or apply cosmetics or lip balm in potential exposure areas. Wash hands and exposed skin immediately after an exposure incident, and after removing gloves. Utilize engineering controls to reduce exposure to bloodborne pathogens by removing, eliminating or isolating the hazard. Wear gloves, eye/face protection and mask when working with blood or a splash potential. Check gloves for tears, holes or punctures, and remove immediately when penetrated. Clean up spills and body fluids by carefully covering with a paper towel, gently pouring a 10% bleach solution over towels, and leaving it in place for 10 minutes. Use mechanical means, not your hands to pick up broken glass that is tainted with blood. Dispose of blood products, medical waste, gloves and equipment in properly labeled and approved biohazard containers. Clean wounds with soap and water. Flush eyes and mucous membranes with water or normal saline solution. Notify the site safety representative or your supervisor immediately and complete an incident report.

## 13.4 ENVIRONMENTAL HAZARDS

### 13.4.1 Slip, Trip, and Fall Hazards

Site workers may encounter slip, trip, and fall hazards due to uneven surfaces at sidewalk/pavement interfaces and obstructions protruding from the ground, such as:

- Holes, pits, tree roots, or ditches.
- Slippery surfaces.
- Steep grades.
- Uneven grades.
- Sharp objects, such as nails, metal shards, and broken glass.

### 13.4.2 Severe Weather Hazards

During the course of field operations, severe weather may be encountered, including thunderstorms, lightning, rainstorms, and other unsafe weather conditions (i.e., high winds and tornadoes). Criteria indicating that severe weather conditions may exist include:

- High winds (greater than 40 miles per hour – depending on the tree cover and other site specific conditions);
- Tornado watch or warning in place for the area including the site;
- Visible lightning;
- Extreme temperatures (e.g., greater than 100 degrees F); or
- Heavy rainfall that makes footing treacherous and visibility difficult.

If severe weather is approaching, the SSO and FTL will determine if weather conditions justify a stoppage of work activities. The SSO and FTL will also determine if weather conditions allow for restart of work activities following the severe weather. In general, work will not commence for 20 minutes after any lightning event. Monitor weather radio and if possible monitor weather radar via internet.

### 13.4.3 Fire Hazards

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as during refueling of heavy or hand held equipment. Some potential causes of explosions and fires include:

- Mixing of incompatible chemicals, which cause reactions that spontaneously ignite due to the production of both flammable vapors and heat;
- Ignition of explosive or flammable chemical gases or vapors by external ignition sources;
- Ignition of materials due to oxygen enrichment;
- Sudden release of materials under pressure.

## 13.5 SITE CHARACTERIZATION ACTIVITY HAZARD ANALYSIS

*(To be updated as new task/activities are required.)*

The party performing the work and their subcontractors are required to conduct an AHA for all aspects of the work. These AHAs will be reviewed daily. The activity hazards analyses consist of the following three steps:

- Identify the task and break it down into steps.
- Identify the hazards associated with each step.
- Identify the specific hazard control measure used for each step in accordance with the order-of-precedence method of control.

The Project Managers may use the following list as a guide in determining the investigation and remediation activity hazards analyses for various high-hazard operations and critical tasks.

- General Oversight
- Activities – Field. Many different types of activities occur in the field from excavations, groundwater sampling, soil sampling, well installation and monitoring, and pump tests. A variety of hazards could be incurred with each activity such as biological, slip/trips/falls and lacerations. An activity hazard analysis is required for each different field activity to identify the hazards and controls.
- Site Visit or Site Walk. When a field visit occurs, it may be before any field activities are taking place. However, there may still be hazards present such as walking or driving in areas with uneven terrain, etc. Although personal protective equipment such as a hard hat and safety glasses may not be needed, sturdy work boots, long pants, and sunscreen may be necessary.
- Operation- Motor Vehicle. Although driving a vehicle may be second nature to many individuals, there are many hazards and controls that need to be identified. Fatigue and distractions are two hazards that many individuals do not think about on a regular basis. Operation- Heavy Equipment or Machinery and Drill rigs. Evaluate the use of heavy equipment in operations such as site clearing, grading, drilling and excavation or lifting. Controls should include equipment alarms, use of qualified operators, pre-use inspections, and any specific OSHA regulatory requirements.
- Fueling- Motor Vehicle
- Fueling- Heavy Equipment and Machinery
- Sampling- Soil
- Decontamination- Area Set-up
- Decontamination- Large Equipment
- Decontamination- Personnel. Following sample processing activities, personnel will decontaminate in the designated site decontamination area.

- Decontamination- Portable Tools. Equipment used to collect samples and to monitor personnel exposures shall be cleaned to remove any signs of the investigated material. Sample collection equipment may be sprayed with water to remove such material. Air monitoring or other sensitive equipment may be wiped with a damp disposable wipe.

## 14.0 TRAINING AND INSTRUCTION POLICY

All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:

- When this HASP is updated for a specific activity;
- To all new workers;
- To all workers given new job assignments for which training has not previously provided;
- Whenever new substances, processes, procedures or equipment are introduced the workplace and represent a new hazard;
- Whenever the employer is made aware of a new or previously unrecognized hazard;
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed; and,
- To all workers with respect to hazards specific to each employee's job assignment.

Workplace safety and health practices for all locations include, but are not limited to, the following:

- Explanation of this site-specific HASP, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.
- Use of appropriate clothing, including gloves, footwear, and personal protective equipment.
- Information about chemical hazards to which employees could be exposed and other hazard communication program information.
- Availability of toilet, hand-washing, and drinking water facilities.
- Provisions for medical services and first aid including emergency procedures.

In addition, specific instructions to all workers will be provided regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training. All personnel engaged in hazardous substance removal or other activities that expose or potentially expose them to hazardous substances or health hazards shall receive appropriate

training as required by 29 CFR 1910.120, including, but not limited to, initial 40-hour, 8-hour Supervisor and annual 8-hour refresher training.

## 15.0 PROJECT SITE EMPLOYEES ORIENTATION PROGRAM SUBJECTS

The PSM helps to develop the orientation and meets with new workers to review site procedures and requirements. Topics covered in the HASP overview include:

- Names of personnel responsible for site safety and health
- Reporting emergencies, incidents and unsafe conditions
- Emergency/evacuation plans
- Safety, health and other hazards at the site
- Review of relevant activities on site and related AHAs
- Proper use of personal protective equipment
- Work practices by which a worker can minimize risk from hazards
- Safe use of engineering controls and equipment on site
- Acute effects of compounds at the site
- Decontamination procedures

## 16.0 EMPLOYEE COMMUNICATION SYSTEM AND POLICY

An open, two-way communication between management and staff on health and safety issues is essential to an injury-free, productive workplace. The following system of communication is designed to facilitate a continuous flow of safety and health information between management and staff in a form that is readily understandable and consists of one or more of the following checked items:

- New worker orientation including a discussion of safety and health policies and procedures.
- Review of site-specific HASP prepared by future party performing work at the Site.
- Workplace safety and health training programs.
- Regular weekly and daily safety meetings.
- Effective communication of safety and health concerns between workers and supervisors, including translation where appropriate.
- Posted or distributed safety information.
- A system for workers to anonymously inform management about workplace hazards.

- A labor/management safety and health committee that meets regularly, prepares written records of the safety and health committees meetings, reviews results of the periodic scheduled inspections, reviews investigations of accidents and exposures and makes suggestions to management for the prevention of future incidents, reviews investigationsof alleged hazardous conditions, and submits recommendations to assist in the evaluation of employee safety suggestion.

## 17.0 RECORDKEEPING POLICY

Following steps must be taken to document implementation of the site-specific HASP:

- Records of hazard assessment inspections, including the persons conducting the inspection, the unsafe conditions and work practices that have been identified and the action taken to correct the identified unsafe conditions and work practices, are recorded on a hazard assessment and correction form.
- Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, types of training, and training providers are recorded on a worker training and instruction form.
- Other records are retained as required by contract specifications or by local, state or federal (OSHA regulations). Where regulations do not specify the length of records retention, a period of three years after project completion will be used.

## 18.0 INCIDENT/NEAR-MISS INCIDENT INVESTIGATIONS POLICY

All incidents and significant near-miss incidents are investigated by an individual or team with training in accident investigation and root cause analysis. The party performing the work and their subcontractors must investigate incidents involving their employees or activities and maintain an investigation report.

Procedures for investigating workplace incidents and near-miss incidents include:

- Responding to the incident scene as soon as possible;
- Reporting incidents and near-miss incidents immediately to the appropriate point-of contact
- Interviewing injured workers and witnesses;
- Examining the workplace for factors associated with the incident/near-miss incident;
- Determining the cause of the incident/near-miss incident;
- Taking corrective action to prevent the incident/near-miss incident from reoccurring;
- Recording the findings and corrective actions taken; and
- Post-accident substance abuse testing.

# 19.0 EMERGENCY ACTION PLAN

The purpose of the Emergency Action Plan is to ensure that immediate mitigative and corrective emergency response actions are in place to minimize the consequences of an emergency, protect worker and public health and safety, provide security, and ensure the continuance of such actions until the emergency is terminated. Development and implementation of an Emergency Action Plan is required for prompt, efficient, and effective response to emergencies in accordance with applicable local, staff, and federal regulations.

The Project Manager will ensure that a comprehensive Emergency Action Plan has been established prior to any work involving any radiological or chemical hazard. The Emergency Action Plan is needed to train personnel on the required actions during an emergency situation to preserve the health and safety of the public and workers.

An Emergency Action Plan shall be developed and implemented in accordance with the applicable standards or requirements and specific site conditions. The basic elements of the Plan are as follows:

- Identification of hazards and threats, hazard mitigation, development and preparation of emergency plans and procedures, and identification of personnel and resources needed for effective response.
- Actions taken following termination of the emergency to return to normal operations.
- Assessments and documentation to ensure that stated emergency capabilities are sufficient to implement emergency plans.

# 20.0 SITE SPECIFIC MEDICAL EMERGENCY PLAN

Following medical requirements have been established and implemented for the project:

## 20.1 NON-EMERGENCY MEDICAL SERVICES

The following medical facilities are suggested based on their proximity to the Site to treat work-related injuries and illnesses that are NOT life threatening. It is recommended to contact the clinics to ensure that the hours of operations meet the potential needs of Site workers. If work hours are outside the hours of operation of these clinics, then additional clinics that have better hours must be identified.

**Non-Emergency Medical Services**

Midtown New York Doctors Urgent Care, 205 Lexington Ave, New York, NY 10016, Phone (212)684-4700

**Emergency Medical Services**

Mount Sinai West Roosevelt – Emergency Center, 1000 10th Avenue, New York, NY 10019, Phone (212) 523-4000 (Figure 20.1).

Note: Transportation to a medical facility for non-emergencies must be done by at least two (2) individuals (i.e. driver and observer).

**Figure 20.1 Mount Sinai West Roosevelt – Emergency Center**
**1000 10th Avenue**
**New York, NY 10019**
**(212) 523-4000**




**Directions:**
1. **Start out going SOUTHEAST on WEST 44TH ST. toward 11TH AVE.**
2. **Turn LEFT onto 11TH AVE.**
3. **Turn RIGHT onto WEST 57TH ST.**
4. **Turn LEFT onto 10TH AVE.**
3. **End at 1000 10TH AVE, New York, New York 10019**

**Total Est. Time: 3 minutes** **Total Est. Distance: 0.9 miles**

### 20.2 EMERGENCY MEDICAL RESPONSE

The project shall display posters/signs with emergency telephone numbers and locations of facilities in visible locations and at selected phone locations throughout the project area (including subcontractor facilities).

| Emergency Contacts | Phone Number |
|---|---|
| **Ambulance** | **911** |
| **Fire Department** | **911** |
| **State Police (NYS)** | **911** |
| Pollution Toxic Chemical Oil Spills | (800) 424-8802 |
| Mount Sinai West Roosevelt – Emergency Center | (212) 523-4000 |
| Poison Control Center | (800) 222-1222 |

## 21.0 HAZARD COMMUNICATION PROGRAM

The purpose of a Hazard Communication Program is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training. This section will provide the Program outline, a list of the hazardous chemicals to be used and a description of where Material Safety Data Sheets (**MSDSs**) will be located.

# ATTACHMENT A

# NYSDOH GENERIC COMMUNITY AIR MOITORING PLAN (CAMP)

## Appendix 1A
## New York State Department of Health
## Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

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

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

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

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

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

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/$m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/$m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/$m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/$m^3$ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

## Appendix 1B
## Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50$^{o}$ C (14 to 122$^{o}$ F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

# ATTACHMENT B

# ACTIVITY HAZARD ANALYSIS

# APPENDIX F – FIELD SAMPLING PLAN

# APPENDIX F

# EXCAVATION WORK PLAN FOR THE FORMER WEST 45TH STREET GAS WORKS

## (SITE NO. 231109)

**CONSOLIDATED EDISON CO. OF NEW YORK, INC.**
**31-01 20th Avenue**
**Long Island City, NY 11105**

*Prepared by:*

**PARSONS**
301 Plainfield Road, Suite 350
Syracuse, NY 13212

**NOVEMBER 2016**

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# SECTION 1

# INTRODUCTION

This Field Sampling Plan (FSP) defines the methods and procedures to be used for conducting site monitoring at the West 45th Street Former Gas Works Operable Unit 1 (OU-1) site located in New York, New York.

## 1.1 OVERVIEW OF FIELD ACTIVITIES

The following field activities will be performed as part of the long term site management work:

- **Cover System Inspection** – The Site cover system will be inspected annually, including the asphalt surfaces and the exposed concrete slabs.
- **Groundwater Monitoring** – Groundwater samples will be collected from OU-1 well network to assess the potential of migration of MGP residuals that may have impacts on human health and the environment.

# SECTION 2

# GENERAL FIELD GUIDELINES

## 2.1 SITE HAZARDS

Potential on-site surface hazards, such as sharp objects, traffic, and building hazards will be identified prior to initiation of fieldwork. Generally, such hazards will be identified during a site visit prior to the first day of fieldwork.

## 2.2 FIELD LOG BOOKS AND SAMPLE/INSPECTION LOGS

All field activities will be carefully documented in field log books and on field sample/inspection logs. Entries will be of sufficient detail that a complete daily record of significant events, observations, and measurements is obtained.

The field log book will provide a legal record of the activities conducted at the site. Accordingly:

- Field books will be bound with consecutively numbered pages.
- Field books will be controlled by the Field Team Leader while field work is in progress.
- Entries will be written with waterproof ink.
- Entries will be signed and dated at the conclusion of each day of fieldwork.
- Erroneous entries made while fieldwork is in progress will be corrected by the person that made the entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing the correction.
- Corrections made after departing the field will be made by the person who made the original entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing and dating the time of the correction.

At a minimum, the log book and sample/inspection logs will include the following information:

- Location of sample/inspection activity;
- Date and time of sampling/inspection;
- Names and titles of field team members;
- Names and titles of any site visitors and site contacts;
- Weather information, for example: temperature, cloud coverage, wind speed and direction;
- Purpose of field activity;
- A description of the field work conducted;
- Sample media (groundwater, etc.);
- Sample collection method;

- Number and volume of sample(s) taken;
- Description of sampling point(s);
- Volume of groundwater removed before sampling;
- Preservatives used;
- Analytical parameters;
- Date and time of collection;
- Sample identification number(s);
- Sample distribution (e.g., laboratory);
- Field observations;
- Any field measurements made, such as pH, temperature, conductivity, water level, etc.;
- References for all maps and photographs of the sampling site(s);
- Information pertaining to sample documentation such as:
  - Bottle lot numbers;
  - Dates and method of sample shipments; and
  - Chain-of-Custody Record and Federal Express Air Bill numbers.

# SECTION 3

# FIELD EQUIPMENT DECONTAMINATION AND MANAGEMENT OF INVESTIGATION DERIVED WASTES

## 3.1 DECONTAMINATION AREA

It is anticipated that most groundwater sampling will be completed using dedicated sampling equipment. If non-dedicated equipment is used, decontamination procedures are outlined below.

## 3.2 SAMPLING EQUIPMENT DECONTAMINATION

**Suggested Materials:**

- Potable water
- Phosphate-free detergent – ***Simple Green***
- Distilled water
- Aluminum foil
- Plastic/polyethylene sheeting
- Plastic buckets and brushes
- Personal protective equipment in accordance with the Project Safety Plan

**Procedures:**

- Prior to sampling, all non-dedicated sampling equipment (downhole sample pumps, interface probes, etc.) will be either steam cleaned or washed with potable water and a phosphate-free detergent (***Simple Green***). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc.
- The sampling equipment will then be rinsed with potable water followed by a deionized water rinse.
- Between rinses, equipment will be placed on polyethylene sheets or aluminum foil if necessary. At no time will washed equipment be placed directly on the ground.
- Equipment will be wrapped in polyethylene plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

## 3.3 MANAGEMENT OF INVESTIGATION DERIVED WASTES

### 3.3.1 Decontamination Fluids

Decontamination fluids will be collected in DOT approved 55-gallon drums. The drums will be labeled as investigation derived wastewater and temporarily stored in a secured area to be determined by Con Edison and facility representatives. The drums will be placed on wooden pallets or plywood in a plastic-lined containment area pending characterization and proper disposal.

### 3.3.2 Purge Water

All purge water will be contained in 55-gallon drums. The drums will be labeled as investigation derived wastewater from the corresponding well and temporarily stored in a secured area to be determined by Con Edison and facility representatives. The drums will be placed on wooden pallets or plywood in a plastic-lined containment area pending characterization and proper disposal.

### 3.3.3 Personal Protective Equipment

All personal protective equipment (PPE) will be placed in 55-gallon drums or roll-off containers for proper disposal by Con Edison.

### 3.3.4 Dedicated Sampling Equipment

All dedicated groundwater sampling equipment (dedicated disposable polyethylene bailer and dedicated polypropylene line) will be placed in 55-gallon drums for disposal by Con Edison.

# SECTION 4

# ANNUAL SITE INSPECTION

## 4.1 INTRODUCTION

The Site cover system will be inspected annually, including the asphalt surfaces and the exposed concrete slabs. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Unscheduled inspections may take place when a breach in the cap system has been reported or an emergency occurs that is deemed likely to affect the integrity of the system.

### 4.1.1 Cover System Inspections

The following will be used for inspection of the cover system.

### 4.1.2 Suggested Equipment and Supplies

- Field book
- Site figures
- Measuring tape or wheel
- Camera

### 4.1.3 Inspections

- Defects in the asphalt surfaces and the exposed concrete slabs (e.g. cracks, holes, etc) will be noted on the inspection form provided as Figure 4.1
- Defects will be photographed and a photo log and description will be recorded in the field book or on the inspection form.
- Note location of any observed defects on the site figure. If possible measure the location of the defect from nearest landmark (i.e., building corner) and record in the field book or on the site figure.

## FIGURE 4.1
## COVER SYSTEM INSPECTION FORM
## WEST 45TH STREET FORMER MGP SITE

Inspector: _____ Date: _____

Event Type (circle one): Scheduled / Non-Routine

**Asphalt Inspection**

Please note any observations of breaches in the any asphalt, which may include but are not limited to cracks, holes, indentations, vegetation growing through asphalt, etc.

**Concrete Slab/Sidewalks Inspection**

Please note any observations of breaches in any concrete/sidewalks, which may include but are not limited to cracks, holes, indentations, vegetation growing through concrete etc.

**Soil Inspection**

Please note any observations of breaches in the soil cover, which may include but are not limited to holes and soil washout.

# SECTION 5

# GROUNDWATER SAMPLING PROCEDURES

## 5.1 INTRODUCTION

Procedures for obtaining groundwater samples are described in this section. Sample handling procedures are described in Section 8.

## 5.2 GROUNDWATER SAMPLING

The following method will be used to collect groundwater samples from monitoring wells.

### 5.2.1 Suggested Equipment and Supplies

- Field book
- Project plans
- Personal protective equipment in accordance with the HASP
- Oil/Water Interface Probe
- Temp, conductivity, pH meters
- Turbidity meter
- 250-mL glass beaker
- Decontamination supplies
- Peristaltic or other low-flow purge pump
- Plastic tubing
- Plastic sheeting
- PID
- Clear tape, duct tape
- Coolers and ice
- Laboratory sample bottles
- Federal Express labels

### 5.2.2 Groundwater Sampling Method

Purging

- The number and frequency of groundwater samples to be collected and the associated analytical parameters are summarized in the SMP.
- Prior to sampling, the static water level and thickness of any free product will be measured to the nearest 0.01 foot from the surveyed well elevation mark on the top of the PVC casing with a decontaminated oil/water interface probe. The measurement will be recorded in the field book.
- The probe will be decontaminated according to procedures outlined in Section 3.

- Each well will be purged using a submersible pump and low-flow purging techniques to stabilize the following water quality parameters: temperature, conductivity, pH, dissolved oxygen, oxidation reduction potential (ORP), and turbidity; which will be measured approximately every five minutes.
- If a well goes dry before the required volumes are removed, it will be allowed to recover, purged a second time until dry or the required volumes are removed, and sampled when it recovers sufficiently. If field conditions (based on geology observed during drilling) indicate that water level recovery may be slow, then slow purging will be conducted. If the well goes dry during slow purging, it will be allowed to recover, and then sampled without a second purge.
- Purge water will be managed and disposed of in accordance with procedures described in Section 3.

Sampling

- Once stabilization was achieved, groundwater samples were collected using a low-flow submersible pump with dedicated tubing.
- Prior to filling the sample bottles, one "clean" container will be filled with water. The temperature, pH, and conductivity will be measured with a pre-calibrated probe and recorded in the field book.
- Sample containers for VOCs will be filled first. Sample containers for the other analytes will follow. If turbidity is less than 50 NTU, the sample for metals analysis will not be filtered. If turbidity is greater than 50 NTU, one filtered and one unfiltered sample for metals analysis will be collected and placed in bottles provided by the laboratory.
- The sample containers will be labeled, placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of $4^{o}$ C). The cooler will be shipped overnight or delivered to the laboratory for analysis.
- Chain-of-custody procedures will be followed as outlined in the QAPP.
- After all samples are collected, dedicated sampling equipment will be disposed of in accordance with methods described in Section 3.3.
- Well sampling data will be recorded in the field log book and on the Groundwater Sampling Record shown in Figure 5.1, or similar form.

Figure 5.1 Groundwater Sampling Record

## GROUNDWATER SAMPLING RECORD

**SITE NAME:** _____
**PROJECT NUMBER:** _____

SAMPLE NUMBER: _____ WEATHER: _____
DATE: _____ TIME: _____

SAMPLERS: _____ of _____
_____ of _____

**DESCRIPTION OF SAMPLING POINT**

Sample Location: Monitoring well MW- _____
Screen/Sample Depth: _____
Sampling Method: _____

**GROUNDWATER PURGING**

Initial Static Water Level: _____
One Well Volume: 3 Volumes

| | | | | | |
|---|---|---|---|---|---|
| 2-Inch Casing: | _____ | Feet of Water x 0.16 Gallons/Foot = | _____ | Gallons | _____ |
| 3-Inch Casing: | _____ | Feet of Water x 0.36 Gallons/Foot = | _____ | Gallons | _____ |
| 4-Inch Casing: | _____ | Feet of Water x 0.65 Gallons/Foot = | _____ | Gallons | _____ |

Volume of groundwater purged: _____ Gallons
Purging Device: _____
Purge Water Disposition (e.g., contained): _____

**SAMPLE DESCRIPTION**

Color: _____
Odor: _____
Other: _____
Sample Analyzed for: _____
QC Samples at this Location: _____
QC Samples Analyzed for: _____

**FIELD MEASUREMENTS**

Temperature (C/F): _____ Dissolved Oxygen: _____
pH: _____ Eh (Redox Potential): _____
Conductivity (µohms/cm): _____
Turbidity (NTU): _____

**SAMPLE CUSTODY**

Chain of Custody Number: _____ Laboratory: _____
Shipped Via: _____ Airbill Number: _____

**COMMENTS** _____
_____

# SECTION 6

# FIELD INSTRUMENTS AND CALIBRATION

Field analytical equipment will be calibrated immediately prior to each day's use and more frequently if required. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. All instrument calibrations will be documented in the project field book and in an instrument calibration log. Records of all instrument calibration will be maintained by the Field Team Leader and will be subject to audit by the Project Quality Assurance Manager (PQAM). Copies of all of the instrument manuals and/or instruction sheets will be maintained on-site by the Field Team Leader.

The following field instruments will be used during the investigation:

- PID,
- pH Meter,
- Specific Conductivity Meter and Temperature Probe, and
- Turbidity Meter.

## 6.1 PORTABLE PHOTOIONIZATION DETECTOR

- The photoionization detector (PID) will be a RaeSystems MiniRae 2000 (or equivalent), equipped with a 10.6 eV lamp. The MiniRae is capable of ionizing and detecting compounds with an ionization potential of less than 10.6 eV. This accounts for up to 73% of the volatile organic compounds on the Target Compound List.
- Calibration must be performed at the beginning of each day of use with a standard calibration gas having an approximate concentration of 100 parts per million of isobutylene. If the unit experiences abnormal perturbation or erratic readings, additional calibration will be required.
- All calibration data must be recorded in the field logbook.
- A battery check must be completed at the beginning and end of each working day.

## 6.2 PH METER

- Calibration of the pH meter must be performed at the start of each day of use, and after very high or low readings as required by this plan, according to manufacturer's instructions.
- National Institute of Standards and Technology - traceable standard buffer solutions which bracket the expected pH range will be used. The standards will be pH of 4.0, 7.0 and 10.0 standard units.
- The pH calibration must be used to set the meter to display the value of the standard being checked.

- The calibration data must be recorded on calibration sheets maintained on-site or with the piece of equipment.

## 6.3 SPECIFIC CONDUCTIVITY METER AND TEMPERATURE PROBE

- Calibration checks using the conductivity standard must be performed at the start of each day of use, after five to ten readings or after very high or low readings as required by this plan, according to manufacturer's instructions.
- The portable conductivity meter must be calibrated using a reference solution of 200 uohms/cm on a daily basis. Readings must be within five percent to be acceptable.
- The thermometer of the meter must be calibrated against the field thermometer on a weekly basis.

## 6.4 TURBIDITY METER

- The turbidity meter must be checked at the start of each day of use and at the end of the day, according to manufacturer's instructions.

# SECTION 7

# FIELD SAMPLE IDENTIFICATION AND CUSTODY

## 7.1 SAMPLE IDENTIFICATION

Each sample will be given a unique alphanumeric identifier in accordance with the following classification system:

**SAMPLE IDENTIFICATION**

| LL* | NN* | N-N | LL |
|---|---|---|---|
| Sample Type | Sample Number | Depth Code | QC Identifier |

Water

Sample Type: MW - Monitoring Well

Sample Number: Number referenced to a sample location map.

QC Identifier:

| | |
|---|---|
| FB - Field Blank | MS - Matrix Spike |
| TB - Trip Blank | MD - Matrix Spike Duplicate |
| WB - Wash or Rinse Blank | MB - Matrix Blank |

* L = Letter

* N = Number

Field duplicate samples will be assigned identifiers that do not allow the laboratory to distinguish them as field duplicates. Each sample container will be labeled prior to packing for shipment. The sample identifier, site name, date and time of sampling, and analytical parameters will be written on the label in waterproof ink and recorded in the field book.

## 7.2 CHAIN OF CUSTODY

- A Chain-of-Custody (COC) record (Figure 7.1 or similar) will accompany the sample containers during selection and preparation at the laboratory, during shipment to the field, and during return shipment to the laboratory.
- The COC will identify each sample container and the analytical parameters for each, and will list the field personnel that collected the samples, the project name and number, the name of the analytical laboratory that will receive the samples, and the method of sample shipment.
- If samples are split and sent to different laboratories, a copy of the COC record will be sent with each sample shipment.
- The COC will be completed by field personnel as samples are collected and packed for shipment.
- Erroneous markings will be crossed-out with a single line and initialed by the author.
- The REMARKS space will be used to indicate if the sample is a matrix spike, matrix spike duplicate, or matrix duplicate.

- Trip and field blanks will be listed on separate rows.
- After the samples have been collected and sample information has been listed on the COC form, the method of shipment, the shipping cooler identification number(s), and the shipper air bill number will be entered on the COC.
- A second member of the field team will review the COC for completeness and accuracy whenever possible.
- Finally, a member of the sampling team will write his/her signature, the date, and time on the first RELINQUISHED BY space. Duplicate copies of each COC must be completed.
- One copy of the COC will be retained by sampling personnel. Blind duplicate samples will be identified on the copy retained by the sampling crew. The original will be sealed in a plastic bag and taped inside the lid of the shipping cooler without the additional identification of blind duplicate samples.
- Sample shipments will be refrigerated at 4$^{o}$C, typically by packing with ice, to preserve the samples during shipment.
- After the shipping cooler is closed, custody seals provided by the laboratory will be affixed to the latch and across the front and back of the cooler lid, and signed by the person relinquishing the samples to the shipper.
- The seal will be covered with clear tape, and the cooler lid will be secured by wrapping with packing tape.
- The cooler will be relinquished to the shipper, typically an overnight carrier.
- The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the samples will not be analyzed.
- The samples must be delivered to the laboratory within 48 hours of collection.

## 7.3 SAMPLE DOCUMENTATION

The field team leader will be retaining a copy of the COC, and, in addition, the field team leader will ensure that the following information about each sample is recorded in the field book and/or on the sample logs:

- Sample identifier;
- Identification of sampled media (e.g., groundwater);
- Sample location with respect to known reference point;
- Physical description of sample location;
- Field measurements, (e.g., pH, temperature, conductivity, and water levels);
- Date and time of collection;
- Sample collection method;
- Volume of groundwater purged before sampling;
- Number of sample containers;
- Analytical parameters;
- Preservatives used; and

- Shipping information:
  - Dates and method of sample shipments;
  - Chain-of-Custody Record numbers;
  - Federal Express Air Bill numbers; and
  - Sample recipient (e.g., laboratory name).

Figure 7.1 Chain-of-Custody Form

**Submitted to:**

**Chain Of Custody / Analysis Request**

AESI Ref:
COC #:
Lab Use Only
Lab Proj #
Lab ID

Privileged & Confidential
EDD To:
Site Name:
Location of Site:

Client Contact: (name, co., address)
Sampler:
P O #
Analysis Turnaround Time:
Standard - Y
2 weeks -
1 week -
Next Day -

Hardcopy Report To:
Invoice To:

Preservative: 0 | 0 | 2

Job No.
Column Study Sediment

Sample Identification

| | Location ID | Start Depth (ft) | End Depth (ft) | Field Sample ID | Sample Date | Sample Time | Sample Type | Sample Matrix | Sample Purpose | # of Cont. | Grab/Composite | Field Filtered Sample ? | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |

**Special Instructions:**

Notes:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Relinquished by | Company | | Received by | Company | | Condition | Custody Seals Intact |
| | Date/Time | | | Date/Time | | Cooler Temp. | |
| Relinquished by | Company | | Received by | Company | | Condition | Custody Seals Intact |
| | Date/Time | | | Date/Time | | Cooler Temp. | |

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

# APPENDIX G – QUALITY ASSURANCE PROJECT PLAN

**APPENDIX G**

# QUALITY ASSURANCE PROJECT PLAN FOR THE FORMER WEST 45TH STREET GAS WORKS

# (SITE NO. 231109)




**CONSOLIDATED EDISON CO. OF NEW YORK, INC.**

**31-01 20th Avenue**

**Long Island City, NY 11105**

*Prepared by:*

**PARSONS**

301 Plainfield Road, Suite 350
Syracuse, NY 13212

**NOVEMBER 2016**

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# SECTION 1

# PROJECT DESCRIPTION

This Quality Assurance Project Plan (QAPP) specifies analytical methods to be used to ensure that data from the proposed site investigation are precise, accurate, representative, comparable, and complete.

## 1.1 INTRODUCTION

A remedial investigation was performed at the West 45th Street Former Gas Works (Site) in New York, New York. A Remedial Alternative was developed for the site in order to protect human health and the environment and to address the remedial goals, Remedial Action Objectives, and applicable Standards, Criteria, and Guidance's developed for the site. A Site Monitoring Plan (SMP)has been developed to describe the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination MGP related contamination at the site.

## 1.2 OBJECTIVES

The objectives of this project are as follows:

1. To identify site conditions which could pose a risk to the health and safety of site construction workers;
2. To identify worker protection procedures to be implemented during construction, in the event impacted soil and groundwater are present;
3. To identify subsurface conditions that require mitigative measures during construction; and
4. To identify any special soil handling, transportation and disposal requirements.

## 1.3 SCOPE OF WORK

The scope of work at the West 45th Street site is described in the site SMP. Samples will be collected from groundwater monitoring wells along with waste characterization samples from the sample purge water. Additionally, soil waste characterization samples may also be collected during intrusive work if necessary. These samples may be analyzed using the USEPA SW-846 "Test Methods for Evaluating Solid Waste," November 1986, 3rd edition (and subsequent updates).

# SECTION 2

# PROJECT ORGANIZATION

The project organization is described in the work plan.

# SECTION 3

# QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) OBJECTIVES FOR MEASUREMENT OF DATA

## 3.1 INTRODUCTION

The quality assurance and quality control objectives for all measurement data include precision, accuracy, representativeness, completeness, and comparability. These objectives are defined in following subsections. They are formulated to meet the requirements of the USEPA SW-846. The analytical methods and their Contract Required Quantitation Limits (CRQLs) are given in Section 9.

## 3.2 PRECISION

Precision is an expression of the reproducibility of measurements of the same parameter under a given set of conditions. Specifically, it is a quantitative measurement of the variability of a group of measurements compared to their average value (USEPA, 1987). Precision is usually stated in terms of standard deviation, but other estimates such as the coefficient of variation (relative standard deviation), range (maximum value minus minimum value), relative range, and relative percent difference (RPD) are common.

For this project, field sampling precision will be determined by analyzing coded duplicate samples (labeled so that the laboratory does not recognize them as duplicates) for the same parameters, and then, during data validation (Section 10), calculating the RPD for duplicate sample results.

Analytical precision will be determined by the laboratory by calculating the RPD for the results of the analysis of internal QC duplicates and matrix spike duplicates. The formula for calculating RPD is as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where:

| | | |
|---|---|---|
| RPD | = | Relative Percent Difference. |
| V1, V2 | = | The two values to be compared. |
| \|V1 - V2\| | = | The absolute value of the difference between the two values. |
| (V1 + V2)/2 | = | The average of the two values. |

The data quality objectives for analytical precision, calculated as the RPD between duplicate analyses, are presented in Tables 3.1 and 3.2.

# TABLE 3.1
# QUALITY CONTROL LIMITS FOR WATER SAMPLES

| | | Laboratory Accuracy and Precision | | | | | |
|---|---|---|---|---|---|---|---|
| **Analytical Parameters** | **Analytical Method (a)** | **Matrix Spike (MS) Compounds** | **MS/MSD (b) % Recovery** | **MS/MSD RPD (c)** | **LCS (d) % Recovery** | **Surrogate Compounds** | **Surrogate % Recovery** |
| VOCs (e) | 8260 | 1,1-Dichloroethane | 61-145 | 14 | NA | Toluene-d8 | 88-110 |
| | | Trichloroethene | 71-120 | 14 | NA | Bromofluorobenzene | 86-115 |
| | | Benzene | 76-127 | 11 | NA | 1,2-Dichloroethane-d4 | 76-114 |
| | | Toluene | 76-125 | 13 | NA | | |
| | | Chlorobenzene | 75-130 | 13 | NA | | |
| SVOCs (f) | 8270 | Phenol | 12-110 | 42 | NA | Nitrobenzene-d5 | 35-114 |
| | | 2-Chlorophenol | 27-123 | 40 | NA | 2-Fluorobiphenyl | 43-116 |
| | | 1,4-Dichlorobenzene | 36-97 | 28 | NA | Terphenyl-d14 | 33-141 |
| | | N-Nitroso-di-n-propylamine | 41-116 | 38 | NA | Phenol-d5 | 10-110 |
| | | 1,2,4-Trichlorobenzene | 39-98 | 28 | NA | 2-Fluorophenol | 21-110 |
| | | 4-Chloro-3-methylphenol | 23-97 | 42 | NA | 2,4,6-Tribromophenol | 10-123 |
| | | Acenaphthene | 46-118 | 31 | NA | 2-Chlorophenol-d4 | 33-110 (g) |
| | | 4-Nitrophenol | 10-80 | 50 | NA | 1,2-Dichlorobenzene-d4 | 16-110 (g) |
| | | 2,4-Dinitrotoluene | 24-96 | 38 | NA | | |
| | | Pentachlorophenol | 9-103 | 50 | NA | | |
| | | Pyrene | 26-127 | 31 | NA | | |

(a) Analytical Methods: USEPA SW-846, 3rd edition, Revision 1, November 1990; any subsequent revisions shall supersede this information
(b) Matrix Spike/Matrix Spike Duplicate
(c) Relative Percent Difference
(d) Laboratory Control Sample
(e) Target Compound List Volatile Organic Compounds
(f) Target Compound List Semivolatile Organic Compounds
(g) Limits are advisory only

NA - Not Applicable

# TABLE 3.2
# QUALITY CONTROL LIMITS FOR SOIL SAMPLES

| | | Laboratory Accuracy and Precision | | | | | |
|---|---|---|---|---|---|---|---|
| **Analytical Parameter** | **Analytical Method (a)** | **Matrix Spike (MS) Compounds** | **MS/MSD (b) % Recovery** | **MS/MSD RPD (c)** | **LCS (d) % Recovery** | **Surrogate Compounds** | **Surrogate % Recovery** |
| VOCs (e) | 8260 | 1,1-Dichloroethane | 59-172 | 22 | NA | Toluene-d8 | 84-138 |
| | | Trichloroethene | 62-137 | 24 | NA | Bromofluorobenzene | 59-113 |
| | | Benzene | 66-142 | 21 | NA | 1,2-Dichloroethane-d4 | 70-121 |
| | | Toluene | 59-139 | 21 | NA | | |
| | | Chlorobenzene | 60-133 | 21 | NA | | |
| SVOCs (f) | 8270 | Phenol | 26-90 | 35 | NA | Nitrobenzene-d5 | 23-120 |
| | | 2-Chlorophenol | 25-102 | 50 | NA | 2-Fluorobiphenyl | 30-115 |
| | | 1,4-Dichlorobenzene | 28-104 | 27 | NA | Terphenyl-d14 | 18-137 |
| | | N-Nitroso-di-n-propylamine | 41-126 | 38 | NA | Phenol-d5 | 24-113 |
| | | 1,2,4-Trichlorobenzene | 38-107 | 23 | NA | 2-Fluorophenol | 25-121 |
| | | 4-Chloro-3-methylphenol | 26-103 | 33 | NA | 2,4,6-Tribromophenol | 19-122 |
| | | Acenaphthene | 31-137 | 19 | NA | 2-Chlorophenol-d4 | 20-130 (g) |
| | | 4-Nitrophenol | 11-114 | 50 | NA | 1,2-Dichlorobenzene-d4 | 20-130 (g) |
| | | 2,4-Dinitrotoluene | 28-89 | 47 | NA | | |
| | | Pentachlorophenol | 17-109 | 47 | NA | | |
| | | Pyrene | 35-142 | 36 | NA | | |

(a) Analytical Methods: USEPA SW-846, 3rd edition, Revision 1, November 1990, any subsequent revisions shall supersede this information
(b) Matrix Spike/Matrix Spike Duplicate
(c) Relative Percent Difference
(d) Laboratory Control Sample
(e) Target Compound List Volatile Organic Compounds
(f) Target Compound List Semivolatile Organic Compounds
(g) Limits are advisory only

NA - Not Applicable

## 3.3 ACCURACY

Accuracy is a measure of the degree of agreement of a measured value with the true or expected value of the quantity of concern (Taylor, 1987), or the difference between a measured value and the true or accepted reference value. The accuracy of an analytical procedure is best determined by the analysis of a sample containing a known quantity of material, and is expressed as the percent of the known quantity which is recovered or measured. The recovery of a given analyte is dependent upon the sample matrix, method of analysis, and the specific compound or element being determined. The concentration of the analyte relative to the detection limit of the analytical method is also a major factor in determining the accuracy of the measurement. Concentrations of analytes which are close to the detection limits are less accurate because they are more affected by such factors as instrument "noise". Higher concentrations will not be as affected by instrument noise or other variables and thus will be more accurate.

Sampling accuracy may be determined through the assessment of the analytical results of field blanks and trip blanks for each sample set. Analytical accuracy is typically assessed by examining the percent recoveries of surrogate compounds that are added to each sample (organic analyses only), and the percent recoveries of matrix spike compounds added to selected samples and laboratory blanks. Additionally, initial and continuing calibrations must be performed and accomplished within the established method control limits to define the instrument accuracy before analytical accuracy can be determined for any sample set.

Accuracy is normally measured as the percent recovery (%R) of a known amount of analyte, called a spike, added to a sample (matrix spike) or to a blank (blank spike). The %R is calculated as follows:

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:

| | | |
|---|---|---|
| %R | = | Percent recovery. |
| SSR | = | Spike sample result: concentration of analyte obtained by analyzing the sample with the spike added. |
| SR | = | Sample result: the background value, i.e., the concentration of the analyte obtained by analyzing the sample. |
| SA | = | Spiked analyte: concentration of the analyte spike added to the sample. |

The acceptance limits for accuracy for each parameter are presented in Tables 3.1 and 3.2.

## 3.4 REPRESENTATIVENESS

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter which is most concerned with the proper design of the sampling program (USEPA, 1987). Samples must be representative of the environmental media being sampled. Selection of sample locations and sampling procedures will incorporate consideration of obtaining the most representative sample possible.

Field and laboratory procedures will be performed in such a manner as to ensure, to the degree that is technically possible, that the data derived represents the in-place quality of the material sampled. Every effort will be made to ensure chemical compounds will not be introduced into the sample via sample containers, handling, and analysis. Decontamination of sampling devices and digging equipment will be performed between samples as outlined in the Field Sampling Plan. Laboratory sample containers will be thoroughly cleaned in accordance with procedures outlined in Section 6.2. Analysis of field blanks, trip blanks, and method blanks will also be performed to monitor for potential sample contamination from field and laboratory procedures.

The assessment of representativeness also must consider the degree of heterogeneity in the material from which the samples are collected. Sampling heterogeneity will be evaluated during data validation through the analysis of coded field duplicate samples. The analytical laboratory will also follow acceptable procedures to assure the samples are adequately homogenized prior to taking aliquots for analysis, so the reported results are representative of the sample received.

Chain-of-custody procedures will be followed to document that contamination of samples has not occurred during container preparation, shipment, and sampling. Details of blank, duplicate and Chain-of-custody procedures are presented in Sections 6 and 7.

## 3.5 COMPLETENESS

Completeness is defined as the percentage of measurements made which are judged to be valid (USEPA, 1987). The QC objective for completeness is generation of valid data for at least 90 percent of the analyses requested. Completeness is defined as follows for all sample measurements:

$$\%C = \frac{V}{T} \times 100$$

where:

%C = Percent completeness.

V = Number of measurements judged valid.

T = Total number of measurements.

## 3.6 COMPARABILITY

Comparability expresses the degree of confidence with which one data set can be compared to another (USEPA, 1987). The comparability of all data collected for this project will be ensured by:

- Using identified standard methods for both sampling and analysis phases of this project;
- Requiring traceability of all analytical standards and/or source materials to the U.S. Environmental Protection Agency (USEPA) or National Institute of Standards and Technology (NIST);
- Requiring that all calibrations be verified with an independently prepared standard from a source other than that used for calibration (if applicable);
- Using standard reporting units and reporting formats including the reporting of QC data;
- Performing a complete data validation on a representative fraction of the analytical results, including the use of data qualifiers in all cases where appropriate; and
- Requiring that all validation qualifiers be used any time an analytical result is used for any purpose.

These steps will ensure all future users of either the data or the conclusions drawn from them will be able to judge the comparability of these data and conclusions.

# SECTION 4

# SAMPLING PROGRAM

## 4.1 INTRODUCTION

Sampling program will provide data concerning the presence and the nature and extent of contamination of groundwater and provide water and soil waste characterization. This section presents sample container preparation procedures, sample preservation procedures, sample holding times, and field QC sample requirements. Sample locations, and the number of environmental and QC samples to be taken are given in Table 4.1. The sampling procedures are presented in the Field Sampling Plan.

## 4.2 SAMPLE CONTAINER PREPARATION AND SAMPLE PRESERVATION

Sample containers will be properly washed and decontaminated prior to their use by either the analytical laboratory or the container vendor to the specifications required by the USEPA. Copies of the sample container QC analyses will be provided by the laboratory for each container lot used to obtain samples. The containers will be tagged, the appropriate preservatives will be added. The types of containers are shown in Tables 4.2 and 4.3.

Samples shall be preserved according to the preservation techniques given in Tables 4.2 and 4.3. Preservatives will be added to the sample bottles by the laboratory prior to their shipment in sufficient quantities to ensure that proper sample pH is met. Following sample collection, the sample bottles should be placed on ice in the shipping cooler, cooled to 4$^{o}$C with ice or "blue ice", and delivered to the laboratory within 48 hours of collection. Chain-of-custody procedures are described in Section 7.

## 4.3 SAMPLE HOLDING TIMES

The sample holding times for organic and inorganic parameters are given in Tables 4.2 and 4.3 and must be in accordance with the NYSDEC ASP requirements. Holding times for Toxicity Characteristic Leaching Procedure (TCLP) samples are given in Table 4.4. The NYSDEC ASP holding times must be strictly adhered to by the laboratory. Any holding time exceedances must be reported to Con Edison.

## 4.4 FIELD QC SAMPLES

To assess field sampling and decontamination performance, two types of "blanks" will be collected and submitted to the laboratory for analyses. In addition, the precision of field sampling procedures will be assessed by collecting coded field duplicates and matrix spike/matrix spike duplicates (MS/MSDs). The blanks will include:

a. Trip Blanks - A Trip Blank will be prepared before the sample containers are sent by the laboratory. The trip blank will consist a 40-ml VOA vial containing distilled, deionized water which accompanies the other water sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of water samples for target compound list (TCL) volatiles analysis. The Trip Blank will be analyzed for TCL volatile organic compounds to access any contamination from sampling and transport, and internal laboratory procedures.

b. Field Blanks - Field Blanks will be taken at a minimum frequency of one per 20 field samples per sample matrix. If dedicated sampling equipment is used to collect samples, only one field blank will be collected per each sample matrix for the duration of the sampling event. Field blanks are used to determine the effectiveness of the decontamination procedures for sampling equipment. It is a sample of deionized, distilled water provided by the laboratory which has passed through the decontaminated sampling apparatus. It is usually collected as a last step in the decontamination procedure, prior to taking an environmental sample. The field blank may be analyzed for all or some of the parameters of interest.

The duplicates will consist of:

a. Coded Field Duplicate - To determine the representativeness of the sampling methods, coded field duplicates will be collected. The samples are termed "coded" because they will be labeled in such a manner that the laboratory will not be able to determine that they are a duplicate sample. This will eliminate any possible bias that could arise.

b. Matrix Spike/Matrix Spike Duplicate (MS/MSD) - MS/MSD samples (MS/MSD for organics; MS and laboratory duplicate for inorganics) will be taken at a frequency of one pair per 20 field samples. These samples are used to assess the effect of the sample matrix on the recovery of target compounds or target analytes. The percent recoveries and RPDs are given in Tables 3.1 and 3.2.

## TABLE 4-1
## SUMMARY OF SAMPLES AND ANALYSES

| Matrix | Parameter | Analytical Method | Field Samples | | | | QC Blanks | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Field Samples | Field Duplicate | MS/MSD[(a)] (Total) | Sub-Total | Trip Blank | Field Blank | |
| Groundwater Samples (4 monitoring wells and 1 temporary well point) | Volatile Organics | EPA SW 8260* | 7 | 1 | 2 | 10 | 1 | - | 11 |
| | Semivolatile Organics | EPA SW 8270B | 7 | 1 | 2 | 10 | - | - | 10 |
| | | | 7 | | | | | | |
| Investigation Derived Waste Characterization (soils) | TCLP VOCs | EPA SW 1311/8260 | 1 | - | - | 1 | - | - | 1 |
| | TCLP SVOCs | EPA SW 1311/8270B | 1 | - | - | 1 | - | - | 1 |
| | TCLP PCBs | EPA SW 1311/8082 | 1 | - | - | 1 | - | - | 1 |
| | TCLP Metals | EPA SW 1311/6010A/6010B | 1 | - | - | 1 | - | - | 1 |
| Investigation Derived Waste Characterization (water) | TCLP VOCs | EPA SW 8260 | 1 | - | - | 1 | - | - | 1 |
| | TCLP SVOCs | EPA SW 8270B | 1 | - | - | 1 | - | - | 1 |
| | TCLP PCBs | EPA SW 8082 | 1 | - | - | 1 | - | - | 1 |
| | TCLP Metals | EPA SW 6010A/6020B | 1 | - | - | 1 | - | - | 1 |

TCLP - Toxicity Characteristic Leaching Procedure
(a) Matrix spike / matrix spike duplicate for organic analyses; matrix spike and laboratory duplicate for inorganic analysis.

## TABLE 4.2

## WATER SAMPLE CONTAINERIZATION, PRESERVATION, AND HOLDING TIMES

| Analysis | Bottle Type | Preservation (a) | Holding Time (b) |
|---|---|---|---|
| Volatile Organic Compounds (VOCs) | 2-40 mL glass vial w/ Teflon septum | Cool to 4°C | 10 days |
| Semivolatile Organics Compounds (SVOCs) | 1000 mL glass w/ Teflon lined cap | Cool to 4°C | 5 days* |

(a) All samples to be preserved in ice during collection and transport.

(b) Days from validated time of sample receipt (VTSR).

# TABLE 4.3

## WASTE SAMPLE CONTAINERIZATION AND HOLDING TIMES

| Analysis | Bottle Type | Preservation [a] | Holding Time [b] |
|---|---|---|---|
| Volatile Organic Compounds (VOCs) | Wide-mouth glass w/ teflon lined cap | Cool to 4°C | 10 days |
| Other Organic Compounds [c] | Wide-mouth glass w/ teflon lined cap | Cool to 4°C | 10 days* |
| Metals | Wide-mouth plastic or glass | Cool to 4°C | 6 months, except mercury (26 days) |
| Cyanide | Wide-mouth plastic | Cool to 4°C | 14 days |
| TCLP Organic Compounds | Wide-mouth glass w/ teflon lined cap | Cool to 4°C | See Table 4.4 |
| TCLP Metals | Wide-mouth plastic or glass | Cool to 4°C | See Table 4.4 |

(a) All samples to be preserved in ice during collection and transport.
(b) Days from date of sample collection.
(c) Semivolatile organic compounds or PCBs.
* Sohxlet or sonication procedures for extraction and concentration of soil/waste samples for SVOCs must be completed within 10 days of VTSR. Sohxlet or sonication procedures for extraction and concentration of soil/ waste samples for PCBs must be completed within 10 days of VTSR. Extracts of soil samples must be analyzed within 40 days of extraction.

# TABLE 4.4

## TCLP(a) SAMPLE HOLDING TIMES

| Analytical Parameter | From: Sample Collection To: TCLP Extraction | From: TCLP Extraction To: Preparative Extraction | From: Preparative Extraction To: Determinative Analysis |
|---|---|---|---|
| Volatiles | 14 days | NA | 14 days |
| Semivolatiles | 14 days | 7 days | 40 days |
| Mercury | 26 days | NA | 26 days |
| Metals (except Mercury) | 180 days | NA | 180 days |

(a) Toxicity Characteristic Leaching Procedure

NA - Not Applicable

# SECTION 5

# SAMPLE TRACKING AND CUSTODY

## 5.1 INTRODUCTION

This section presents sample custody procedures for both the field and laboratory. Implementation of proper custody procedures for samples generated in the field is the responsibility of field personnel. Both laboratory and field personnel involved in the Chain-of-custody (COC) and transfer of samples will be trained as to the purpose and procedures prior to implementation.

Evidence of sample traceability and integrity is provided by COC procedures. These procedures document the sample traceability from the selection and preparation of the sample containers by the laboratory, to sample collection, to sample shipment, to laboratory receipt and analysis. The sample custody flowchart is shown in Figure 5.1. A sample is considered to be in a person's custody if the sample is:

- In a person's possession;
- Maintained in view after possession is accepted and documented;
- Locked and tagged with Custody Seals so that no one can tamper with it after having been in physical custody; or
- In a secured area which is restricted to authorized personnel.

## 5.2 FIELD SAMPLE CUSTODY

A COC record (Figure 5.2 or similar) accompanies the sample containers from selection and preparation at the laboratory, during shipment to the field for sample containment and preservation, and during return to the laboratory. The COC lists the field personnel responsible for taking samples, the project name and number, the name of the analytical laboratory to which the samples are sent, and the method of sample shipment. The COC also lists a unique description of every sample bottle in the set. If samples are split and sent to different laboratories, a copy of the COC record will be sent with each sample.

The REMARKS space on the COC is used to indicate if the sample is a matrix spike, matrix spike duplicate, or any other sample information for the laboratory. Since they are not specific to any one sample point, trip and field blanks are indicated on separate rows. Once all bottles are properly accounted for on the form, a sampler will write his or her signature and the date and time on the first RELINQUISHED BY space. The sampler will also write the method of shipment, the shipping cooler identification number, and the shipper airbill number on the top of the COC. Mistakes will be crossed out with a single line in ink and initialed by the author.

One copy of the COC is retained by sampling personnel and at least one copy is put into a sealable plastic bag and taped inside the lid of the shipping cooler. The cooler lid is closed, custody seals provided by the laboratory are affixed to the latch and across the back and front lids of the cooler, and the person relinquishing the samples signs their name across the seal. The seal is taped, and the cooler is wrapped tightly with clear packing tape. It is then relinquished by field personnel to personnel responsible for shipment, typically an overnight carrier. The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the sample will not be analyzed.

## 5.3 LABORATORY SAMPLE CUSTODY

The Project Manager or Field Team Leader will notify the laboratory of upcoming field sampling activities, and the subsequent shipment of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

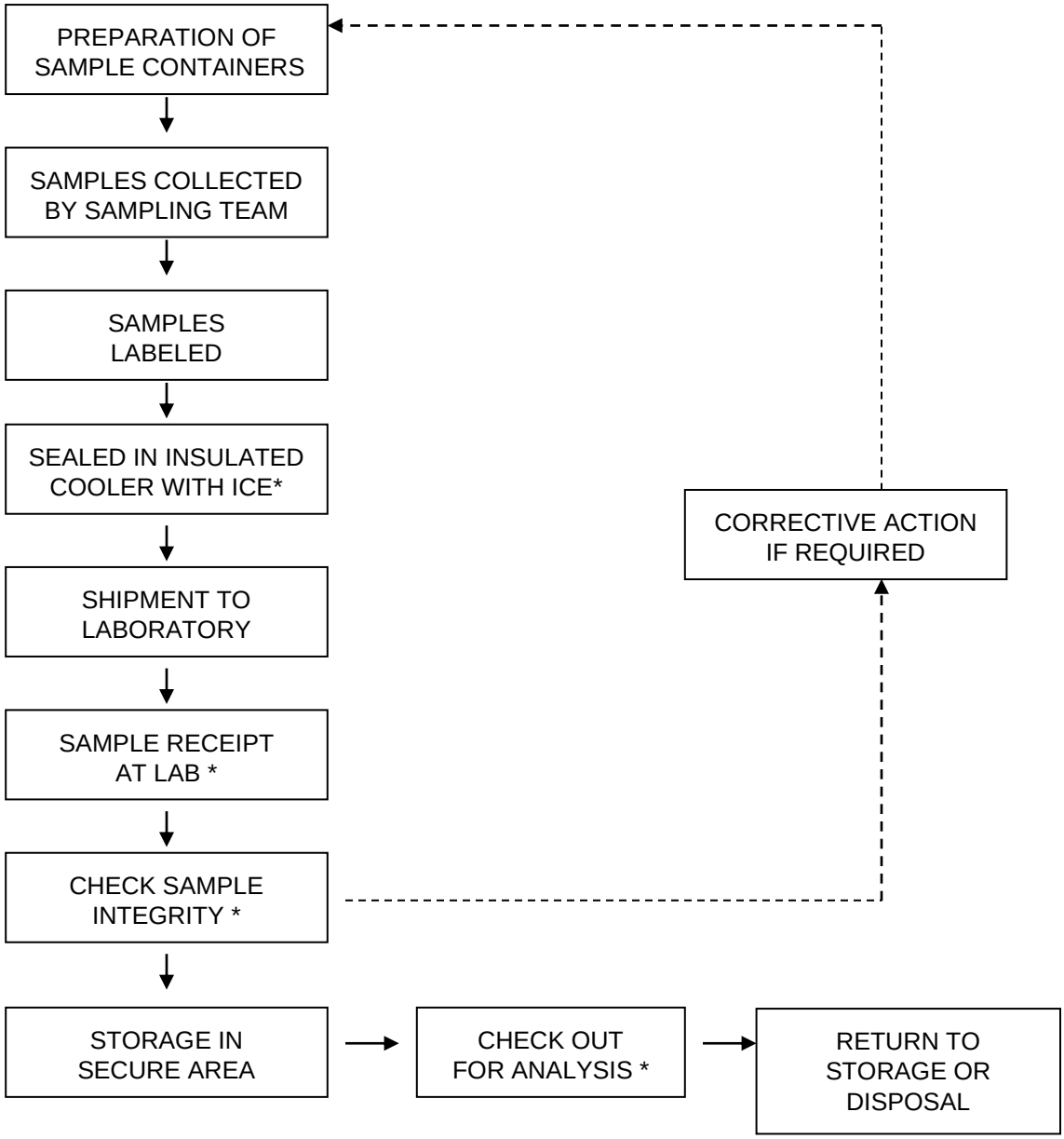
The following laboratory sample custody procedures will be used:

- The laboratory will designate a sample custodian who will be responsible for maintaining custody of the samples, and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check cooler temperature, and check the original COC documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian will sign the COC record and record the date and time received.
- Care will be exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the Project Manager or Field Team Leader as part of the corrective action process. A qualitative assessment of each sample container will be performed to note any anomalies, such as broken or leaking bottles. This assessment will be recorded as part of the incoming chain-of-custody procedure.
- The samples will be stored in a secured area at a temperature of approximately 4 degrees Celsius until analyses commence.
- A laboratory tracking record will accompany the sample or sample fraction through final analysis for control.

A copy of the tracking record will accompany the laboratory report and will become a permanent part of the project records.

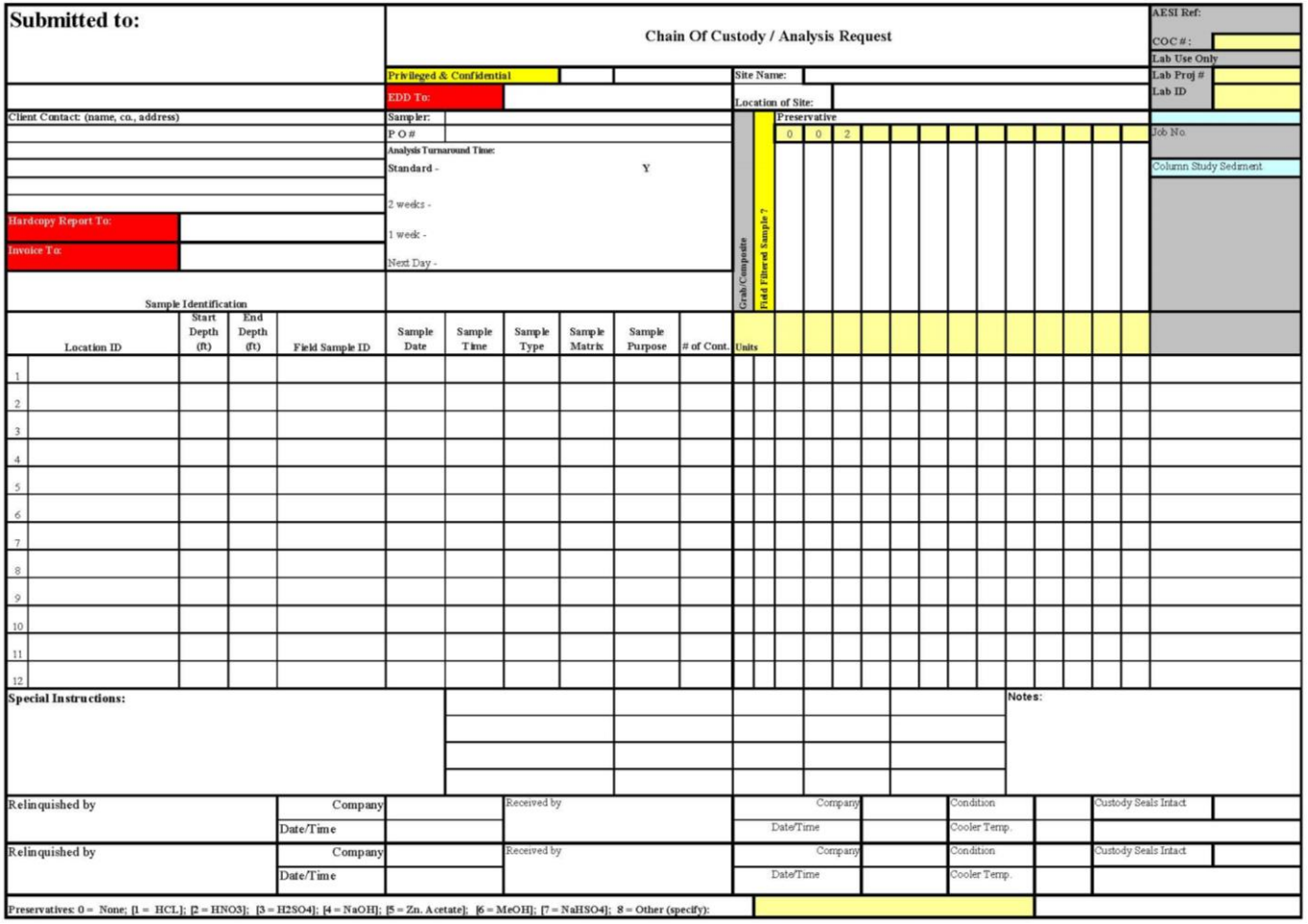
**FIGURE 5.1**

# SAMPLE CUSTODY




* REQUIRES SIGN-OFF ON CHAIN-OF-CUSTODY FORM

Figure 5.2 Chain of Custody



**Submitted to:**

**Chain Of Custody / Analysis Request**

AESI Ref:
COC #:
Lab Use Only
Lab Proj #
Lab ID
Job No.
Column Study Sediment

Privileged & Confidential
EDD To:
Sampler:
P O #
Analysis Turnaround Time:
Standard - Y
2 weeks -
1 week -
Next Day -
Hardcopy Report To:
Invoice To:
Client Contact: (name, co., address)

Site Name:
Location of Site:

Preservative: 0 | 0 | 2

Grab/Composite
Field Filtered Sample ?

Sample Identification

| | Location ID | Start Depth (ft) | End Depth (ft) | Field Sample ID | Sample Date | Sample Time | Sample Type | Sample Matrix | Sample Purpose | # of Cont. | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |

**Special Instructions:**

Notes:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Relinquished by | Company | | Received by | Company | | Condition | | Custody Seals Intact | |
| | Date/Time | | | Date/Time | | Cooler Temp. | | | |
| Relinquished by | Company | | Received by | Company | | Condition | | Custody Seals Intact | |
| | Date/Time | | | Date/Time | | Cooler Temp. | | | |

**Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):**

# SECTION 6

# CALIBRATION PROCEDURES

## 6.1 FIELD INSTRUMENTS

All field analytical equipment will be calibrated immediately prior to each day's use. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all the instrument manuals will be maintained on-site by the Field Team Leader.

## 6.2 LABORATORY INSTRUMENTS

The laboratory will follow all calibration procedures and schedules as specified in the sections of the USEPA SW-846 and subsequent updates which apply to the instruments necessary for the analytical methods given in Section 7.

# SECTION 7

# ANALYTICAL PROCEDURES

## 7.1 INTRODUCTION

Samples will be analyzed according to the USEPA SW-846 "Test Methods for Evaluating Solid Waste," November 1986, 3rd edition and subsequent updates. The methods to be used for the laboratory analysis of water and soil samples are presented in Tables 7.1 and 7.2. These methods were selected because they attain the quantitation limits which are compiled on Tables 7.1 and 7.2.

**TABLE 7.1**
**PROJECT QUANTITATION LIMITS**

| | Analysis/Compound | Method | Quantitation Limits Water (ug/L) | Quantitation Limits Soil (ug/kg) | State of New York Standards Water (ug/L) [a] | State of New York Standards Soil (ug/kg) [b] |
|---|---|---|---|---|---|---|
| | **Volatile Organics (25 ml purge)** | | | | | |
| 1 | 1,1,1-Trichloroethane | SW8260B | 1 | 5 | 5 | 800 |
| 2 | 1,1,2,2-Tetrachloroethane | SW8260B | 1 | 5 | 5 | 600 |
| 3 | 1,1,2-Trichloroethane | SW8260B | 1 | 5 | 1 | |
| 4 | 1,1-Dichloroethane | SW8260B | 1 | 5 | 5 | 200 |
| 5 | 1,1-Dichloroethene | SW8260B | 1 | 5 | 5 | 400 |
| 6 | 1,2-Dichloroethane | SW8260B | 1 | 5 | 0.6 | 100 |
| 7 | 1,2-Dichloroethene(total) | SW8260B | 1 | 5 | 5 | 300 |
| 8 | 1,2-Dichloropropane | SW8260B | 1 | 5 | 1 | |
| 9 | 2-Butanone (MEK) | SW8260B | 10 | 20 | | 300 |
| 10 | 2-Hexanone | SW8260B | 10 | 20 | | |
| 11 | 4-Methyl-2-pentanone(MIBK) | SW8260B | 5 | 20 | | 1000 |
| 12 | Acetone | SW8260B | 10 | 20 | | 200 |
| 13 | Benzene | SW8260B | 1 | 5 | 1 | 60 |
| 14 | Bromodichloromethane | SW8260B | 1 | 5 | | |
| 15 | Bromoform | SW8260B | 1 | 5 | | |
| 16 | Bromomethane | SW8260B | 2 | 10 | 5 | |
| 17 | Carbon Disulfide | SW8260B | 1 | 5 | | 2700 |
| 18 | Carbon Tetrachloride | SW8260B | 1 | 5 | 5 | 600 |
| 19 | Chlorobenzene | SW8260B | 1 | 5 | 5 | 1700 |
| 20 | Chloroethane | SW8260B | 2 | 10 | 5 | 1900 |
| 21 | Chloroform | SW8260B | 1 | 5 | 7 | 300 |
| 22 | Chloromethane | SW8260B | 2 | 10 | 5 | |
| 23 | cis-1,3-Dichloropropene | SW8260B | 1 | 5 | 0.4 | |
| 24 | Dibromochloromethane | SW8260B | 1 | 5 | 5 | |
| 25 | Ethyl Benzene | SW8260B | 1 | 5 | 5 | 5500 |
| 26 | Methylene Chloride | SW8260B | 1 | 5 | 5 | 100 |
| 27 | Styrene | SW8260B | 1 | 5 | 5 | |
| 28 | Tetrachloroethene | SW8260B | 1 | 5 | 5 | 1400 |
| 29 | Toluene | SW8260B | 1 | 5 | 5 | 1500 |
| 30 | trans-1,3-Dichloropropene | SW8260B | 1 | 5 | 0.4 | |
| 31 | Trichloroethene | SW8260B | 1 | 5 | 5 | 700 |
| 32 | Vinyl Chloride | SW8260B | 2 | 10 | 2 | 200 |
| 33 | Xylenes(total) | SW8260B | 1 | 5 | 5 | 1200 |

**TABLE 7.1**
**PROJECT QUANTITATION LIMITS**

| | Analysis/Compound | Method | Quantitation Limits Water (ug/L) | Quantitation Limits Soil (ug/kg) | State of New York Standards Water (ug/L) | State of New York Standards Soil (ug/kg) |
|---|---|---|---|---|---|---|
| | **Semivolatile Organics** | | | | | |
| 1 | 1,2,4-Trichlorobenzene | SW8270C | 10 | 330 | 5 | 3400 |
| 2 | 1,2-Dichlorobenzene | SW8270C | 10 | 330 | 3 | 7900 |
| 3 | 1,3-Dichlorobenzene | SW8270C | 10 | 330 | 3 | 1600 |
| 4 | 1,4-Dichlorobenzene | SW8270C | 10 | 330 | 3 | 8500 |
| 5 | 2,2'-oxybis(1-chloropropane)* | SW8270C | 10 | 330 | 5 | |
| 6 | 2,4,5-Trichlorophenol | SW8270C | 25 | 330 | 1 | 100 |
| 7 | 2,4,6-Trichlorophenol | SW8270C | 10 | 330 | 1 | |
| 8 | 2,4-Dichlorophenol | SW8270C | 10 | 330 | 1 | 400 |
| 9 | 2,4-Dimethylphenol | SW8270C | 10 | 330 | 1 | |
| 10 | 2,4-Dinitrophenol | SW8270C | 25 | 330 | 1 | 200 |
| 11 | 2,4-Dinitrotoluene | SW8270C | 10 | 330 | 5 | |
| 12 | 2,6-Dinitrotoluene | SW8270C | 10 | 330 | 5 | 1000 |
| 13 | 2-Chloronaphthalene | SW8270C | 10 | 330 | | |
| 14 | 2-Chlorophenol | SW8270C | 10 | 330 | 1 | 800 |
| 15 | 2-methyl-4,6-Dinitrophenol | SW8270C | 25 | 330 | | |
| 16 | 2-Methylnaphthalene | SW8270C | 10 | 330 | | 36400 |
| 17 | 2-Methylphenol | SW8270C | 10 | 330 | 1 | 100 |
| 18 | 2-Nitrolaniline | SW8270C | 25 | 330 | 5 | 430 |
| 19 | 2-Nitrophenol | SW8270C | 10 | 330 | 1 | 330 |
| 20 | 3,3'-Dichlorobenzidine | SW8270C | 10 | 330 | 5 | |
| 21 | 3-Nitroaniline | SW8270C | 25 | 330 | 5 | 500 |
| 22 | 4-Bromophenyl-phenyl ether | SW8270C | 10 | 330 | | |
| 23 | 4-Chloro-3-methylphenol | SW8270C | 10 | 330 | | 240 |
| 24 | 4-Chloroaniline | SW8270C | 10 | 330 | 5 | 220 |
| 25 | 4-Chlorophenyl-phenyl ether | SW8270C | 10 | 330 | | |
| 26 | 4-Methylphenol | SW8270C | 10 | 330 | 1 | 900 |
| 27 | 4-Nitroaniline | SW8270C | 25 | 330 | 5 | |
| 28 | 4-Nitrophenol | SW8270C | 25 | 330 | 1 | 100 |
| 29 | Acenaphthene | SW8270C | 10 | 330 | | 50000 |
| 30 | Acenaphthylene | SW8270C | 10 | 330 | | 41000 |
| 31 | Anthracene | SW8270C | 10 | 330 | | 50000 |
| 32 | Benzo(a)anthracene | SW8270C | 10 | 330 | | 224 |
| 33 | Benzo(a)pyrene | SW8270C | 10 | 330 | | 61 |
| 34 | Benzo(b)fluoranthene | SW8270C | 10 | 330 | | 1100 |

**TABLE 7.1**
**PROJECT QUANTITATION LIMITS**

| | | | Quantitation Limits | | State of New York Standards | |
|---|---|---|---|---|---|---|
| | **Analysis/Compound** | **Method** | **Water (ug/L)** | **Soil (ug/kg)** | **Water (ug/L)** | **Soil (ug/kg)** |
| | **Semivolatile Organics, cont.** | | | | | |
| 35 | Benzo(g,h,i)perylene | SW8270C | 10 | 330 | | 50000 |
| 36 | Benzo(k)fluoranthene | SW8270C | 10 | 330 | | 1100 |
| 37 | bis(2-Chloroethoxy) methane | SW8270C | 10 | 330 | 5 | |
| 38 | bis(2-Chloroethyl) ether | SW8270C | 10 | 330 | 1 | |
| 39 | bis(2-ethylhexyl)phthalate | SW8270C | 10 | 330 | 5 | 50000 |
| 40 | Butylbenzylphthalate | SW8270C | 10 | 330 | | 50000 |
| 41 | Carbazole | SW8270C | 10 | 330 | | |
| 42 | Chrysene | SW8270C | 10 | 330 | | 400 |
| 43 | Di-n-butylphthalate | SW8270C | 10 | 330 | 50 | 8100 |
| 44 | Di-n-octylphthalate | SW8270C | 10 | 330 | | 50000 |
| 45 | Dibenz(a,h)anthracene | SW8270C | 10 | 330 | | 14 |
| 46 | Dibenzofuran | SW8270C | 10 | 330 | | 6200 |
| 47 | Diethylphthalate | SW8270C | 10 | 330 | | 7100 |
| 48 | Dimethylphthalate | SW8270C | 10 | 330 | | 2000 |
| 49 | Fluoranthene | SW8270C | 10 | 330 | | 50000 |
| 50 | Fluorene | SW8270C | 10 | 330 | | 50000 |
| 51 | Hexachlorobenzene | SW8270C | NA (8081A) | 330 | | 410 |
| 52 | Hexachlorobutadiene | SW8270C | 10 | 330 | 0.5 | |
| 53 | Hexachlorocyclopentadiene | SW8270C | 10 | 330 | 5 | |
| 54 | Hexachloroethane | SW8270C | 10 | 330 | 5 | |
| 55 | Indeno(1,2,3-cd)pyrene | SW8270C | 10 | 330 | | 3200 |
| 56 | Isophorone | SW8270C | 10 | 330 | | 4400 |
| 57 | N-Nitroso-di-n-propylamine | SW8270C | 10 | 330 | | |
| 58 | N-nitrosodiphenylamine | SW8270C | 10 | 330 | | |
| 59 | Naphthalene | SW8270C | 10 | 330 | | 13000 |
| 60 | Nitrobenzene | SW8270C | 10 | 330 | 0.4 | 200 |
| 61 | Pentachlorophenol | SW8270C | 25 | 330 | 1 | 1000 |
| 62 | Phenanthrene | SW8270C | 10 | 330 | | 50000 |
| 63 | Phenol | SW8270C | 10 | 330 | 1 | 30 |
| 64 | Pyrene | SW8270C | 10 | 330 | | 50000 |

**TABLE 7.1**
**PROJECT QUANTITATION LIMITS**

| | Analysis/Compound | Method | Estimated Quantitation Limits Water (ug/L) | Soil (ug/kg) | State of New York Standards Water (ug/L) | Soil (ug/kg) |
|---|---|---|---|---|---|---|
| | **PCBs** | | | | | |
| 1 | Aroclor-1016 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| 2 | Aroclor-1221 | SW8082 | 2.0 | 33 | 0.09 | 1000 |
| 3 | Aroclor-1232 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| 4 | Aroclor-1242 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| 5 | Aroclor-1248 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| 6 | Aroclor-1254 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| 7 | Aroclor-1260 | SW8082 | 1.0 | 33 | 0.09 | 1000 |
| | **Metals** | | | | | |
| 1 | Antimony | SW6010B | 0.006 | 5.0 | 0.003 | |
| 2 | Arsenic | SW6010B | 0.01 | 1 | 0.025 | 7.5 |
| 3 | Barium | SW6010B | 0.01 | 1 | 1 | 300 |
| 4 | Beryllium | SW6010B | 0.005 | 0.5 | 0.003 | 0.16 |
| 5 | Cadmium | SW6010B | 0.005 | 0.5 | 0.005 | 1 |
| 6 | Chromium | SW6010B | 0.01 | 1 | 0.05 | 10 |
| 7 | Copper | SW6010B | 0.03 | 2.5 | 0.2 | 25 |
| 8 | Lead | SW6010B | 0.01 | 0.5 | 0.025 | 400[(c)] |
| 9 | Mercury | SW7470A/7471A | 0.0002 | 0.01 | 0.0007 | 0.1 |
| 10 | Nickel | SW6010B | 0.04 | 4 | 0.1 | 13 |
| 11 | Selenium | SW6010B | 0.01 | 1 | 0.01 | 2 |
| 12 | Silver | SW6010B | 0.01 | 1 | 0.05 | |
| 13 | Thallium | SW7841 | 0.002 | 1 | 0.0005 | |
| 14 | Zinc | SW6010B | 0.02 | 2 | 2 | 20 |
| *15 | Vanadium | SW6010B | 0.05 | 1 | 0.0005 | 150 |
| *16 | Cobalt | SW6010B | 0.05 | 1 | | 30 |
| *17 | Aluminum | SW6010B | 0.2 | 20 | | |
| *18 | Calcium | SW6010B | 5 | 500 | | |
| *19 | Iron | SW6010B | 0.1 | 10 | 0.3 | 2000 |

**TABLE 7.1**
**PROJECT QUANTITATION LIMITS**

| | Analysis/Compound | Method | Estimated Quantitation Limits Water (ug/L) | Soil (ug/kg) | State of New York Standards Water (ug/L) | Soil (ug/kg) |
|---|---|---|---|---|---|---|
| | **Metals, cont.** | | | | | |
| *20 | Magnesium | SW6010B | 5 | 500 | 35 | |
| *21 | Manganese | SW6010B | 0.015 | 1.5 | 0.3 | |
| *22 | Potassium | SW6010B | 5 | 500 | | |
| *23 | Sodium | SW6010B | 5 | 500 | 20 | |
| *24 | Cyanide | SW9010A | 0.01 | 0.01 | 200 | |

Notes:
N/A - Not Applicable
(a) - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, NYSDEC, October 1993
(b) - Determination of Soil Cleanup Objectives and Cleanup Levels, NYSDEC, January 24, 1994
(c) - EPA Guidance on Residential Lead-Based Paint, Lead Contaminated Dust, and Lead Contaminated Soil, July 14, 1994

**TABLE 7.2**
**PRACTICAL QUANTITATION LIMITS (PQLs)**

| TCLP VOLATILE | SW-846 Analysis | Water (ug/L) |
|---|---|---|
| Benzene | 8240B | 5 |
| Carbon Tetrachloride | 8240B | 5 |
| Chloroform | 8240B | 5 |
| 1,2-Dichlorethane | 8240B | 5 |
| 1,1-Dichloroethene | 8240B | 5 |
| 2-Butanone | 8240B | 100 |
| Tetrachloroethene | 8240B | 5 |
| Trichloroethene | 8240B | 5 |
| Vinyl Chloride | 8240B | 100 |

| TCLP SEMIVOLATILE | SW-846 Analysis | Water (ug/L) |
|---|---|---|
| 2-Methylphenol | 3510 / 8270B | 10 |
| 3 & 4-Methylphenol | 3510 / 8270B | 10 |
| 1,4-Dichlorobenzene | 3510 / 8270B | 10 |
| 2,4-Dinitrotoluene | 3510 / 8270B | 10 |
| Hexachlorobutadiene | 3510 / 8270B | 10 |
| Hexachloroethane | 3510 / 8270B | 10 |
| Hexachlorobenzene | 3510 / 8270B | 10 |
| Nitrobenzene | 3510 / 8270B | 10 |
| Pentachlorophenol | 3510 / 8270B | 50 |
| Pyridine | 3510 / 8270B | ND |
| 2,4,5-Trichlorophenol | 3510 / 8270B | 10 |
| 2,4,6-Trichlorophenol | 3510 / 8270B | 10 |

| TCLP METALS | SW-846 Analysis | Water (mg/L) |
|---|---|---|
| Arsenic | 3010 / 6010 | 0.05 |
| Barium | 3010 / 6010 | 0.002 |
| Cadmium | 3010 / 6010 | 0.004 |
| Chromium | 3010 / 6010 | 0.007 |
| Lead | 3010 / 6010 | 0.04 |
| Selenium | 3010 / 6010 | 0.07 |
| Silver | 7760 / 6010 | 0.007 |
| Mercury | 7470 | 0.0002 |

ND - Not Determined

# SECTION 8

# DATA REDUCTION, VALIDATION, AND REPORTING

## 8.1 INTRODUCTION

Data collected during the field investigation will be reduced, reviewed, and a report on the findings will be tabulated in a standard format. The criteria used to identify and quantify the analytes will be those specified for the applicable methods in the USEPA SW-846 and subsequent updates. The data package provided by the laboratory will contain all items specified in the USEPA SW-846 appropriate for the analyses to be performed, and be reported in standard format.

The completed copies of the Chain-of-custody records (both external and internal) accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the analytical reports.

## 8.2 DATA REDUCTION

Two copies of the analytical data packages will be provided by the laboratory. The Con Edison Project Manager will immediately arrange for filing one package; a second copy will be sent to Parsons and used to generate summary tables. These tables will form the database for assessment of the site contamination condition.

# SECTION 9

# INTERNAL QUALITY CONTROL CHECKS AND FREQUENCY

## 9.1 QUALITY ASSURANCE BATCHING

Each set of samples will be analyzed concurrently with calibration standards, method blanks, matrix spikes (MS), matrix spike duplicates (MSD) or laboratory duplicates, and QC check samples (if required by the protocol). The MS/MSD samples will be designated by the field personnel. If no MS/MSD samples have been designated, the laboratory will contact the Con Edison Project Manager for corrective action.

## 9.2 CALIBRATION STANDARDS AND SURROGATES

All organic standard and surrogate compounds are checked by the method of mass spectrometry for correct identification and gas chromatography for degree of purity and concentration. All standards are traceable to a source of known quality certified by the USEPA or NIST, or other similar program. When the compounds pass the identity and purity tests, they are certified for use in standard and surrogate solutions. Concentrations of the solutions are checked for accuracy before release for laboratory use. Standard solutions are replaced monthly or more frequently, based upon data indicating deterioration.

## 9.3 ORGANIC BLANKS AND MATRIX SPIKE

Analysis of blank samples verifies that the analytical method does not introduce contaminants or detect "false positives". The blank water can be generated by reverse osmosis and Super-Q filtration systems, or distillation of water containing $KMnO_4$. The matrix spike is generated by addition of surrogate standard to each sample.

## 9.4 TRIP AND FIELD BLANKS

Trip blanks and field blanks will be utilized in accordance with the specifications in Section 4. These blanks will be analyzed to provide a check on sample bottle preparation and to evaluate the possibility of atmospheric or cross contamination of the samples.

# SECTION 10

# QUALITY ASSURANCE PERFORMANCE AUDITS AND SYSTEM AUDITS

## 10.1 INTRODUCTION

Quality assurance audits may be performed by the project quality assurance group under the direction and approval of the project Quality Assurance Officer (QAO). These audits will be implemented to evaluate the capability and performance of project and subcontractor personnel, items, activities, and documentation of the measurement system(s). Functioning as an independent body and reporting directly to corporate quality assurance management, the QAO may plan, schedule, and approve system and performance audits based upon procedures customized to the project requirements. At times, the QAO may request additional personnel with specific expertise from company and/or project groups to assist in conducting performance audits. However, these personnel will not have responsibility for the project work associated with the performance audit.

## 10.2 SYSTEM AUDITS

System audits may be performed by the QAO or designated auditors, and encompass a qualitative evaluation of measurement system components to ascertain their appropriate selection and application. In addition, field and laboratory quality control procedures and associated documentation may be system audited. These audits may be performed once during the performance of the project. However, if conditions adverse to quality are detected or if the Project Manager requests, additional audits may occur.

## 10.3 PERFORMANCE AUDITS

The laboratory may be required to conduct an analysis of Performance Evaluation (PE) samples or provide proof that Performance Evaluation samples submitted by USEPA or a state agency have been analyzed within the past twelve months.

## 10.4 FORMAL AUDITS

Formal audits refer to any system or performance audit that is documented and implemented by the QA group. These audits encompass documented activities performed by qualified lead auditors to a written procedure or checklists to objectively verify that quality assurance requirements have been developed, documented, and instituted in accordance with contractual and project criteria. Formal audits may be performed on project and subcontractor work at various locations.

Audit reports will be written by auditors who have performed the site audit after gathering and evaluating all data. Items, activities, and documents determined by lead auditors to be in noncompliance shall be identified at exit interviews conducted with the involved management. Noncompliances will be logged, and documented through audit findings which are attached to and are a part of the integral audit report. These audit finding forms are directed to management to satisfactorily resolve the noncompliance in a specified and timely manner.

The Project Manager has overall responsibility to ensure that all corrective actions necessary to resolve audit findings are acted upon promptly and satisfactorily. Audit reports must be submitted to the Project Manager within fifteen days of completion of the audit. Serious deficiencies will be reported to the Project Manager within 24 hours. All audit checklists, audit reports, audit findings, and acceptable resolutions are approved by the QAO prior to issue. Verification of acceptable resolutions may be determined by re-audit or documented surveillance of the item or activity. Upon verification acceptance, the QAO will close out the audit report and findings.

# SECTION 11

# PREVENTIVE MAINTENANCE PROCEDURES AND SCHEDULES

## 11.1 PREVENTIVE MAINTENANCE PROCEDURES

Equipment, instruments, tools, gauges, and other items requiring preventive maintenance will be serviced in accordance with the manufacturer's specified recommendations and written procedure developed by the operators.

A list of critical spare parts will be established by the operator. These spare parts will be available for use in order to reduce the downtime. A service contract for rapid instrument repair or backup instruments may be substituted for the spare part inventory.

## 11.2 SCHEDULES

Written procedures will establish the schedule for servicing critical items in order to minimize the downtime of the measurement system. The laboratory will adhere to the maintenance schedule, and arrange any necessary and prompt service. Required service will be performed by qualified personnel.

## 11.3 RECORDS

Logs shall be established to record and control maintenance and service procedures and schedules. All maintenance records will be documented and traceable to the specific equipment, instruments, tools, and gauges. Records produced shall be reviewed, maintained, and filed by the operators at the laboratories. The QAO may audit these records to verify complete adherence to these procedures.

# SECTION 12

# CORRECTIVE ACTION

## 12.1 INTRODUCTION

The following procedures have been established to ensure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, evaluated, and corrected.

## 12.2 PROCEDURE DESCRIPTION

When a significant condition adverse to quality is noted at site, laboratory, or subcontractor location, the cause of the condition will be determined and corrective action will be taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the QAO, Project Manager, Field Team Leader and involved contractor management, at a minimum. Implementation of corrective action is verified by documented follow-up action.

All project personnel have the responsibility, as part of the normal work duties, to promptly identify, solicit approved correction, and report conditions adverse to quality. Corrective actions will be initiated as follows:

- When predetermined acceptance standards are not attained;
- When procedure or data compiled are determined to be deficient;
- When equipment or instrumentation is found to be faulty;
- When samples and analytical test results are not clearly traceable;
- When quality assurance requirements have been violated;
- When designated approvals have been circumvented;
- As a result of system and performance audits;
- As a result of a management assessment;
- As a result of laboratory/field comparison studies; and
- As required by USEPA SW-846, and subsequent updates, or by the NYSDEC ASP.

Project management and staff, such as field investigation teams, remedial response planning personnel, and laboratory groups, monitor on-going work performance in the

normal course of daily responsibilities. Work may be audited at the sites, laboratories, or contractor locations. Activities, or documents ascertained to be noncompliant with quality assurance requirements will be documented. Corrective actions will be mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the Task Manager.

Personnel assigned to quality assurance functions will have the responsibility to issue and control Corrective Action Request (CAR) Forms (Figure 12.1 or similar). The CAR identifies the out-of-compliance condition, reference document(s), and recommended corrective action(s) to be administered. The CAR is issued to the personnel responsible for the affected item or activity. A copy is also submitted to the Project Manager. The individual to whom the CAR is addressed returns the requested response promptly to the QA personnel, affixing his/her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The QA personnel maintain the log for status of CARs, confirms the adequacy of the intended corrective action, and verifies its implementation. CARs will be retained in the project file for the records.

Any project personnel may identify noncompliance issues; however, the designated QA personnel are responsible for documenting, numbering, logging, and verifying the close out action. The Project Manager will be responsible for ensuring that all recommended corrective actions are implemented, documented, and approved.

**FIGURE 12.1**

## CORRECTIVE ACTION REQUEST

Number: _____ Date: _____

TO: _____

You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by _____

CONDITION:

REFERENCE DOCUMENTS:

RECOMMENDED CORRECTIVE ACTIONS:

| _____ | _____ | _____ | _____ | _____ | _____ |
|---|---|---|---|---|---|
| Originator | Date | Approval | Date | Approval | Date |

RESPONSE

CAUSE OF CONDITION

CORRECTIVE ACTION

(A) RESOLUTION

(B) PREVENTION

(C) AFFECTED DOCUMENTS

C.A. FOLLOWUP:

CORRECTIVE ACTION VERIFIED BY: _____ DATE:_____

# SECTION 13

# REFERENCES

USEPA, 1986. SW-846 "Test Method for Evaluating Solid Waste," dated November 1986. U.S. Environmental Protection Agency, Washington, D.C.

Taylor, J. K., 1987. Quality Assurance of Chemical Measurements. Lewis Publishers, Inc., Chelsea, Michigan

USEPA, 1987. Data Quality Objectives for Remedial Response Actions Activities: Development Process, EPA/540/G-87/003, OSWER Directive 9355.0-7- U.S. Environmental Protection Agency, Washington, D.C.

USEPA, 1992a. CLP Organics Data Review and Preliminary Review. SOP No. HW-6, Revision #8, dated January 1992. USEPA Region II.

USEPA, 1992b. Evaluation of Metals Data for the Contract Laboratory Program (CLP) based on SOW 3/90. SOP No. HW-2, Revision XI, dated January 1992. USEPA Region II.

# APPENDIX H – SITE MANAGEMENT FORMS

**Institutional and Engineering Controls Inspection Form**

## I. Site Information

**Site No.** **231109**

**Site Name** **Former West 45th Street Gas Works Site**

Site Address: Zip Code: **10001**

City/Town: **New York**

County: **New York**

Current Use:

## II. Site Conditions

- Physical characteristics of the Site
- Current site operations.

## III. Site Inspection Checklist

YES NO

1. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?

   If YES, is documentation or evidence that documentation has been previously submitted included with this certification?

2. Have any amendments and/or additional filings been recorded that may modify or supersede the Environmental Easement?

   If YES, is documentation

3. Have any federal, state, and/or local permits (e.g., building permit) been issued for or at the property since the initial/last certification?

   If YES, is documentation or evidence that documentation has been previously submitted included with this certification?

4. Has there been an actual or pending zoning or land-use change for the Restricted Area on which the Environmental Easement is filed?

   If YES, is documentation or evidence that documentation has been previously submitted included with this certification?

5. Have periodic inspections of the site identified any excavation or other disturbance activities that have taken place within the institutional control areas or other areas subject to the Interim Site Management Plan?

   If YES, is the new information or evidence that new information has been previously submitted included with this Certification?

6. Are OU-1 monitoring wells MW-7, MW-8, MW-9, MW-10, MW-11, MW-16, and MW-20 and OU-2 monitoring wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-19, MW-21, and MW-22 in good working condition?

   Provide the current condition of the vaults, covers, concrete and asphalts surfaces immediately surrounding the monitoring well.

**Control Certification Statement**

For each Institutional or Engineering control listed above, I certify by checking "Yes" that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(d) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control.

(e) if a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;

(f) use of the site is compliant with the deed restriction.

(g) the information presented in this report is accurate and complete.

(h) no new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

(i) the assumptions made in the qualitative exposure assessment remain valid.

**IC/EC CERTIFICATIONS**
**SITE NO. V00532-1**

**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I _____at_____,
print name print business address

am certifying as OWNER (Owner or Remedial Party) for the Site named in the Site Information Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

**QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE**

I _____at_____,
print name print business address

am certifying as a Qualified Environmental Professional for the

_____

(Owner or Remedial Party) for the Site named in the Site Information Section of this form.

_____ _____ _____
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification Stamp (if Required) Date

# APPENDIX I – RESPONSIBILITIES OF OWNER AND REMEDIAL PARTY

## Responsibilities

The responsibilities for implementing the ISMP for the Former West 45th Street Gas Works Site (the Site), number 231109, are divided between the Site owner(s) and a Remedial Party, as defined below.

The owner(s) of the Site parcel(s) related to on-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1092, Lot 16)

Manhattan Mini Storage, LLC (Block 1092, Lot 7R)

Hudson River Park Trust (Block 1107, Lot 30)

NYS Department of Transportation (Block 1107, Lot 21)

The operator(s) of the Site parcel(s) related to on-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1092, Lot 16)

Manhattan Mini Storage, LLC. (Block 1092, Lot 7R)

Intrepid Museum Foundation (Block 1107, Lot 21 and 30)

The owner(s) of the Site parcel(s) related to off-site OU-1 at the time of issuance of this ISMP is/are:

Nubee Corp. (Block 1091, Lot 1)

589 11th Management Corp. (Block 1092, Lot 29)

Carroll L. Cartwright, Georgette Nichols (Block 1092, Lot 30)

599 11th Ave. LLC (Block 1092, Lot 36R)

The operator(s) of the Site parcel(s) related to off-site OU-1 at the time of issuance of this ISMP is/are:

United Parcel Service, Inc. (Block 1091, Lot 1 )

589 11th Management Corp. (Block 1092, Lot 29)

Carroll L. Cartwright, Georgette Nichols (Block 1092, Lot 30)

599 11th Ave. LLC (Block 1092, Lot 36R)

The owner(s) of the Site parcel(s) related to OU-2 at the time of issuance of this ISMP is/are:

NYS Department of Transportation (Block 1093, Lot 9R)

The operator(s) of the Site parcel(s) related to OU-2 at the time of issuance of this ISMP is/are:

Intrepid Foundation (Block 1093, Lot 9R)

**Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out,** the term Remedial Party (RP) refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the NYSDEC is carrying out remediation or Site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

- Consolidated Edison Company of New York, Inc. (Con Edison)
  - Maurice Hanashy (Con Edison Project Manager) – 201-249-2200
  - Con Edison MGP Hotline – 877-602-6633

Nothing on this page shall supersede the provisions of Environmental Easement(s), Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

## Site Owner's Responsibilities:

1. The owner shall follow the provisions of the ISMP as they relate to future construction and excavation at the Site.
2. The owner shall be responsible for any ongoing maintenance required for the Cover System described in Sections 3.3.1 and 4.2.1 of this ISMP.
3. In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all ICs set forth in an Environmental Easement(s) remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the Site's PRR certification to the NYSDEC.
4. In the event the Site is delisted, the owner remains bound by the Environmental Easement(s) and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement(s) are still in place and have been complied with.
5. The owner shall grant access to the Site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the ISMP and assuring compliance with the ISMP.
6. The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. If damage to the remedial components or vandalism is evident, the owner shall notify the Site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 - Notifications.
7. If some action or inaction by the owner adversely impacts the Site, the owner must notify the Site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 - Notifications and coordinate the performance of necessary corrective actions with the RP.
8. The owner must notify the RP and the NYSDEC of any change in ownership of the Site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site properties. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: 60 days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the ISMP. A change of use includes, but is not limited to, any activity that may increase direct human or environmental exposure (e.g., day care, school or park). A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.
9. In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property.

The owner must otherwise comply with the tenant and occupant notification provisions of ECL Article 27, Title 24.

**Remedial Party Responsibilities**

1. The RP must follow the ISMP provisions regarding any construction and/or excavation it undertakes at the Site.
2. The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, PRRs and certifications, electronic data deliverables, corrective action work plans and reports, and updated ISMPs.
3. Before accessing the Site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the ISMP, a copy of any data generated during the Site visit and/or any final report produced.
4. If the NYSDEC determines that an update of the ISMP is necessary, the RP shall update the ISMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved ISMP to the owner(s).
5. The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (ECs). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.
6. The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the ISMP.
7. Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the ISMP, the RP shall submit to the NYSDEC for approval an amended ISMP.
8. Any change in use, change in ownership, change in Site classification (e.g., delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the ISMP and/or updated legal documents. The RP shall contact the NYSDEC project manager to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future Site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

**Summary of Green Remediation Metrics for Site Management**

Site Name: _____ Site Code: _____
Address: _____ City: _____
State: _____ Zip Code: _____ County: _____

**Initial Report Period (Start Date of period covered by the Initial Report submittal)**
Start Date: _____

**Current Reporting Period**
Reporting Period From: _____ To: _____

**Contact Information**
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

**I. Energy Usage:** Quantify the amount of energy used directly on site and the portion of that derived from renewable energy sources.

| | **Current Reporting Period** | **Total to Date** |
|---|---|---|
| Fuel Type 1 (e.g. natural gas (cf)) | | |
| Fuel Type 2 (e.g. fuel oil, propane (gals)) | | |
| Electricity (kWh) | | |
| **Of that Electric usage, provide quantity:** | | |
| Derived from renewable sources (e.g. solar, wind) | | |
| **Other energy sources** (e.g. geothermal, solar thermal (Btu)) | | |

*Provide a description of all energy usage reduction programs for the Site in the space provided on Page 3.*

**II. Solid Waste Generation:** Quantify the management of solid waste generated on site.

| | **Current Reporting Period (tons)** | **Total to Date (tons)** |
|---|---|---|
| **Total waste generated on site** | | |
| Operations, maintenance and monitoring generated waste | | |
| **Of that total amount, provide quantity:** | | |
| Transported off site to landfills | | |
| Transported off site to other disposal facilities | | |
| Transported off site for recycling/reuse | | |
| Reused on site | | |

*Provide a description of any implemented waste reduction programs for the Site in the space provided on Page 3.*

**III. Transportation/Shipping:** Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

| | **Current Reporting Period (miles)** | **Total to Date (miles)** |
|---|---|---|
| Standby Engineer/Contractor | | |
| Laboratory Courier/Delivery Service | | |
| Waste Removal/Hauling | | |

*Provide a description of all mileage reduction programs for the Site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the Site.*

**IV. Water Usage:** Quantify the volume of water used on site from various sources.

| | **Current Reporting Period (gallons)** | **Total to Date (gallons)** |
|---|---|---|
| Total quantity of water used on site | | |
| **Of that total amount, provide quantity:** | | |
| Public potable water supply usage | | |
| Surface water usage | | |
| On-site groundwater usage | | |
| Collected or diverted stormwater usage | | |

*Provide a description of any implemented water consumption reduction programs for the Site in the space provided on Page 3.*

**V. Land Use and Ecosystems:** Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

| | **Current Reporting Period (acres)** | **Total to Date (acres)** |
|---|---|---|
| Land disturbed | | |
| Land restored | | |

*Provide a description of any implemented land restoration/green infrastructure programs for the Site in the space provided on Page 3.*

| **Description of green remediation programs reported above**<br>(Attach additional sheets if needed) |
|---|
| Energy Usage: |
| Waste Generation: |
| Transportation/Shipping: |
| Water usage: |
| Land Use and Ecosystems: |
| Other: |

| **CERTIFICATION BY CONTRACTOR** |
|---|
| I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application.<br><br>_____<br>**Date** |