Consolidated Edison Co. of New York
Astoria, New York

East 115th Street Former MGP
Remedial Investigation Report

NYSDEC Site # V00540-2

ENSR Corporation
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1.0 INTRODUCTION

On behalf of Consolidated Edison Company of New York (Con Edison), ENSR has prepared this Remedial Investigation (RI) Report for the East 115th Street Former MGP site in New York, New York. The RI was conducted in accordance with the RI Work Plan (ENSR 2002) and fulfills the requirements of the Draft DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC 2002).

This section, which provides the project background, site description, current property use, site history and previous investigations, summarizes the available pre-RI information. Section 2 describes the RI field investigation activities and Section 3 discusses the results of the field investigation. The exposure assessment and conceptual remedial approach are presented in Sections 4 and 5, respectively. Supporting information is presented in the appendices and includes the field records (Appendix A), tables of analytical data (Appendix B), the community air monitoring report (Appendix C), Background PAH Concentrations (Appendix D), the Data Usability Summary Report (Appendix E) and the December 2002 Indoor and Ambient Air Sampling Results (Appendix F.).

1.1 Project Background

The former East 115th Street Manufactured Gas Plant (MGP) property (the "site") consists of approximately 5 to 6 acres extending north to south from 116th Street to 114th Street, and generally west to east from Pleasant Avenue to the Harlem River (Figure 1.1).

According to information provided by Brown's Directories of American Gas Companies and Public Service Commission Reports, the site was operated as a water gas MGP from 1895 to 1936. The MGP covered two city blocks (115th Street was present between Pleasant Avenue and the Harlem River during MGP operation). The MGP ceased operations in 1936 after which the site was dismantled within two years. In 1941, a school with a basement was erected on the property (over 115th Street) (Benjamin Franklin High School) and is still present today as the Manhattan Center for Science and Mathematics. During the approximately 40-year period of MGP operations, the plant used approximately 46,000 tons of coal, 9.4 million pounds of coke (for generating steam), 10.5 million pounds of gasoline, and 11,000 bushels (bu's) of oxide per year.

1.2 Site Description and Current Property Use

The site is located at 116th Street and Pleasant Avenue, New York, NY and is identified by the New York City Tax Map as Block 1713, Lot 1. Part of the previous MGP property included what is now FDR Drive and the Harlem River. Research indicates that the subject property was situated adjacent to a ferry station which is now occupied in part by the Harlem River. It is possible that the property was once part of a pier that is no longer present. No information is available regarding the construction or

demolition of MGP structures in this area. Currently, the site includes FDR Drive, west of which is a school. The location of the former MGP property and its extent were determined through review of Sanborn Insurance Maps. Figure 1.2 provides a plan of the site, which depicts current site features and boundaries.

1.3 Site History

This section summarizes the available information on the site history. This information has been developed from published sources (e.g., Brown's Directories) and maps (e.g., New York City tax maps).

1.3.1 Site Ownership

According to the directory of New York City Tax maps (listed by Block and Lot number), the property is currently owned by the City of New York. The property is improved with a school building known as the Manhattan Center for Science and Mathematics. In addition, the eastern portion of the site consists of a major highway, known as FDR Drive, and an adjacent walkway.

From 1887 to 1936, the site was owned by Standard Light and Gas Company of New York City. In 1937, the site was turned over to Con Edison. Although no records were found pertaining to site ownership from 1939 through 1951, it is likely that the City of New York has been the site owner since at least 1941, when the school was constructed on the property.

1.3.2 Site Operations

As noted earlier, from 1895 to 1936, the site was operated as an MGP by Standard Gas and Light Company of New York prior to being turned to over to Con Edison in 1937. According to Sanborn Insurance Maps and Brown's Directories, the site was not operated as an MGP while under the ownership of Con Edison. A 1939 Sanborn Insurance Map shows the site as empty and vacated of all MGP facilities. The same map indicated the presence of the Rubel Coal and Ice Plant (noted "not in operation") located along the south side of 116th Street between Pleasant Avenue and FDR Drive. Additionally, a storage yard was identified along FDR Drive. Based on available information, the school building was constructed in 1941. Figure 1.2 shows the locations of the former MGP operations and structures. These locations have been modified slightly based on the results of the RI field investigation described in Sections 2 and 3.

1.4 Previous Investigations

Prior to the investigations performed in accordance with the RI Work Plan, a site reconnaissance was conducted to evaluate for the presence of MGP related conditions and two rounds of site investigation

were performed to evaluate for the potential for sub-surface vapor intrusion into the basement of the Manhattan Center for Science and Mathematics. These activities are described below.

1.4.1 Site Reconnaissance

Site reconnaissance was conducted in April 2002 as part of a historical research investigation for the site. No evidence of MGP remnants at the site was observed. No reported on-site soil or groundwater contamination was identified during this historical research investigation.

1.4.2 Sub-Surface Vapor Intrusion Studies

In June and December 2002, Con Edison conducted an assessment of the potential for sub-surface vapor intrusion at the Manhattan Center for Science and Mathematics. The overall goal of the work was to ascertain whether air quality within the building was being impacted by residual subsurface impacts that might remain from the former MGP operations that had historically occurred on the property. Reports describing this assessment including the sampling procedures are provided with this report as Appendix F. A summary of the results is provided below.

In June 2002, a summer phase of work was performed. After an initial inspection of the building, 13 air samples were collected from the basement and first floor of the building. One of these samples was collected immediately in front of gasoline cans in the lawn mower storage area and, therefore, is referred to as a potential source characterization sample. Four air samples were collected from outside the building for comparison purposes. Five soil gas samples were collected from locations beneath and adjacent to the building. Additionally, subsurface soil samples were collected from a location beneath the building and subsurface soil samples and a groundwater sample were collected from a location adjacent to the building. The rationale for the selection of sampling locations is summarized in Appendix F.

In December 2002, the indoor air sampling was repeated to ascertain whether air quality within the building was being impacted by residual subsurface impacts that might remain from the former MGP operations that historically occurred on the property and to determine the impact of winter atmospheric and building conditions on indoor air quality. After an initial walk through of the building, ambient (outdoor) samples were collected followed by the collection of 13 air samples collected from the basement and the building and included one source characterization sample. These samples were collected as close as possible to the same locations as the samples collected in June 2002.

The ambient and indoor air samples were submitted for laboratory analysis of volatile organic compounds (VOCs) by US EPA Method TO-15 and EPA Method TO-15-Ozone Precursors. The purpose of the Ozone Precursors analysis was to aid in interpreting possible sources of hydrocarbons

found in the indoor air samples. The VOC analytical results for the ambient and indoor air samples from the June 2002 sampling are included in Appendix F. These analytical results show that:

- Hydrocarbons were detected in all of the samples,
- None of the results exceeded the worker guidance values (the lowest of the OSHA-PEL, NIOSH-REL, or ACGIH-TLV),
- None of the indoor air sampling results exceeded the 95th percentile of NYSDOH indoor air concentrations, and
- Only the source characterization sample collected directly in front of the gasoline containers had concentrations exceeding the 95th percentile of NYSDOH indoor air concentrations.

The Ozone Precursors analytical results are included in Appendix F. These analytical results show that:

- Hydrocarbons often associated with non-MGP petroleum fuels such as gasoline (2-methyl pentane, isopentane, 2,3-dimethyl pentane, isooctane, methyl tert butyl ether) were present in many samples,
- Hydrocarbons often associated with MGP coal tars (indane, indene, and thiophene) were not present in the indoor air samples, and
- Naphthalene, a constituent, commonly associated with MGP coal tars was notably absent in all of the indoor air samples.

The soil gas samples were submitted for laboratory analysis of VOCs by US EPA Method TO-15 and EPA Method TO-15-Ozone Precursors. These analytical results are included in Appendix F. The VOC analytical results show that:

- Of the 68 compounds analyzed, 26 were detected.

The Ozone Precursors analytical results show that::

- Several hydrocarbons typically associated with petroleum products were present in all five soil gas samples,
- One hydrocarbon (indan) typically associated with MGP tars was present in three of the five soil gas samples, and
- Naphthalene was notably absent or present in low concentrations in all of the soil gas samples.

The VOC analytical results for the ambient and indoor air samples from the December 2002 sampling are also included in Appendix F. These analytical results show that:

- Hydrocarbons were detected in all samples,
- None of the analytical results exceeded the worker guidance values, and two samples exceeded the 95th percentile of NYSDOH background indoor air concentrations
  - In the sample from room B-62, ethylbenzene, o-xylene, and m,p-xlyene exceeded the upper range of typcial background indoor air. These compounds appear to be associated with the gasoline that is stored nearby.
  - The source area characterization sample exceeded the guidance values for several constituents including MTBE, a non-MGP gasoline additive.
- Other non-MGP compounds, including Freon 12 (a refrigerant,) acetone, and chlorinated hydrocarbons were present in several samples at concentrations above the upper range of typical background.

The soil gas samples were analyzed for VOCs using EPA Method TO-15 and EPA Method TO-15-Ozone Precursors. The maximum detected concentration of these constituents detected in soil gas are included In Appendix F. The VOCs results show that::

- Of the 68 compounds analyzed 26 were detected in soil gas.

The Ozone Precursors analytical results are summarized in Appendix F. These results indicate that:

- Several hydrocarbons typically associated with petroleum products were present in all five soil gas samples,
- One hydrocarbon (indan) typically associated with MGP tars was present in three of the five soil gas samples,
- Naphthalene was notable absent or present in low concentrations in all of the soil gas samples.

Four soil samples, two collected from one boring beneath the cafeteria and two collected from the outside borehole were submitted for analysis by NYS ASP methods for TCL volatile organic hydrocarbones (VOCs), TCL semivolatile organic hydrocarbons (SVOCs), TAL Metals, Cyanide and pH. These analytical results, included in Appendix F, show the following:

- Three of the four soil samples contained individual VOCs (benzene, ethylbenzene, and xylenes) at concentrations exceeding the NYSDEC soil cleanup objectives provided in TAGM 4046 [NYSDEC, 1994].
- Samples SB-1A and SB-1B, collected from approximately 8 feet and 10 feet below the floor in the basement cafeteria, contained total VOC concentrations at 1,743 mg/Kg and 1,345 mg/Kg (estimated values), respectively. These concentrations exceed the NYSDEC soil cleanup objective of 10 mg/kg for total VOCs.
- All four of the soil samples contained individual polycyclic aromatic hydrocarbons (PAHs) at concentrations that exceeded the NYSDEC soil cleanup objectives. Three samples, SB-1A and SB1B from the cafeteria location, and SB-5A from the outside location east of the cafeteria, contained total SVOC concentrations in excess of the NYSDEC cleanup objective of 500 mg/Kg for total SVOCs.

A sample from each borehole was collected and submitted to META Environmental, Inc. for GC/FID Fingerprint analysis. The results of these analyses indicate that a substance associated with coal combustion, probably an MGP carburetted water gas tar, was present in the sample collected from the soil boring SB-1 at 9.5 feet to 10 feet below the floor level. A mixture of a similar MGP-related substance and a petroleum-related material consistent with lube oils and some hydraulic fluids was present in sample SB-5FP collected at 12 feet to 12.5 feet below grade surface.

One groundwater sample, collected from one boring outside the building was submitted for analysis by NYS ASP methods for TCL VOCs, TCL SVOCs, TAL Metals, Cyanide and pH. These analytical results, included in Appendix F, show the following:

- Several VOCs, SVOCs and metals were present at concentrations exceeding the Class GA groundwater quality standards or guidance values contained in NYSDEC Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1.) [NYSDEC, 1998]. It should be noted that this sample was collected from a temporary well point and may not be representative of the groundwater characteristics at that location.

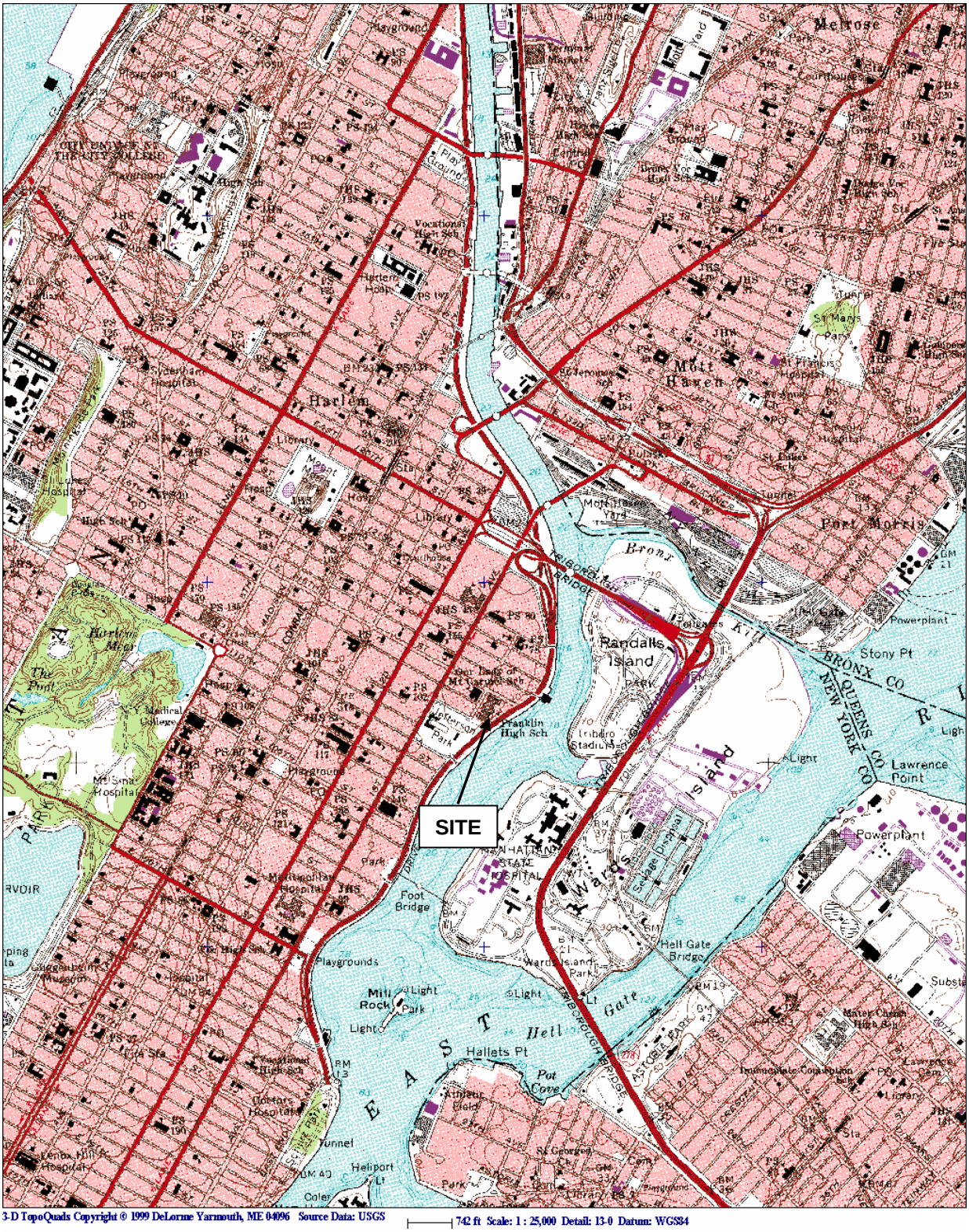
In summary, the soil gas samples contained some VOCs that were clearly not MGP-related and some VOCs that could be related to both the non-MGP petroleum products and the MGP-related materials identified in the soil samples collected from the same bore holes. Some of the soil gas samples contained VOCs at concentrations that were an order of magnitude higher than typical values for indoor air.

However, none of the summer indoor air sampling results exceeded the 95th percentile of NYSDOH background indoor air concentrations. Only a source characterization sample, which was collected directly in front of the gasoline containers, had concentrations exceeding the 95th percentile.

Furthermore, VOCs that are typically related to MGP tar materials were not detected in any of the summer indoor air samples. Generally higher concentrations of VOCs were measured in samples collected in the winter than in the summer, it is not clear whether this is due to the painting and cleaning activities that were being conducted during the winter sampling event of the fact that the building is more tightly closed than during the summer sampling event. During the summer sampling, only one compound that could be associated with MGP residuals (styrene) was detected in the basement hallway sample, however, it was detected at a very low concentration and was also detected in the area near a gasoline source.

Therefore, based on the results of this sampling, the indoor air quality did not appear to be impacted by sub-surface intrusion of MGP-related vapors. At the same time, the results of soil and groundwater analyses indicated the presence of subsurface MGP impacts underneath and adjacent to the school building.

The sampling data were provided to the NYSDEC and NYSDOH for review. The September 17, 2003 letter from the NYSDOH and the October 7, 2003 letter from the NYSDEC, copies of which are included in Appendix F of this report, describe the Departments' evaluation of the data that states "…the DOH has not identified the need for an initial response action at this time to reduce exposure at the site". The NYSDEC's letter also indicates that "the potential impact of soil gas on indoor air could not be fully evaluated since potential sources of chemicals found in the indoor air were identified within the building." The Departments' requested that once these potential sources are removed or isolated, additional sampling should be performed to re-evaluate the potential for soil gas infiltration.



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SITE LOCATION MAP

FORMER MGP SITE
EAST 115th STREET
NEW YORK, NEW YORK

DRAWN BY:	DATE:	PROJECT NUMBER:
KAG	07/19/02	01869-055

FIGURE NUMBER

1.1

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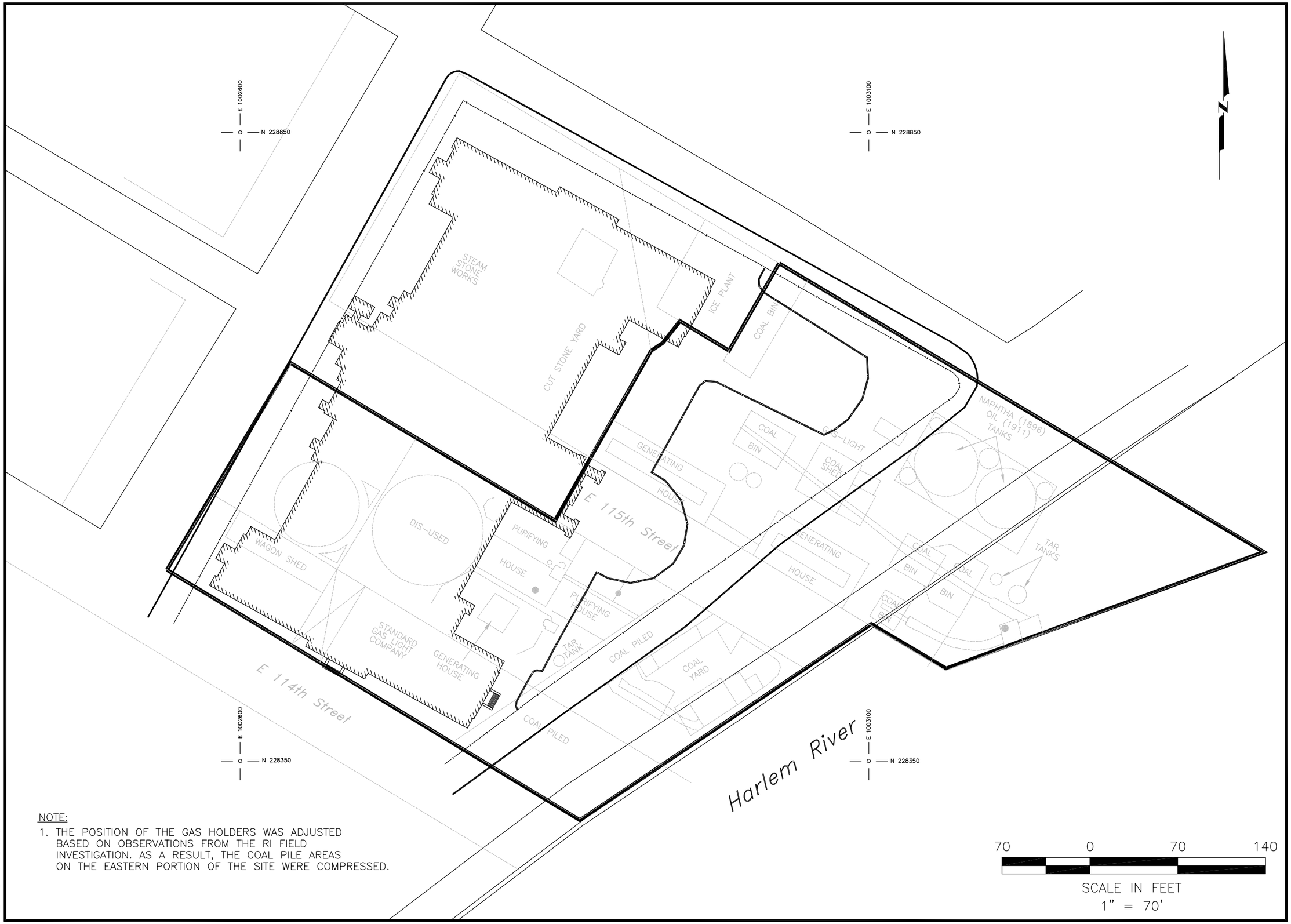

NOTE:

1. THE POSITION OF THE GAS HOLDERS WAS ADJUSTED BASED ON OBSERVATIONS FROM THE RI FIELD INVESTIGATION. AS A RESULT, THE COAL PILE AREAS ON THE EASTERN PORTION OF THE SITE WERE COMPRESSED.

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HISTORIC SITE FEATURES CONSOLIDATED EDISON EAST 115TH STREET FORMER MGP NEW YORK, NY

SCALE:	DATE:	PROJECT NUMBER:
1" = 70'	10/03	01869-055-700

FIGURE NUMBER:

1.2

SHEET NUMBER:

1

2.0 FIELD INVESTIGATION PROGRAM

This section summarizes the field activities conducted as part of the RI. These activities, conducted between August 18, 2003 and September 5, 2003, included surface soil sampling, test pitting, soil borings, and monitoring well installation and included the collection of surface soils, subsurface soils, and groundwater samples for laboratory analysis. The field records for this investigation are included as Appendix A. All of the activities described during the RI were conducted in accordance with the Remedial Investigation Work Plan, Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP) (ENSR 2002).

2.1 Underground Utility Clearance

A mark-out of underground utilities in the drilling and excavation areas was completed prior to the start of work using the Utility Clearance Process for Intrusive Activities developed by the Con Edison Environmental Health and Safety Remediation Group. The underground utility clearance process included a Code 753 mark out, review of available as-built maps of utilities, a mark-out by a private utility locator using electromagnetic and geophysical prospect techniques and Ground Penetrating Radar (GPR) to check for the possibility of non-metallic utilities. All borings and monitoring wells were advanced using hand tools for the first five feet. No underground utilities were encountered during the remedial investigation.

2.2 Air Monitoring

Air monitoring was conducted during site investigation activities to provide protection for site workers, building occupants, and the surrounding community. The air-monitoring activities included community air monitoring for all investigation activities conducted outdoors and indoor air monitoring for investigation activities conducted within the basement of the school building. Worker air monitoring was conducted during all of the investigation activities as described in the HASP.

2.2.1 Community Air Monitoring

Community air monitoring during site investigation activities was conducted to provide a measure of protection for the downwind community (i.e., off-site receptors and on-site workers not directly involved with the subject work activities) from potential airborne constituent releases as a direct result of the investigation activities. The requirements for the community air monitoring were taken from the NYSDOH Generic Community Air Monitoring Plan (NYSDOH, June 2000).

Ambient VOC concentrations were monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis for ground intrusive activities (e.g., test pit excavation,

advancement of soil borings and installation of monitoring wells). Periodic monitoring for VOCs was conducted for non-intrusive activities (e.g., surface soil sampling, groundwater sampling, etc.). Real-time particulate concentrations were monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary monitoring stations. Additionally, fugitive dust migration was visually assessed during all work activities.

The community air monitoring program included action levels which, if exceeded would require either a change in field operations (e.g., apply water to control dust) or a halt to field activities. At no time during the RI field activities were any of these action levels exceeded. A detailed report summarizing the community air monitoring program is included with this RI as Appendix C.

2.2.2 Indoor Air Monitoring

Indoor air monitoring was conducted during advancement of soil borings in the basement of the school building to provide a measure of protection for workers within the exclusion zone and for building occupants. Drilling activities were conducted at times of minimal occupancy to reduce the disturbance to building operations.

Measures were taken during drilling to mitigate dust, odors, and vapor generation. These measures included isolating boring locations by closing interior doors, lining all work surfaces with polyethylene sheeting, shutting off the Geoprobe™ rig when not in use, and covering borings when not actively advancing the boring. Adequate ventilation to reduce potential exposure via inhalation of dust and/or vapors from the subsurface was achieved by using fans and ducted vent blowers to direct dust and vapors to the exterior through open windows. The exhaust from the Geoprobe™ rig was vented to the exterior via a vent blower and ductwork connected directly to the exhaust pipe.

Vapor generation and fugitive dust migration from the ventilation activities were monitored, both electronically and visually, in conjunction with the community air monitoring activities. In accordance with the HASP, the following constituents were monitored continuously during indoor drilling activities (with the respective action levels noted in parentheses):

- VOCs (1 ppm based on the potential presence of benzene in the subsurface)
- Carbon monoxide - CO (25 ppm)
- Oxygen (19-23.5 ppm)
- Lower Explosive Limit - LEL (10%)
- Hydrogen Sulfide (10 ppm)
- Particulate (2.5 mg/m^3)

- Hydrogen Cyanide (5 mg/m^3)

VOCs were measured with a MiniRAE 2000 PID equipped with a 10.6 eV lamp to monitor the vapor generation from the subsurface. PID readings of the air immediately above each of the borings were generally low (0-50 ppm) with spikes of up to 750 ppm at SB-01 and SB-07. However, the readings of ambient air within the worker's breathing zone were below the 1 ppm action level at most of the borings due to adequate ventilation. PID readings in the breathing zone exceeded the 1 ppm action level at borings SB-1 and SB-7 for periods of less than 15 minutes. Work was temporarily suspended several times at these locations to allow the ventilation system to remove the vapors from the exclusion zone.

The CO, oxygen, LEL, and hydrogen sulfide levels were measured with an Industrial Scientific multi-gas meter to monitor the build up of exhaust gas within and around the work area inside the building. CO levels exceeded the 25 ppm action level at borings SB-6B and SB-11A/B with readings as high as 450 ppm at SB-6B. In each instance work was temporarily suspended until the work area could be ventilated and the CO levels reduced to below 25 ppm. The ventilation patterns were successfully reconfigured at both locations to reduce the build up of exhaust within the work zone and along the ventilation pathways through adjacent rooms. The LEL, oxygen, and hydrogen sulfide action levels were not exceeded during the indoor investigation activities.

Particulate levels were measured via an MIE Data-RAM total dust meter to monitor dust generation. The highest reading observed during the indoor investigation activities was 0.3 mg/m^3, well below the 2.5 mg/m^3 action level. Visual observation of the indoor investigation activities indicated that dust generation was minimal and that fugitive dust migration did not pose a threat to the workers or building occupants.

Monitoring for hydrogen cyanide (HCN) gas was not conducted during indoor investigation activities as the characteristic blue staining associated with the presence of ferrocyanide was not observed in soil at any of the interior borings. In accordance with the HASP, a draeger pump kit with hydrocyanic acid 2/a detector tubes (CH25701) was available to perform the monitoring in the event that the blue staining was encountered.

In accordance with the HASP, all of the instruments used to monitor indoor air were calibrated according to manufacturer's specifications prior to the start of work each morning.

2.3 Surface Soil Sampling and Analysis

Surface soil samples were collected from nine locations (SB-1 through SB-9) across the site to evaluate potential public health exposures. The locations are shown on Figure 2.1. Samples were collected only from areas not covered by impermeable surfaces (e.g., building, pavement, etc.). A summary of the surface soil samples, including sample location, sample ID, depth, date collected and

analyses performed, is presented in Table 2.1. Surface soil sampling activities were complete before the start of intrusive activities.

2.3.1 Surface Soil Sampling Procedures

Surface soil samples were collected using pre-cleaned stainless steel trowels and bowls. At each sample location, surface vegetation was removed and the sample was collected from within a square meter from a depth of 0- to 2-inches. Each sample was collected as a composite of five discrete samples, four from the corners and one from the center of the square meter area at each location. Soil at each location was visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. The soil at each location consisted of dry, dark brown sandy topsoil (loam). Occasional glass fragments were encountered in the surface soil but were not incorporated into the samples submitted to the laboratory. Soil headspace samples, measured in Ziploc bags, were screened for VOCs with a PID; readings ranged from 7.2 to 19.5 ppm. No staining or odors were observed in any of the surface soil samples.

2.3.2 Surface Soil Analyses

Surface soil samples were submitted to Severn Trent Laboratories (STL) in Buffalo, NY for analysis of TCL SVOCs, TAL Inorganics, and cyanide. The results of these analyses are presented in Appendix B and are discussed in Section 3.

2.4 Test Pit Excavation, Sampling, and Analysis

Test pit excavations were conducted at five locations to determine whether the remains of the historic MGP structures (e.g., gas holders, tar tanks, etc.) are still present at the site and to evaluate whether the materials contained in those structures, if any, have resulted in impacts to subsurface soil. Where possible the test pits were excavated into the water table to evaluate for potential MGP impact on groundwater.

2.4.1 Test Pit Excavation Procedures

Five test pits or series of test pits (TP-1 through TP-5) were excavated at the site as shown on Figure 2.1. The test pit locations were selected to evaluate potential subsurface structures and characterize subsurface soil in the vicinity of the former gas holder(s), purifying house(s), coal bin(s), and tar tank(s).

Test pits were excavated using a small rubber-track excavator to the top of the foundations and/or floor slabs of the various structures encountered (2 to 10 feet), or to the maximum depth capacity of the excavator (10 feet). Soil and other material encountered within the test pit excavations were visually

classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. Soil headspace samples collected in Ziploc bags were screened for VOCs with a PID.

Excavated soil was staged on polyethylene sheeting during test pit excavation activities with the top layer of soil staged separately. Upon completion of excavation, logging and sample collection, the subsurface staged soils were returned to the excavation, covered with the top layer of soil, and compacted with the excavator. The excavator bucket was decontaminated between test pits.

Once all test pit excavations were complete, clean sandy loam fill material was brought onto the site and spread over the test pit excavation areas which were then graded and compacted using a small Bobcat rig. The areas were then seeded to complete the restoration.

Each of the test pits was excavated into the fill unit that generally consisted of sand, silt and gravel. Materials encountered in most of the test pits included crushed building debris, black clinkers, slag, stone, and lime. In some test pits, non-aqueous liquid (NAPL) was also observed at the water table.

Test pit TP-1A and TP-1B were excavated in the grass area northwest and in front of the school in the area of the small gas holder. TP-1A was excavated parallel to the school as a series of short pits in order to avoid cutting through tree roots in the top 1-2 feet of land surface. Soil encountered consisted of visually clean sand and gravel amongst brick and a small diameter pipe. No staining or odors were noted and PID headspace readings ranged from 0 - 13.2 ppm. A brick wall that was inferred to be the outer wall of the small gas holder was encountered in TP-1A. Test pit TP-1B was excavated perpendicular to TP-1A to confirm the limits of the gas holder. Tree roots limited the area available to excavate test pit TP-1B and the brick wall observed in test pit TP-1A was not observed in test pit TP-1B. Based on the observed location of the edge of the gas holder, its historic position was adjusted as shown on Figures 1.2 and 2.1. NAPL was not observed in either of these test pits.

TP-2 consisted of a series of four pits, TP-2A through TP-2D that were excavated in the grass area immediately southeast of the school building in the vicinity of the former purifying house. Materials encountered in TP-2A mainly consisted of crushed demolition debris from former brick structures (likely the former purifying house) mixed with sand and gravel. Brick, concrete, metal, asphalt, and wood comprised the bulk of the matrix. No staining, odors, or NAPL were noted and PID headspace readings ranged from 0 to 7.9 ppm. Intact sections of the purifying house were encountered within TP-2B, TP-2C, and TP-2D including piping, valve stems, metal beams, and metal roofing material. A brick structure (possibly intact) was encountered in the north-south section of TP-2D but it did not appear to be the southeastern edge of the large gas holder. What appeared to be the western interior wall of the purifying house was encountered in TP-2D, and based on the position (approximately 9 feet from the school building) relative to the scale from the Sanborn maps, the western edge of the large holder would likely lie just under the building.

A pipe wrapped in potential asbestos containing material (ACM) was encountered at a depth of approximately two feet in the east-west section of TP-2D. A sample of the pipe wrap material was collected and submitted for analysis. The small amount of the pipe wrap material that had been excavated from the test pit prior to identifying the material as potential ACM was collected and sealed in a 5-gallon bucket, appropriately labeled, and temporarily stored onsite pending the outcome of the analytical results. The excavated soil was wetted down to reduce the potential for dust generation, and the test pit was backfilled with the pipe and remaining pipe wrap in place.

TP-3 consisted of three test pits, TP-3A through TP-3C, that were excavated near the south corner of the property in the vicinity of a former tar tank. Soil encountered in TP-3A consisted of brown sand and gravel fill with cobbles to a depth of approximately 7.5 feet below grade. The fill was underlain by a gray-brown clay that was visually clean and free of odor to a depth of 8 feet, below which the clay turned black with a noticeable sheen and a strong petroleum-like odor was noted. The PID reading of this material was 495 ppm. The water table and a NAPL sheen was observed at a depth of approximately 10 feet below ground surface. Test pit TP-3B was excavated north of TP-3A and encountered the same brown sand and gravel fill with some cobbles and bricks to a depth of 7.5 feet, and the same black clay with strong odor. The odor was consistent with the odor in TP-3A. The water table and a NAPL sheen was encountered in test pit TP-3B at a depth of 7.5 feet below existing grade.

TP-3C was excavated in line with and approximately 20 feet to the northeast of and on the other side of a tree from TP-3A. Test pit TP-3A was not continued in this direction so that the tree roots would not be damaged. The soil profile encountered at TP-3C was similar to that at TP-3A; however, at 4.5 feet, a layer of lime-like material was encountered on the east side of the pit. This lime-like material extended at least to the water table, which was the bottom of the pit. A NAPL sheen was also observed on the water surface.

TP-4 was excavated as three separate pits, TP-4A through TP-4C, located in the vicinity of the southeastern most section of the purifying house, to the southeast of TP-2, and to the northeast of TP-3. Soil encountered in TP-4A consisted of sand and gravel fill with some demolition debris from 0-6.5 feet with crushed stone below. A thin layer of white lime-like material, similar to that observed in TP-3C, was present above the crushed stone. The water table was encountered in this test pit at a depth of 8 feet below original grade. A strong odor and NAPL sheen was observed on the water at the bottom of the pit. The PID readings of the materials where the sheen was observed were around 500 ppm.

Excavation at TP-4B was limited due to a concrete pad encountered at a depth of 5 feet. Test pit TP-4C was excavated to the southeast of TP-4A and 4B and adjacent to the property fence. Material encountered in TP-4B and TP-4C was visually clean brick and concrete with sand and gravel fill. No staining or odors were noted and no PID readings above background were observed.

During the excavation of test pit TP-4C the end of a small (approximately 2-inch diameter) pipe was exposed and water contained in the pipe drained into the test pit. This pipe did not extend through the test pit and no indication that the pipe had been broken by the excavator was evident. Con Edison reported this event as a possible release to the NYSDEC and obtained a release reporting number of 149956. Absorbent pads were placed in the test pit to recover any potential sheen and the water entering the test pit was pumped into 55 gallon drums for off-site disposal. A sample of the water was also submitted for analysis of PCBs and total petroleum hydrocarbons (TPH). The analytical results show that no PCBs or TPHs were detected.

TP-5 was excavated as four individual test pits, TP-5A through TP-5D, located in the grass on the northeastern quadrant of the property, in the vicinity of the former coal bin and coal shed. Excavation was limited to a depth of 3 feet in some areas of TP-5A due to the presence of a brick structure. No staining or odors were noted in this area, and no PID readings above ambient conditions were observed.

TP-5B, which was excavated parallel to and a few feet northeast of TP-5A, encountered the same brick structure, which was approximately 4 feet wide in TP-5B. The test pit extended to a depth of 6 feet where a small quantity of white material with some dark stones was encountered. Black clinker/slag material was encountered in TP-5B between 3 and 6 feet below grade. No PID readings above ambient conditions were observed at this test pit.

TP-5C was excavated parallel to and a few feet northeast of TP-5B. The soil profile of TP-5C was the same as that of TP-5A and TP-5B including the 4-foot wide brick wall. No PID readings above ambient conditions were observed at this test pit.

Once TP-5A through TP-5C were completed and backfilled, TP-5D was excavated perpendicular to the first three pits in an attempt to locate the end of the brick structure. TP-5D uncovered a large portion of the structure at the southeast end of the TP-5A through TP-5C. The brick structure was uncovered to a point where an apparent bend in the wall started. The soil profile in TP-5D was similar to that of TP-5A through TP-5C and no PID headspace readings above ambient conditions were observed.

2.4.1.1 Test Pit Soil Sampling and Analyses

Subsurface soil samples were collected from each test pit in accordance with the procedure outlined in the FSP as described below. One soil sample from each test pit, or series of test pits, was submitted to STL for analysis of TCL VOCs, TCL SVOCs, TAL inorganics, and cyanide. Additionally, select soil samples were submitted for analysis of Toxicity Characteristic Leaching Procedure (TCLP) analysis of VOCs, SVOCs, and inorganics. Soil samples were selected based on PID screening and/or visual

evidence of impact. If no such evidence was observed, the soil sample was collected from the base of the test pit. The results of these analyses are presented in Appendix B and discussed in Section 3.

2.4.1.2 Test Pit Waste Sampling

A sample of a pipe wrap material was collected from TP-2D and analyzed for the presence of asbestos. The results indicated that the sample was ACM. The small amount of the pipe wrap material that had been collected and temporarily stored onsite was released for subsequent disposal by Con Edison.

A sample was collected of the white lime-like material from TP-3B and submitted to STL for analysis of TCL VOCs, TCL SVOCs, TAL inorganics, cyanide, sulfate and sulfite. The analytical results indicate that the white material is likely lime (due to the low sulfite, sulfate, and sodium concentrations, and elevated calcium concentrations). The soil pH is also relatively low (8.3) compared to lime, so the white material appears to be weathered or "spent". The white material also had a sulfur odor (even though the sulfite and sulfate concentrations were low) and was non-detect for cyanide.

2.4.1.3 Test Pit Water Sampling

A sample of water (ID = 149956) that discharged from the buried pipe into TP-4C was collected for analyses of PCB Aroclors (Method 8082) and oil characterization (Method 310.13). The results of these analyses indicated no detectable levels of PCBs or oil in the sample.

2.4.1.4 Test Pit NAPL Sampling

The only NAPL observed in the test pits was a sheen on the water table at test pits TP-3 and TP-4. Insufficient NAPL was observed in these test pits to collect a sample for characterization. A NAPL sample, therefore, was not collected from the test pits for analysis.

2.5 Soil Boring Advancement, Sampling, and Analysis

Soil borings were advanced at nineteen locations across the site (SB-1, SB-5R, SB-6, SB-7, SB-8, SB-9, SB-10, SB-11, SB-12, SB-13, SB-14, SB-15, SB-16, SB-17, MW-1, SB/MW-2, SB/MW-3, MW-5, and SB/MW-6) to characterize the nature of subsurface materials, to evaluate whether the former MGP operations at the site have resulted in impacts to subsurface soil, and to confirm the presence of former MGP structures. Note that borings and wells SB-1 and MW-1, and SB-5R and MW-5 are not collocated (in contrast to SB/MW-2, SB/MW-3 and SB/MW-6) and, therefore, do not correspond to the same locations on Figure 2.1.

Several changes in the locations of borings were made during the field program based on site conditions and access and with the approval of the on-site NYSDEC representative, Joseph Moloughney.

- Monitoring well MW-5 was originally located in the sidewalk in front of the school and was intended to be outside of the small gas holder. Test pit TP-1 showed that the gas holder was located further from the sidewalk than anticipated from historical information which allowed relocation of the well off the sidewalk and on the school property. This well, therefore, was relocated 15 feet to the east of the original location.
- Soil boring SB-5 encountered a subsurface obstruction and was moved from the location shown in the Work Plan to the soil gas survey location of SB-5. Because of this move, the soil boring was relabeled SB-5R.
- Soil boring SB-10 was originally located near test pit TP-1 and the new location of MW-5. This boring was relocated because visual evidence of MGP constituents were not observed in TP-1 within the small gas holder and because the relocated MW-5 was close to the original location of SB-10. Therefore, SB-10 was relocated to near test pit TP-3.
- Monitoring well MW-4 and soil boring SB-17 were to be installed in the walkway between FDR Drive and the Harlem River. However, based on the available construction records, that section of the FDR Drive and walkway is constructed on closely spaced piles and angled brace pilings that are capped by wooden planking. Although Con Edison is continuing its efforts to obtain the required work permits from New York City Department of Transportation (NYCDOT) and NYC Parks Department, the installation of MW-4 and SB-17 may not be possible due to the construction design of the walkway.
- The proposed location of soil boring SB-15 was in an area underlain by a concrete slab. This boring, therefore, was relocated approximately 30 feet to the southeast onto the grassy area. In response to the presence of NAPL globules at SB-14, SB-15, and MW-3, a soil boring was added northwest and upgradient of SB-15. This boring was labeled SB-17.

All other borings and monitoring wells were located as proposed in the work plan.

2.5.1 Indoor Soil Boring Advancement, Sampling and Analysis

Soil borings were advanced through the basement floor at eight locations within the school building (SB-1, SB-6, SB-7, SB-8, SB-9, SB-11, SB-12, and SB-13) as shown on Figure 2.1. The boring locations were selected based on the historic orientation of the gas holders in order to assess subsurface conditions both within and outside of the gas holders. At three locations (SB-6, SB-11, SB-13), multiple borings were advanced because obstructions were encountered. At these locations, an A, B, or C designation was added to the boring identification to distinguish between the different borings.

2.5.1.1 Indoor Soil Boring Procedures

The utility clearance screening for the site included the indoor borings locations, which were adjusted slightly based on the utility screening results. Prior to commencing the indoor investigation activities, asbestos-containing floor tiles were removed from boring locations by a licensed asbestos abatement contractor. Tiles were removed from several places at each boring location to provide an alternate location if an obstruction was encountered. Four-inch diameter holes were then cored through the concrete floor using a portable electric core drill. In order to eliminate the potential for exposure to potential lead paint chips or dust, and in accordance with Con Edison policy, duct tape was placed on the painted locker room floor prior to coring at locations SB-8, SB-9, and SB-11C. Following coring of the concrete floor, small-diameter soil borings were initially advanced by hand auger within the core hole to confirm that subsurface utilities were not present at the boring locations.

Following utility clearance, the soil borings were advanced through the pre-cored holes in the floor using a rubber-track Geoprobe™ rig, except for borings SB-8, SB-9, and SB-11C in the locker room, which were advanced using an electric jackhammer with Geoprobe™ sampling tools. Each boring was advanced to refusal (on the bottom of a gas holder or other MGP structure) or to the first competent confining layer (clay) encountered. Each refusal was visually confirmed to be concrete based on chips in the tip of the sample liner at all but SB-1 where no visual evidence of concrete was recovered. A total of twelve borings were advanced at the eight locations due to refusals at locations SB-6A (1.5 feet), SB-11A (8 feet), SB-11B (8 feet), SB-11C (3 feet), and SB-13A (6 feet).

Soil samples were collected in 4-foot long acetate liners from the base of the concrete floor to the completion depth. A closed-piston sampler was used beneath the water table in order to obtain discrete (intact) soil samples from each sample interval.

Upon completion, each boring was backfilled with hydrated bentonite pellets to the base of the concrete floor, which was then sealed with concrete. Once the concrete had dried, each location was marked with the boring ID and total depth. New floor tiles were installed and photographs were taken at the completion of work to document restoration.

All soil cuttings generated from the indoor borings were placed within 55-gallon drums, sealed, and labeled for temporary onsite storage.

2.5.1.2 Indoor Soil Boring Analyses

Soil samples retrieved from each boring were visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. Soil headspace samples in Ziploc bags were screened for VOCs with a PID.

Soil encountered within the small gas holder at boring SB-8 consisted of visually clean sand and silt (reworked fill) with very little debris (brick fragments) and PID headspace readings less than 10 ppm to a refusal depth of 9 feet. Fill material with the same general composition was encountered at borings SB-11A and SB-11B which both encountered refusal on concrete at 8 feet. Based on the position of the small gas holder as defined by the observations from TP-1, borings SB-11A and SB-11B appear to be just within the small holder. A broken up concrete layer was encountered at approximately 2-3 feet in both SB-11A and SB-11B. Although the concrete layer appeared to be horizontal, it could not be determined whether it was a slab or a large chunk of debris.

At borings SB-1 and SB-7 within the large gas holder, soil encountered above the saturated zone consisted of visually clean sand, silt and gravel with mixed fill material (brick, concrete and coal fragments). Mixed fill material consisting of sand, silt, gravel, bricks, concrete, coal fragments, and metal was encountered in the saturated zone from 5-6 feet to the bottom of each boring. Wood fibers were also encountered in SB-7. Mild staining was observed in the top of the saturated zone, and NAPL saturation and PID headspace readings increased with depth in each boring. PID headspace readings ranged from 985 to 9,999 ppm at SB-1 and 3,559 to 4,732 ppm at SB-7.

Soil encountered at boring SB-6B consisted of visually clean fill (sand, silt, and gravel) to approximately 4-6 feet below the floor underlain by native sands to a red/tan clay at 21 feet. A layer of black fine to medium sand with mild odor, minor staining and PID headspace readings of 29 and 65.5 ppm was encountered between 7 and 10 feet below the floor. This boring appears to be located outside of both gas holders.

Soil encountered at SB-9 consisted of fill (sand, silt, and concrete chunks) to approximately 6 feet below the floor underlain by native sands to a red/tan clay layer at 22.5 feet. A few thin layers of black fine to medium sand with mild odor, slight sheen and a PID headspace of 129 ppm were encountered just above the water table from 4-6 feet. The one foot of soil recovered from the 10-14 foot sample interval consisted of fine to coarse sand with sheen, black staining, strong odor and a PID headspace of 502 ppm. The remainder of the native sand layers as well as the clay layer did not have any other evidence of impact. This boring appears to be located outside of both gas holders.

Soil encountered at SB-12 consisted of fill (sand, silt, gravel, brick, metal, concrete, and coal fragments) to approximately 4 feet below the floor underlain by native organic silt to clay from 4-9 feet, a gray-black peat layer from 9-12 feet, and fine sands that grade into silt and finally to a red/tan clay layer at 21 feet. Sheen, odor, and mild staining were observed at 8-9 feet however no visible NAPL was observed. PID headspace readings ranged from 3.5 to 524 ppm with the highest readings in the silt/clay and peat layer between 6-10 feet. This boring appears to be located outside of the large gas holder.

Soil encountered at SB-13B consisted of fill (sand, silt, gravel, brick, concrete, and coal fragments) to approximately 7 feet below the floor underlain by native fine sand that grades to silt and finally to a red/tan clay layer at 21 feet. Visual impacts were observed within the shallow fill and in discrete sand layers between 8 and 16 feet and 20 to 21 feet. NAPL saturated sand was observed between 8 and 12 feet with NAPL globules in soil from 12 to 16 feet. PID headspace readings ranged from 2.3 to 724 ppm with the highest readings coinciding with the NAPL saturation from 8-12 feet. This boring appears to be located outside of the large gas holder.

Saturated soil was encountered in each of the indoor borings between 5-6 feet beneath the basement floor. Based on the uniform depth to saturated soil beneath the building, which also correlated well to the elevation of the water table around the building, it appears that groundwater on the inside of the former gas holders is in equilibrium with groundwater on the outside of the gas holders.

Based on the depths of refusal, soil encountered, and the historic orientation of the gas holders, it appears that borings SB-1 and SB-7 are located within the large gas holder, borings SB-8, SB-11C and likely SB-11A and SB-11B are located within the small gas holder, and that borings SB-6, SB-7, SB-12, and SB-13 are located outside of the gas holders. Additionally, it appears that NAPL or any other residual MGP materials are not present in the small gas holder, but that NAPL is present both within and outside of the large gas holder.

Indoor Soil Boring Soil Samples

Two subsurface soil samples were collected from each soil boring with the exception of borings SB-11B and SB-11C (no samples), SB-8 and SB-11A (one sample each), and SB-12 and SB-13 (three samples each). The samples were submitted to STL for analysis of TCL VOCs, TCL SVOCs, TAL inorganics, and cyanide.

A summary of soil samples collected from the indoor borings is presented in Table 2.1. The results of the chemical analyses are presented in Appendix B and discussed in Section 3.

Indoor Soil Boring NAPL Samples

One sample of NAPL was collected from the bottom of boring SB-1 (SB-01 (20)). The NAPL had a strong mothball-like odor and a consistency similar to a viscous tar. The sample was submitted to META Environmental Laboratory for NAPL fingerprinting and to Queens University for analysis of physical parameters (density, viscosity, and kinematic viscosity). The results of these analyses are presented in Appendix B and discussed in Section 3.

2.5.2 Exterior Soil Boring Advancement, Sampling and Analysis

Exterior soil borings were advanced at eleven locations across the site (MW-1, MW-2, MW-3, MW-5, MW-6, SB-5R, SB-10, SB-14, SB-15, SB-16, and SB-17) as shown on Figure 2.1. The boring locations were selected based on the historic orientation of former MGP structures. SB-5R was advanced adjacent to the previous soil gas boring SB-5. As discussed in Section 2.5, SB-17 and MW-4 were not advanced/installed through the walkway across the FDR Drive because the required permits had not been obtained at the time of the field program. Since then, additional information has shown that the construction of the walkway support structure may prevent drilling in that area. Boring SB-17 was relocated from the planned location on the walkway across the FDR Drive to the grassy area east of the school.

2.5.2.1 Exterior Soil Boring Procedures

Prior to advancing the soil borings with a drill rig, the sampling locations were hand cleared to five feet below ground surface to verify that each location was clear of subsurface utilities or other obstructions. All of the soil borings were advanced through pre-cleared holes using a hollow stem auger (HSA) drill rig except for borings SB-5R, SB-14, SB-16, and SB-17 which were advanced using a rubber-track Geoprobe™ rig. Each boring was advanced to the first competent confining layer (clay) or to bedrock refusal if a competent confining layer was not encountered. Additionally, MW-5, located in an apparent non-impacted upgradient location, was advanced through the clay layer to bedrock to provide information on the geology to bedrock beneath the site. Soil samples retrieved from each boring were visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts.

HSA drill rig soil samples were collected in 2-foot long spilt spoon samplers from the bottom of the hand cleared boring (five feet below the ground surface) to the completion depth. Geoprobe™ soil samples were collected in 4-foot long acetate liners from five feet below the ground surface to the completion depth. A closed-piston sampler was used beneath the water table in order to obtain discrete (intact) soil samples from each sample interval.

Upon completion, each HSA boring that was not converted into a monitoring well was backfilled with bentonite grout mixture to approximately 1-foot below the ground surface. Additionally, several HSA borings had been advanced to beyond the selected screen depth. These borings were backfilled with bentonite grout to near the bottom of the screen interval. A layer of sand was placed between the top of the grout and the bottom of the screen. Geoprobe™ borings were backfilled with hydrated bentonite pellets to 1-foot below the ground surface. The remaining one-foot interval was filled with clean native soil.

All soil cuttings generated from the exterior borings were placed in 55-gallon drums, sealed, and labeled for temporary onsite storage. Impacted and non-impacted soils were containerized separately.

2.5.2.2 Exterior Soil Boring Analyses

Soil samples retrieved from each boring were visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. Soil headspace samples in Ziploc bags were screened for VOCs with a PID.

Soils encountered at upgradient borings MW-1 and MW-5 consisted of sand and silt down to a confining clay layer at a depth of approximately 30 feet bgs. A 17-foot thick competent clay layer was observed in MW-5, which extended to bedrock at 48 feet. MW-1 had elevated PID headspace readings (284 ppm) in soils around the groundwater table.

At borings MW-2, MW-3, SB-10, and SB-14, a competent organic peat layer was encountered between approximately 15 and 20 feet below ground. In MW-2, oily globules and elevated PID readings were recorded at the groundwater saturation level of 8 feet down to 13 feet. In MW-3, oily globules and an elevated PID reading of 90.6 ppm was observed in the groundwater saturation zone at 11 feet. Oily globules and elevated PID readings (363 ppm) were also observed at SB-10. Bedrock refusal occurred at 37 feet and 38.5 feet in MW-3 and SB-14, respectively.

A competent confining layer was not observed at SB-15. Sand with some silt was observed down to bedrock at 37 feet. PID readings obtained from the sandy material below the groundwater table ranged from 3 ppm to 266 ppm.

Clay and silty clay was encountered in SB-5R and SB-16 at approximately 25 feet. SB-16 had no elevated PID readings throughout the boring. A PID reading of 1014 ppm and NAPL globules were observed in SB – 5R from 16 to 20 feet below grade. A competent 5-foot thick clay layer was encountered at 31 feet in SB-17 while no elevated PID readings were observed throughout the boring. Bedrock refusal occurred at 38.5 feet at this boring.

<u>Exterior Soil Boring Soil Samples</u>

Two subsurface soil samples were collected from each soil boring and submitted for analysis of TCL VOCs, TCL SVOCs, TAL inorganics, and cyanide. Select soil samples were also submitted for TCLP analyses for VOCs, SVOCs, and inorganics.

One subsurface soil sample was collected from the zone with the highest PID readings and/or visual impacts. Where no visual impacts or elevated PID readings were observed, the soil sample was collected from directly above the water table. The second subsurface soil sample was collected from

below the impacted zone to define the vertical extent of impacts at each location. Where no visual impacts or elevated PID readings were observed, the second sample was collected from the base of the boring. In general, for the exterior borings, a sample was collected from at or just into the water table, and/or from the zone of highest PID reading and visual impact, which tended to coincide with the water table and a second sample was collected at the base of the boring.

A summary of soil samples collected from the exterior borings is presented in Table 2.1. The results of the chemical analyses are presented in Appendix B and discussed in Section 3.

Exterior Soil Boring NAPL Samples

Other than globules and sheen, NAPL was observed in only one exterior soil boring, MW-5R. At this boring insufficient NAPL was observed to collect a sample for characterization.

2.6 Monitoring Well Installation and Development

Five exterior soil borings were converted to monitoring wells (MW-1, MW-2, MW-3, MW-5 and MW-6) as shown on Figure 2.1.

2.6.1 Monitoring Well Installation Procedures

Well construction was based on visual classification of the soils, PID screening of the soils, and groundwater elevations. The monitoring wells were constructed of 2-inch I.D. flush-jointed Schedule 40 PVC riser with a 15 to 20-foot screen (0.01-inch slot size). The well screens straddle the water table with approximately 1/3 of the screen above the water table and 2/3 of the screen below the water table. The well screen lengths were modified from the work plan to cover the longer saturated interval with potential impacts. A 3-foot sump was installed in each well to allow for accumulation of dense non aqueous phase liquid (DNAPL), if present. The sand pack was placed in the borehole annulus to a level of approximately two feet above the top of the well screen. A bentonite seal of 2-foot thickness was installed immediately above the sand layer. The bentonite seal was constructed with 3/8-inch bentonite chips. The remainder of the borehole annulus to one foot below grade was filled with a cement/bentonite grout using a tremie pipe. The top of the riser pipe extends to approximately two inches below grade. Flush-mount protective man holes were installed within a concrete pad.

Wells MW-1, MW-3, and MW-5 were constructed with 15-foot screens. Wells MW-2 and MW-6 were constructed with 20-foot screens. Well screens were installed so as to not cross competent confining layers.

2.6.2 Monitoring Well Development Procedures

Each of the monitoring wells was developed no sooner than 48 hours after installation to ensure that the cement/bentonite grout had set. Prior to development, the static water level and well depth were measured with an oil/water interface probe. No evidence of an LNAPL or DNAPL layer was noted in any of the monitoring wells.

The wells were developed using a combination of surge blocks and submersible Whale™ pumps. Each well was alternately surged and purged until the purge water was free of visible silt, the water color cleared, and/or a minimum of 10 well volumes had been removed. Readings of pH, specific conductivity, temperature, and turbidity were taken during development at each well. Turbidity of less than 50 nephelometric turbidity units (NTU) was achieved at MW-1 and MW-2 and nearly achieved at MW-5 (62 NTU) while turbidity at MW-3 (290 NTU) and MW-6 (300 NTU) remained elevated. Sufficient purge volumes ranging from 50 to 75 gallons (17 to 27 volumes) at MW-1, MW-2, MW-5, and MW-6 were removed with minimal drawdown (less than 1 foot). Sheen and odor were observed on the purge water at MW-2. A faint petroleum-like odor was noted at MW-6, while a sewer-like odor was noted at MW-1. No visual or olfactory evidence of impacts was noted at MW-5.

MW-3 was repeatedly purged dry between surges with a total of 35 gallons (13 volumes) removed. Recharge to the well was moderate with nearly full recharge of 15 feet in approximately 2 hours. Visible silt was removed from the water and the initial recharge water at the start of each purge was clear. A light, intermittent sheen and mild odor were noted on the purge water. This well was constructed with a portion of the screen in the upper portion of the clay confining unit, which may be the reason that this well did not yield as much water as the other wells.

Water removed during development was containerized in 55-gallon drums and labeled for temporary onsite storage and subsequent disposal. Two composite samples were collected of the development water for waste characterization purposes. Sample DW-1-5-6 was collected from the wells anticipated to be clean (MW-1, -5, and -6) while sample DW-2-3 (MW-2 and –3) was collected from the wells with evidence of impacts (sheen and odor). The samples were submitted for analyses of TCL VOCs, TCL SVOCs, TAL inorganics, and cyanide. The analytical results are included in Appendix B.

2.7 Groundwater Sampling and Analysis

Groundwater samples were collected from each of the monitoring wells on September 4 or 5, one week after development was completed.

2.7.1 Water Level Measurements

Water level measurements were obtained from each well on August 28 prior to the start of development and again on September 4 and 5 prior to the start of purging for sampling. The measurements were recorded from the highest point of the top of the PVC riser using an electronic water level indicator accurate to 0.01 foot. The August 28 measurements were obtained within an 8-hour period with no precipitation, while the September 4-5 measurements were obtained within a 24-hour period during which there was an approximate 4-hour period of light to steady rain on September 5. A comparison of the water table elevations indicated that the results were similar except for an anomalous reading at MW-5 on September 5. The water table elevations are discussed in Section 3.

2.7.2 Groundwater Sampling Procedures

Each monitoring well was purged and sampled with a peristaltic pump using low stress (low-flow) purging and sampling procedures according to the USEPA Region I Standard Operating Procedure (SOP) titled "Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", Revision 2, July 1996, provided in the FSP. Water quality readings (temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP)) were measured with a YSI 600XL meter equipped with a flow-through cell. Readings were recorded every 10 minutes during purging until the parameters were stable and the required purge volume (3 screen volumes) had been achieved. Final turbidity readings were less than 5 NTU at all wells except for MW-3 (10 NTU) and MW-5 (8 NTU).

Immediately following purging, groundwater samples were collected into the appropriately preserved sample containers. Groundwater samples to be analyzed for dissolved inorganics were filtered in the field using disposable 0.45-micron inline filters prior to collection in the appropriately preserved containers.

Total depth measurements were obtained at each monitoring well at the end of sampling in order to avoid elevating the turbidity prior to purging and sampling.

2.7.3 Groundwater Analyses

Samples from each monitoring well were submitted to STL for analysis of TCL VOCs, TCL SVOCs, total TAL inorganics, total and amenable cyanide, and available cyanide. The results of the analysis of the groundwater samples are discussed in Section 3. A full summary of the analytical results is included in Appendix B.

2.8 Site Survey

RI field sampling locations were surveyed by GEOD, a licensed New York State Surveyor. Pertinent site features such as the building, fence, curbs, etc. were included in the survey to better define the relation to the sampling locations and historic MGP structures. The horizontal coordinates and vertical elevations were obtained for each point, plus the top of PVC well casing and roadbox rim elevations for each monitoring well. All vertical measurements were surveyed in 1988 USGS National Geodetic Vertical Datum (NGVD) coordinates, and all horizontal measurements were surveyed in New York State Plane coordinates, using the 1983 North American Datum (NAD83).

2.9 Waste Management

Investigation derived waste (IDW) generated during the field investigation included soil cuttings, debris from borings and test pits (concrete and bricks), concrete cores from the interior soil borings, decontamination water, used personal protective equipment (PPE), used polyethylene sheeting and sampling equipment; and monitoring well purge and development water.

All IDW was containerized in 55-gallon drums and temporarily stored within the basement of the school. The soil and groundwater samples collected from the soil borings, test pits, and monitoring wells including the TCLP soil analyses were used to characterize the material for disposal purposes. The results of these analyses are included in Appendix B. A total of 60 drums were removed from the site on September 6, 2003 by Clean Harbors and transported to a licensed disposal facility contracted by Con Edison.

2.10 Sample Analysis

As stated above, STL in Buffalo NY performed the chemical analyses of the samples collected during this RI. In addition, a sample of NAPL was analyzed by Meta Environmental for NAPL characterization and by Queens University for viscosity and density.

STL provided the analytical results in paper and electronic format. The paper format was provided as NYSDEC ASP Category B deliverables. The analytical data was reviewed in accordance with NYSDEC Guidance for the Development of Data Usability Summary Reports (NYSDEC, 2001). This report is summarized in Section 3 and presented in Appendix E.

Routine chemical analyses were conducted using the following methods:

Analyses	Method
VOCs	SW-846 8260B
SVOCs	SW-846 8270C
Metals (except thallium and mercury)	SW-846 6010B
Thallium	SW-846 6020
Mercury	SW-846 7471A
Amenable Cyanide	SW-846 9012
Total Cyanide	SW-846 9012A
Available Cyanide	EPA 1677
PCB Aroclors	SW-846 8082
Oil Characterization	EPA 310.13

All analyses were performed by Severn Trent Laboratories, Inc., in Buffalo, NY (STL-Buffalo) [NY Certification # 10026] with the following exceptions:

Available cyanide: Severn Trent Laboratories, Inc., in Pittsburgh, PA (STL-Pittsburgh).

NAPL Fingerprint: META Environmental Laboratory (Watertown, MA).

NAPL Density and Viscosity: Queens University (Kingston, Ontario, Canada).

Table 2.1
RI Sample Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Location	Sample ID	Date	Time	Analysis	Sampling Rationale/Comments
Surface Soil					
SS-1	SS-01	8/18/2003	12:50	TCL SVOCs, TAL metals, CN	Surface soil samples collected per the work plan from 0-2 inches
SS-2	SS-02	8/18/2003	12:40	TCL SVOCs, TAL metals, CN	with the vegetation (grass) removed.
SS-3	SS-03	8/18/2003	12:30	TCL SVOCs, TAL metals, CN	
SS-4	SS-04	8/18/2003	11:10	TCL SVOCs, TAL metals, CN	
SS-5	SS-05	8/18/2003	12:15	TCL SVOCs, TAL metals, CN	
SS-6	SS-06	8/18/2003	11:00	TCL SVOCs, TAL metals, CN	
SS-7	SS-07	8/18/2003	12:00	TCL SVOCs, TAL metals, CN	
SS-8	SS-08	8/18/2003	10:45	TCL SVOCs, TAL metals, CN	
SS-9	SS-09	8/18/2003	10:10	TCL SVOCs, TAL metals, CN	
Subsurface Soil					
SB-1	SB-01 (3.5-4)	8/19/2003	12:20	TCL SVOCs, TAL metals, CN, TCL VOCs	Above the water table within large gas holder.
SB-1	SB-01 (16-20)	8/19/2003	15:00	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-1	SB-01 (16-20)	8/20/2003	11:00	TCLP	High PID and significant visual impact.
SB-1	SB-01 (20)	8/19/2003	15:30	NAPL Fingerprint	Tar sample submitted to Meta.
SB-1	SB-01 (20)	8/19/2003	15:30	Specific Gravity, Viscosity, Kinematic Viscosity	Tar sample submitted to Queens University.
SB-5R	SB-05 (18-19)	8/26/2003	10:10	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and visual impact.
SB-5R	DUP-04	8/26/2003	10:10	TCL VOCs	Duplicate of SB-05 (18-19).
SB-5R	SB-05 (26-28)	8/26/2003	11:00	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-6	SB-06 (8-10)	8/21/2003	16:30	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	High PID and significant visual impact.
SB-6	SB-06 (21-23)	8/21/2003	17:40	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-7	SB-07 (2-4)	8/20/2003	16:35	TCL SVOCs, TAL metals, CN, TCL VOCs	Above the water table within large gas holder.
SB-7	SB-07 (12-16)	8/20/2003	17:30	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	Most significant visual impact; elevated PID.
SB-8	SB-08 (8-9)	8/23/2003	8:55	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample within small gas holder.
SB-9	SB-09 (10-14)	8/22/2003	17:20	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-9	SB-09 (22.5-23)	8/23/2003	16:25	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-10	SB-10 (9-15)	8/27/2003	11:15	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-10	SB-10 (21-23)	8/27/2003	10:45	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-11A	SB-11A (7-8)	8/22/2003	12:50	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample (likely within small gas holder).
SB-12	SB-12 (7-8)	8/21/2003	11:30	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-12	SB-12 (19-21)	8/21/2003	11:40	TCL SVOCs, TAL metals, CN, TCL VOCs	Sample from sand just above clay - elevated PID.
SB-12	SB-12 (21-23)	8/21/2003	11:35	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-13A	SB-13 (4-6)	8/20/2003	14:45	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	At refusal and also above water table.
SB-13B	SB-13B (9-11)	8/22/2003	08:55	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	High PID and significant visual impact.
SB-13B	SB-13B (20-21)	8/22/2003	09:40	TCL SVOCs, TAL metals, CN, TCL VOCs	Sample from sand just above clay - elevated PID and significant visual impact.
SB-13B	SB-13B (23-24)	8/22/2003	09:45	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample 2-3 feet into clay to avoid sheen smear on clay sample core.
SB-14	SB-14 (8-12)	8/26/2003	13:30	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-14	DUP-05	8/26/2003	13:30	TCL SVOCs, TAL metals, CN	Duplicate of SB-14 (8-12)
SB-14	SB-14 (35.5 - 36)	8/26/2003	16:25	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample above bedrock (~2 ft above bottom). Held, then run outside of hold time.
SB-15	SB-15 (21-27)	8/26/2003	12:40	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact.
SB-15	SB-15 (33-37)	8/26/2003	12:50	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample above bedrock.

Table 2.1
RI Sample Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Location	Sample ID	Date	Time	Analysis	Sampling Rationale/Comments
SB-16	SB-16 (8-12)	8/27/2003	10:15	TCL SVOCs, TAL metals, CN, TCL VOCs	At water table (MS/MSD).
SB-16	SB-16 (24-25)	8/27/2003		TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
SB-17	SB-17 (6-11)	8/27/2003	14:10	TCL SVOCs, TAL metals, CN, TCL VOCs	At water table.
SB-17	SB-17 (37.5-38.5)	8/27/2003	16:40	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
TP-1	TP-01 (8.5-9)	8/19/2003	10:45	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	Bottom sample.
TP-1	TP-01 (9-10)	8/18/2003	15:00		Bottom sample. HELD, NOT RUN
TP-2	TP-02 (8-8.2)	8/19/2003	16:50	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	Above the water table.
TP-2C	TP-02C MS/MSD	8/22/2003	15:30	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	MS/MSD
TP-2C	DUP-03	8/22/2003	00:00	TCL SVOCs, TAL metals, CN, TCL VOCs	Duplicate to TP-02C
TP-3A	TP-3 (9-10)	8/20/2003	12:15	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	High PID; TP-03 on chain
TP-3B	TP-3B (8-8.5)	8/20/2003	16:55	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP, Sulfate/Sulfite	Spent Lime Sulfate/Sulfide Sample
TP-4	TP-04 (8)	8/21/2003	09:30	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	High PID
TP-4	DUP-01	8/21/2003	09:30	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	Duplicate of TP-04 (8)
TP-4	149956	8/22/2003	14:45	PCBs (8082), Oil Characterization (310.13)	Water from pipe in TP-4C
TP-5	TP-05	8/21/2003	14:00	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	Above the water table.
TP-5	DUP-02	8/21/2003	14:00	TCL VOCs	Duplicte of TP-05
TP-5	TP-05 MS/MSD	8/21/2003	14:00	TCL SVOCs, TAL metals, CN, TCL VOCs, TCLP	MS/MSD
MW-1	MW-01 (13-15)	8/22/2003	16:20	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact; at water table.
MW-1	MW-01 (29-33)	8/22/2003	16:20	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
MW-2	MW-02 (9-15)	8/23/2003	12:45	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact; at water table.
MW-2	MW-02 (27-31)	8/23/2003	12:45	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
MW-3	MW-03 (11-13)	8/23/2003	17:40	TCL SVOCs, TAL metals, CN, TCL VOCs	High PID and significant visual impact; at water table.
MW-3	MW-03 (21 - 25)	8/25/2003	11:00	TCL SVOCs, TAL metals, CN, TCL VOCs	Sample within gray silt at base of screen interval.
MW-5	MW-05 (10-12)	8/21/2003	12:00	TCL SVOCs, TAL metals, CN, TCL VOCs	At water table.
MW-5	MW-05 (45-47)	8/21/2003	16:00	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay just above bedrock.
MW-6	MW-06 (11-13)	8/19/2003	13:50	TCL SVOCs, TAL metals, CN, TCL VOCs	At water table.
MW-6	MW-06 (21-23)	8/19/2003	14:10	TCL SVOCs, TAL metals, CN, TCL VOCs	Sample below water table, odor
MW-6	MW-06 (29-31)	8/19/2003	16:07	TCL SVOCs, TAL metals, CN, TCL VOCs	Bottom sample in clay.
Groundwater					
MW-1	MW01-20030905	9/5/2003	11:20	TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	MS/MSD plus dissolved metals; dissolved metals not analyzed
MW-2	MW0220030904	9/4/2003	13:50	TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	Plus dissolved metals; dissolved metals not analyzed
MW-2	GWDUP809040903	9/4/2003		TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	Duplicate to MW0220030904 plus dissolved metals; dissolved metals not analyzed
MW-3	MW0320030904	9/4/2003	12:40	TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	Plus dissolved metals; dissolved metals not analyzed
MW-5	MW0520030905	9/5/2003	9:20	TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	Plus dissolved metals; dissolved metals not analyzed
MW-6	MW062030904	9/4/2003	16:10	TCL SVOCs, TAL metals, CN, ACN, AC, TCL VOCs	Plus dissolved metals; dissolved metals not analyzed
MW-1, -5, -6	DW1-5-6	8/28/2003	13:15	TCL SVOCs, TAL metals, CN, TCL VOCs	Development water composite sample from MW-1, -5, -6
MW-2, -3	DW 2-3	8/28/2003	16:45	TCL SVOCs, TAL metals, CN, TCL VOCs	Development water composite sample from MW-2, -3
Quality Assurance					
Equip. Blank	EB082303	8/23/2003	17:00	TCL SVOCs, TAL metals, CN, TCL VOCs	Collected from clean sample trowel & bowl
Equip. Blank	EB082703	8/27/2003	7:20	TCL SVOCs, TAL metals, CN, TCL VOCs	Collected from clean sample trowel & bowl
Equip. Blank	EB09052003	9/5/2003	8:35	TCL SVOCs, TAL metals, CN, ACN, TCL VOCs	Colected through clean tubing
Field Blank	FB082303	8/23/2003	17:05	TCL SVOCs, TAL metals, CN, TCL VOCs	Collected near MW-2 during soil boring advancement and soil sampling.
Field Blank	FB082703	8/27/2003	7:30	TCL SVOCs, TAL metals, CN, TCL VOCs	Collected near SB-16 during soil boring advancement and soil sampling.
Field Blank	FB09052003	9/5/2003	8:20	TCL SVOCs, TAL metals, CN, TCL VOCs	Collected near MW-5 during groundwater sampling.

Table 2.1
RI Sample Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Location	Sample ID	Date	Time	Analysis	Sampling Rationale/Comments
Trip Blank	TB082303	8/23/2003	NA	TCL VOCs	With soil samples shipped 8/23/03.
Trip Blank	TB082703	8/27/2003	NA	TCL VOCs	With soil samples shipped 8/27/03.
Trip Blank	TB082803	8/28/2003	NA	TCL VOCs	With soil samples shipped 8/28/03.
Trip Blank	TB090403	9/4/2003	NA	TCL VOCs	With groundwater samples shipped 9/4/03.
Trip Blank	TB090503	9/5/2003	NA	TCL VOCs	With groundwater samples shipped 9/5/03.

Notes:
NA - Not Applicable
NAPL - Non-Aqueous Phase Liquid
CN - Cyanide
ACN - Amenable Cyanide
AC - Available Cyanide

NOTE:

1. THE POSITION OF THE GAS HOLDERS WAS ADJUSTED BASED ON OBSERVATIONS FROM THE RI FIELD INVESTIGATION. AS A RESULT, THE COAL PILE AREAS ON THE EASTERN PORTION OF THE SITE WERE COMPRESSED.

LEGEND

- FORMER MGP SITE BOUNDARY
- TP-1A TEST PIT LOCATION
- SS-1 SURFACE SOIL LOCATION
- SB-1 SOIL BORING LOCATION
- MW-1 MONITORING WELL LOCATION

70 0 70 140

SCALE IN FEET
1" = 70'

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
	J.E.B.	D.S.	D.S.

ENSR® INTERNATIONAL
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RI SAMPLING LOCATIONS
AND HISTORIC FEATURES
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE:	DATE:	PROJECT NUMBER:
1" = 70'	11/03	01869-055-700

FIGURE NUMBER:
2.1

SHEET NUMBER:
1

FILENAME: 1869208B.DWG

3.0 INVESTIGATION RESULTS

This section summarizes the results of the RI site characterization. First, the site hydrogeological information derived from the field investigation is summarized. Then the analytical results for soil and groundwater are discussed. This section then discusses the results of the Data Usability Summary Report, which has been prepared in accordance with NYSDEC guidance, and is included as Appendix E.

3.1 Geology and Hydrogeology

This section summarizes the hydrogeology of the site. This summary includes a description of the on-site soils, the presence of groundwater and confining units and the direction of groundwater flow. The section also describes the former MGP structures and materials encountered during the RI.

3.1.1 Regional Information

According to a Bedrock Geologic Map of the New York Metropolitan Area, bedrock in the area of the site consists of Early Paleozoic rock (mostly metamorphic). According to the EDR report (EDR, March 2002) for the site, the bedrock unit lies within the Paleozoic Era and part of the Ordovician system (Middle Ordovician Series). Due to Manhattan's tight metamorphic bedrock, aquifers are not abundant. The overburden deposits are generally of poor permeability. As a result, groundwater is not used as a potable water source in Manhattan. Instead, New York City obtains its water from the Catskill Mountains of New York.

3.1.2 Site-Specific Information

Topography on the site is relatively flat, with a slight pitch to the east towards the Harlem River. The site consists of both vegetated land (grass) and covered areas (school building, roadways, parking areas and sidewalks). Runoff is inferred to flow off-site through ground penetration and via overland flow into storm drains located on the streets. The nearest surface water body is the Harlem River, which abuts the site to the east. Surface water runoff enters storm drains in the area, which discharge into the Harlem River.

Subsurface Soils

Soil borings advanced at the site provided site-specific information on the site hydrogeology. Two cross sections have been prepared using the soil boring information. One of these cross sections, included as Figure 3.1, is oriented generally perpendicular to the long axis of the site and

perpendicular to the Harlem River. The second cross section, Figure 3.2, is oriented generally perpendicular to the first cross section and is oriented generally parallel to the Harlem River.

Based on the soil borings advanced at the site, the overburden thickness ranges from 37 feet at SB-15 to 48 feet at MW-5. Bedrock was encountered in five borings, SB-14 (38.5 feet), SB-15 (37 feet), SB-17 (38.5 feet), MW-3 (38 feet), and MW-5 (48 feet).

The overburden consisted of a fill unit underlain by a sand unit. Over most of the site this sand unit was underlain by a clay unit and then bedrock. In the eastern portion of the site where the coal bin was located, the clay was absent and the sand extended to bedrock. Each of these geologic units is discussed below.

The fill unit contains building debris including brick, concrete, gravel, metal, and coal. This unit was present across the site to depths of approximately 8 to 16 feet.

The sand unit beneath the fill unit ranged in thickness between 10 and 15 feet, with the bottom of the unit ranging between 25 and 30 feet below grade. The water table was generally, but not exclusively, found at the top of this sand unit, i.e., at the contact between the fill and sand. A silt and/or peat layer was observed within the sand unit beneath the school building in the area of the former gas holders. The silt/peat layer was generally encountered at a depth of about 10 feet below existing grade and ranged in thickness between 3 and 7 feet.

A clay layer was encountered beneath the sand unit over most of the site. Where present, the clay layer was encountered at depths ranging between 25 and 30 feet below grade. The soil boring for MW-5 was advanced through this clay layer to bedrock. This boring was positioned in a background location, so drilling through the clay was not considered a risk to expanding potential contamination. At this location, the clay was 18 feet thick and extended to bedrock. Therefore, where present, this clay layer is likely a competent confining unit.

The clay layer was not observed in one boring (SB-15) located in the eastern portion of the site near the former coal bin. The clay layer or a silty clay layer was observed in several other borings in this general area (SB-14, SB-17, and MW-3), but this clay did not extend all the way to bedrock.

Groundwater Flow

The nearest surface water body at the site is the Harlem River, which abuts the site to the southeast across FDR Drive. Runoff is inferred to run off-site through ground penetration and via overland flow into storm drains located on the streets. Surface water runoff enters storm drains in the area, which discharge into the Harlem River.

The presence of water saturated subsurface soils was noted in boring logs. In general, groundwater was encountered at the contact between the fill and sand units. Two complete rounds of water level measurements were obtained from the five monitoring wells installed at the site, one prior to well development on August 28, 2003, and one prior to purging and sampling on September 4 and 5, 2003.

A comparison of the water table elevations from these two rounds of measurements indicates that the results were similar except for an anomalous reading at MW-5 on September 5. Since the water table elevations were similar, the elevations prior to development were used to generate the water table map presented as Figure 3.3. Based on these elevations, groundwater flow beneath the site is to the southeast toward the Harlem River.

Water level elevations for the Harlem River on August 28 at the Horns Hook - Hell Gate Station (#8518668) located at East 90th Street across the river and southeast of the site were obtained from the National Oceanic and Atmospheric Association (NOAA) web site. The water level elevations, in meters above mean lower low water level were converted into feet relative to the 1988 USGS National Geodetic Vertical Datum (NGVD) for comparison to the groundwater elevations beneath the site. The fluctuation in river elevation on August 28 was approximately 5.4 feet and was generally, but not exclusively, below the groundwater elevation at the site. The groundwater flow direction and the comparison of groundwater elevation to river elevation confirms that groundwater at the site flows to the Harlem River.

Former MGP Structures

Test pits were excavated at the site to provide information on the presence of former MGP structures and MGP related materials at the site. The following structures and materials were found:

- Small Gas Holder – The wall of the former small gas holder was found during the excavation of Test Pit TP-1, located on the north side of the school. Its location was slightly different than the location of the holder estimated from Sanborn maps. Additionally, interior soil borings SB-8 and SB-11A through SB-11C appear to be located within this gas holder. These borings all appeared to encounter the concrete base of the holder. The location of the gas holder has been revised on site maps to reflect the information gained from these investigations. The test pits and soil borings also showed that there is no residual MGP wastes (e.g., tar) evident within this structure.

- Large Gas Holder – The large gas holder was not found in test pits (i.e., Test Pit TP-2) and its limits appear to be located completely under the school. Soil borings SB-1 and SB-7 appear to be located within this former gas holder. These borings encountered tar above the base of the gas holder. Additionally, interior soil borings SB-9 and SB-13 appear to be located outside of the large gas holder, but also were impacted by NAPL. The soils at exterior soil boring SB-5R, located outside of the gas holder, also were impacted by NAPL. Globules of NAPL were also observed in

soils at SB-9, SB-13B and SB-5R. The remaining interior soil borings, SB-6A, SB-6B and SB-12 appear to be located outside the gas holder. Staining, but no sheen or globules of NAPL were observed in the soils at these borings.

- Purifying House – A series of test pits, TP-2A, B, C and D, were excavated southeast of the school in the area of the former Purifying House. These test pits encountered subsurface structures and demolition debris and confirmed that the Purifying House was present at this location. Also observed in these test pits were in-place pipes, valves, metal roofing, and steel beams, which appear to be the remnants of the purifying house. Due to the debris and structures, these test pits were not excavated to the water table. Other than the debris, no evidence of MGP impacts, was observed. However, the debris included an asbestos-insulated pipe in TP-2D.

  In addition to test pits TP-2A, B, C and D, test pits TP-3C, and TP-4A, B, C were excavated in or near the southeastern end of the purifying house. These test pits did not reveal any remnant structures, but debris including bricks and gravel was observed. Additionally, spent lime was observed in test pits TP-3C and TP-4A. Testing of this lime revealed that it was high in calcium, and low in sodium and sulfate/sulfide and that it had a more neutral pH than would be expected of lime. Several of these test pits reached the water table where NAPL was observed (TP-3A, TP-3B, and TP-3C). NAPL was not observed in subsurface soils above the water table.

- Coal Bin/Coal Shed – A series of test pits, TP-5A, B, C and D, were excavated in the area of the coal bin and coal shed. These test pits encountered brick building debris including some intact brick structures. Slag and clinker were also observed in these test pits. Additionally, a small quantity of white material, similar to spent lime was observed. These test pits were not extended to the water table due to the large amount of debris.

3.2 Impact Assessment

This section summarizes the analytical results of the samples collected from the various media (soil, groundwater, NAPL, and waste) at the site. The summary includes a comparison to appropriate NYSDEC screening levels and discusses the distribution of constituents that exceed these screening levels.

3.3 Soil

Surface and subsurface soil samples were collected at the site for chemical analysis. These soils are discussed separately below. Additionally, the subsurface soils are separated into three groups: soils above the water table, soils near and below the water table, and soils collected from the bottom of the borings.

Soil sample results were compared to NYSDEC Recommended Soil Cleanup Objectives and Eastern USA Background Concentrations, as presented in Technical and Administrative Memorandum #4046 (TAGM #4046, NYSDEC, 1994). Soil concentrations above recommended soil cleanup objectives are highlighted in the Section 3 tables presenting the soil analytical results. The TAGM #4046 recommended soil cleanup objectives for VOCs, SVOCs, and inorganics are described below.

Recommended soil cleanup objectives for VOCs are the lower of soil concentrations derived to protect underlying groundwater (assuming drinking water) and soil concentrations derived to protect human health. The human health based values are based on the soil ingestion pathway, assuming a child (0-5 years old) consumes 200 mg/soil per day. The recommended soil cleanup objective is the soil concentration protective of underlying groundwater for all VOCs with the exception of acetone. Acetone has a recommended soil cleanup objective slightly higher than the soil concentration derived to be protective of underlying groundwater, but much lower than the soil concentration derived to be protective of human health. In addition to comparing the concentration of each VOC to its respective recommended soil cleanup objective, total VOCs are compared to the maximum allowable total VOC concentration of 10 mg/kg. Total VOCs are calculated by summing each detected VOC in each sample.

Recommended soil cleanup objectives for SVOCs are also the lower of soil concentrations derived to protect underlying groundwater and soil concentrations derived to protect human health, or a maximum of 50 mg/kg per SVOC. Where the selected value is lower than the Method Detection Limit (MDL), the MDL is selected as the soil cleanup objective. The selected recommended soil cleanup objectives for SVOCs represent a mix of the soil concentrations derived to be protective of underlying groundwater, the soil concentration derived to be protective of human health, the maximum value (50 mg/kg), and the MDL. In addition to comparing the concentration of each SVOC to its respective recommended soil cleanup objective, total concentrations of SVOCs detected in subsurface soil samples are compared to the maximum allowable total SVOC concentration of 500 mg/kg. Total SVOCs are calculated by summing each detected SVOC in each sample.

Inorganic soil sample results were compared to NYSDEC Recommended Soil Cleanup Objectives and Eastern USA Background Concentrations, as presented in Technical and Administrative Memorandum #4046 (TAGM #4046, NYSDEC, 1994). Recommended soil cleanup objectives for inorganics were derived by NYSDEC from literature values of background concentrations for eastern United States soils. TAGM #4046 allows site-specific background values for several metals to be used in place of the literature values provided. For several inorganics, literature values are not provided, and site-specific background is listed as the recommended soil cleanup objective. The background location at the site was found to have elevated concentrations of compounds in groundwater, and it was not used as background in these tables. Background values were, therefore, derived for several inorganics from additional literature sources. The following background values were developed based on information

from "Background Concentrations of 20 Elements in Soil with Special Regard for New York State (McGovern, 1988):

Aluminum – 25,000 mg/kg

Calcium – 35,000 mg/kg

Lead – 37 mg/kg

Magnesium – 4,000 mg/kg

Manganese – 5,000 mg/kg

Potassium – 43,000 mg/kg

Sodium – 8,000 mg/kg

The VOC and SVOC tables divide the analytes into two groups. The first group in each table, benzene, ethylbenzene, toluene, and total xylenes for VOCs, and PAHs for the SVOCs, are constituents that maybe related to coal tar or petroleum sources. The second group of analytes is the remainder of VOC and SVOC standard analyte list. These constituents are not typically associated with former MGP sites.

3.3.1.1 Surface Soil

Surface soil samples were analyzed for TCL SVOCs and TAL inorganics. A summary of the detected constituents is presented in Table 3.1. Included on this table is a comparison to NYSDEC Recommended Soil Cleanup Objectives. Also shown on this table are the total PAH concentrations and the Benzo(a)pyrene Toxic Equivalent (BaP-TE) concentrations calculated based upon U.S. EPA guidance ("Provisional Guidance for Quantitative Risk Assessment of PAHs," EPA/600/R-93/089, July 1993). A total BaP-TE concentration was calculated for each sample as follows:

1. The concentration of each detected potentially carcinogenic PAH (cPAH) was multiplied by its applicable Toxicity Equivalent Factor (TEF). If no cPAHs were detected in a given sample, a BaP-TE was not calculated for that sample.

2. The TEF-adjusted concentration for each cPAH in a given sample was summed to derive the total BaP-TE concentration for the sample.

The TEFs used in the calculation are as follows (from Table 8 of U.S. EPA, 1993):

CPAH	TEF
Benzo(a)pyrene	1
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenzo(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

The concentration of total SVOCs are shown on Figure 3.4. A full summary of the analytical results is included in Appendix B.

Analytical results indicate that 15 SVOCs, all of which are PAHs, were detected in the surface soils. One location (SS-1, located north of the school) did not exceed any of the Recommended Soil Cleanup Objectives. The remainder of the locations exceeded between two and six of the NYSDEC Recommended Soil Cleanup Objectives. However, none of the locations exceeded the total SVOC Recommended Soil Cleanup Objective of 500 mg/kg. Individual PAH concentrations ranged from non detect to less than 20 mg/kg and the BaP-TE ranged from 1.8 to 7.6 mg/kg.

Background data in accordance with NYSDEC guidance is not available for this site, so ENSR has reviewed published literature on PAH background concentrations in urban areas. The results of this literature review, which included background studies performed in several US cities, are summarized in a table in Appendix D.

As the table in Appendix D shows, the background PAH values obtained from the literature search range from 14 mg/kg to 31 mg/kg. Although these background concentrations may not be representative of urban background concentrations in New York, they provide an indication of potential background concentrations for PAHs in an urbanized area. Table 3.2 compares the surface soil PAHs to this urban background data. As this table shows, PAHs at five of the nine locations are below the 31 mg/kg, one is near this concentration (34 mg/kg) and three exceed this concentration.

Although PAHs may be associated with former MGP operations, the presence of these constituents in surface soils at this site does not appear to be related to the former MGP and most likely represent urban background in this area. This conclusion has been drawn based on the following: (1) the surface soil data are generally within the typical urban background range; (2) the site has been redeveloped, which appears to have resulted in complete reworking of the surface; (3) MGP wastes and debris were not found near the surface and, in general, were not observed above the water table;

(4) generally similar constituents were found in the MGP portion of the site and the non MGP portion of the site.

All of the 24 inorganics analyzed for were detected in each of the nine surface soil samples collected at the site, with the exception of cadmium, which was only detected in samples SS-01, SS-03, and SS-04. Concentrations of arsenic, beryllium, chromium, copper, iron, lead, mercury, nickel, and zinc exceeded the NYSDEC Recommended Soil Cleanup Objectives in all samples and concentrations of selenium exceeded the Recommended Soil Cleanup Objectives in four samples. However, concentrations of only five metals (copper, lead, mercury, nickel, and zinc) exceeded the Eastern U.S. background concentrations provided in the NYSDEC TAGM #4046 (NYSDEC, 1994) in two or more samples. Cyanide was not detected in any of the surface soil samples.

3.3.1.2 Subsurface Soil

This discussion of subsurface soil is divided into three sections: subsurface soils collected above the water table, subsurface soils collected near and below the water table and subsurface soils collected at or near the bottom of the borings. These distinctions were made because, where present at the site, NAPL was first observed near the water table and was typically not present in the bottom of boring samples. The exception to this observation are borings SB-1 and SB-7 located within the large gas holder.

The subsurface soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL inorganics, and cyanide. Additionally, select soil samples from the test pits were submitted for analysis of TCLP. In the discussions below and in the sample tables, the numbers in parenthesis following the sample location indicate the depth that the sample was collected at. For example, TP-3B (8-8.5) is a soil sample collected at test pit TP-3 between 8 and 8.5 feet below land surface.

Subsurface Soils Above the Water Table

Due to the absence of visual and olfactory impacts (i.e., sheen, odor, NAPL), or elevated PID readings, very few subsurface samples were collected above the water table for chemical analyses. Due to the shallow depth of the interior soil borings, which was limited by the bottom of the gas holders, two soil samples (SB-01 (3-5.4) and SB-07 (2-4)), were collected above the water table to provide spatial distribution of samples within these borings. No soil samples were collected significantly above the water table in the exterior soil borings, however, some soil samples were collected immediately above the water table and are discussed below in the section on Subsurface Soils Near or Below the Water Table.

Where possible, test pits were advanced to the water table. Test pits TP-1, TP-2, and TP-5 did not reach the water table, so soil samples from these locations were collected from above the water table.

Excavations at TP-1 and TP-2 did not encounter any visual staining or elevated PID readings, so samples from these test pits were collected from the bottom of the test pit. A small pocket of black slag, stone, and white lime was observed at TP-5 above the water table and was submitted for chemical analysis. A soil sample was collected of purifier waste (spent lime) that was observed in test pits TP-3C and TP-4A above the water table. A sample of this purifier waste was collected from TP-3B and submitted for chemical analysis. This sample (TP-3B (8-8.5)) is discussed below in the Potential MGP Waste Section. The following discussion, therefore, includes the six subsurface soil samples and two duplicate subsurface soil samples collected above the water table (SB-1 (3-5.4), SB-7 (2-4), TP-1 (8.5-9), TP-02 (8-8.2), TP-02C and TP-02C (Dup 3), TP-05, and TP-05 (Dup 2)). The analytical results for these samples are presented in Table 3.3 and summarized on Figure 3.5.

The analytical results indicate that VOCs were detected in four of the eight samples: SB-07 (2-4) - benzene), TP-5 and TP-05 (Dup 2) - ethylbenzene and xylenes, and TP-02C(Dup 03) - xylenes. Only ethylbenzene and total xylenes at TP-5 (Dup-02) were detected at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. All other VOCs were detected at concentrations below the NYSDEC Recommended Soil Cleanup Levels. The concentration of total detected VOCs was compared to the NYSDEC total VOC Recommended Soil Cleanup Objective of 10 mg/kg and one the duplicate sample at TP-05 (TP-05 (Dup-02)) exceeded this Recommended Soil Cleanup Objective.

The SVOC analyses show that 14 PAHs and no other SVOCs were detected in the subsurface soil samples above the water table. Concentrations above the NYSDEC Recommended Soil Cleanup Objectives were detected only in the samples collected from the test pits. The subsurface soil samples from the two interior soil borings either detected no PAHs (SB-07 (2-4)) or PAHs below the NYSDEC Recommended Soil Cleanup Objectives (SB-01 (3.5-4)). Of the four samples plus one duplicate sample collected from the test pits and analyzed for SVOCs, the one soil sample collected in the area of the small gas holder (TP-01 (8.5-9)) and the soil sample from TP-05 exceeded the NYSDEC Soil Cleanup Objectives and the previously described urban fill background data for PAHs. Of the remaining soil samples, one sample (TP-02 (8-8.2)) and the duplicate from another location (TP-02C (Dup 3)) exceeded the NYSDEC Recommended Soil Cleanup Objectives for benzo(a)anthracene, benzo(a)pyrene and chrysene, but were below the previously referenced urban fill background data. The sample from TP-02C, however, the location where the duplicate sample was collected, did not have detected concentrations of these PAHs. Only one sample (TP-05) exceeded the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg. The PAHs detected in TP-02 (8-8.2) and TP-02C (Dup 3) were at concentrations below the method detection limits and, therefore, were qualified with a “J”.

Each of the six subsurface soil samples and the one duplicated soil sample contained inorganic constituents. Concentrations of arsenic, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, mercury, nickel, selenium, and zinc exceed the NYSDEC Recommended Soil Cleanup Objectives in at least one soil sample and barium, calcium, copper, lead, mercury, and zinc exceeded the Eastern U.S. background concentrations provided in the NYSDEC TAGM #4046 (NYSDEC, 1994)

in one or more samples. Cyanide was detected in two samples (TP-02 (8-8.2) and TP-02C (Dup 03)), but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives.

The analytical results discussed above indicate that no significant impact is present in the subsurface soils located above the water table.

Subsurface Soils Near or Below the Water Table

Subsurface soil samples were also collected at depths immediately above, or below the water table yet above the bottom of the boring. The subsurface soil samples collected from the base of each boring are discussed below. As stated above, the rationale for subsurface soil sample collection was to collect a sample from the zone with the highest PID reading or visual impact and, if no visual impact or elevated PID reading occurred, then from immediately above the water table. No significant visual or olfactory impacts (i.e., sheen, odor, NAPL) or elevated PID readings were observed in soils above the water table, so a soil sample was collected from at or close to the water table from almost every soil boring and monitoring well location. Frequently, the water table was also the depth interval of the highest PID reading. The analytical results for subsurface soils near or below the water table are presented in Table 3.4 and summarized on Figure 3.6.

The following samples are included in the subsurface soils near or below the water table discussion: MW-01 (13-15), MW-02 (9-15), MW-03 (11-13), MW-05 (10-12), MW-06 (11-13), MW-06 (21-23), SB-05 (18-19), SB-05 (18-19) (Dup 4), SB-06 (8-10), SP-09 (10-14), SB-10 (9-15), SB-12 (7-8), SB-13B (9-11), SB-14 (8-12), SB-14 (8-12) (Dup 5), SB-15 (21-27), SB-16 (8-12), SB-17 (6-11), TP-3 (9-10), TP-3B (8-8.5), TP-04 (8), and TP-04 (8) (Dup 1). Olfactory observations and PID readings from these soil samples indicate the presence of staining, sheen, globules, or NAPL at all locations except MW-01 (13-15), MW-05 (10-12), SB-16 (8-12), and SB-17 (6-11). These four borings are located either upgradient (MW-01 (13-15)) of the MGP property, or on the upgradient edge of the MGP property (MW-05 (10-12), SB-16 (8-12) and SB-17 (6-11)).

The VOC analytical results show that of the four upgradient locations (MW-01 (13-15), MW-05 (10-12), SB-16 (8-12) and SB-17 (6-11)) benzene was detected in MW-05 (10-12) and acetone was detected in MW-01 (13-15). The benzene was detected at a concentration above the NYSDEC Recommended Soil Screening Objective and acetone was below the NYSDEC Recommended Spoil Screening Objective. No other VOCs were detected in these samples.

At the other sample locations, BTEX was frequently present with benzene, ethylbenzene, and total xylenes detected at concentrations above the NYSDEC Recommended Soil Screening Objective. The only other VOCs detected were acetone in samples MW-06 (11-13), MW-06 (21-23), TP-3B (8-8.5), and TP-04 (8) and carbon disulfide in sample TP-04 (8). These two VOCs were detected at concentrations below the method detection limits and are qualified with a “J”.

The concentration of total detected VOCs was compared to the NYSDEC total VOC Recommended Soil Cleanup Objective of 10 mg/kg. All four of the upgradient locations were below this Recommended Soil Cleanup Objective and five of the fifteen other samples (fourteen samples and one duplicate) were below this Recommended Soil Cleanup Objective.

The SVOC analytical results for the four upgradient locations show that PAHs were detected at three of the locations and only one other SVOC (4-chlorophenyl phenyl ether) was detected at one location (MW-05 (10-12)). Of the detected PAHs, benzo(a)pyrene and chrysene were detected at two locations (MW-05 (10-12) and SB-16 (8-12)) and benzo(a)anthracene was detected at one location (MW-05 (10-12)) at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. All other PAHs and 4-chlorophenyl ether, the one detected SVOC, were detected at concentrations below the NYSDEC Recommended Soil Cleanup Objectives.

The SVOC analytical results from the other locations show that one or more PAHs were detected at each location, with all PAHs, except for dibenzo(a,h)anthracene, detected in at least one boring. Dibenzo(a,h)anthracene was not detected in any of the borings. In general, elevated PAH concentrations were detected in the samples which displayed the presence of NAPL. For example, in samples MW-06 (11-13) and MW-06 (21-23), where only odor was observed at the 21 to 23 foot interval only one PAH (naphthalene) was detected and at less than 1 mg/kg. In contrast, NAPL was observed in samples SB-07 (12-16) and SB-13B (9-11), and the total PAHs at these locations were 6023 and 2264 mg/kg respectively. Each detected PAH exceeded the NYSDEC Recommended Soil Cleanup Objective at one or more locations. At these sample locations, only three other SVOCs were detected: 2-nitrophenol and 3,3'-dichlorobenzidine (at MW-06 (21-23), with 2-nitrophenol being present at a concentration above the NYSDEC Recommended Soil Cleanup Objective, and dibenzofuran at SB-05 (18-19), SB-07 (12-16), SB-09 (10-14), SB-13B (9-11), SB-14 (8-120, and SB-15 (21-27), with its concentrations measured in excess of the NYSDEC Recommended Soil Cleanup Objectives at SB-07 (12-16), SB-09 (10-14), and SB-13B (9-11).

The concentration of total detected SVOCs was compared to the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg. All four of the upgradient locations were below this Recommended Soil Cleanup Objective and nine (eight samples and one duplicate) of the fifteen other samples (fourteen samples and one duplicate) were below this Recommended Soil Cleanup Objective.

All of the 24 inorganics analyzed for were detected in subsurface soil samples near or beneath the water table. Fifteen inorganics: aluminum, arsenic, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, mercury, nickel, selenium, sodium, and zinc, exceeded the NYSDEC Recommended Soil Cleanup Objectives in one or more samples and twelve inorganics: aluminum, arsenic, beryllium, cadmium, calcium, copper, magnesium, mercury, nickel, selenium, sodium, and zinc exceeded the Eastern U.S. background concentrations provided in the NYSDEC TAGM #4046 (NYSDEC, 1994) in one or more samples. The upgradient locations did not have distinctly different

inorganics detected or concentrations of inorganics detected than the other locations. Sample TP-3 (9-10) had distinctively more constituents detected above the NYSDEC Recommended Soil Cleanup Objectives, Eastern U.S. background concentrations, and higher concentrations than the other sample locations. Cyanide, was detected in two samples (MW-05 (10-12) and SB-07 (12-16)), but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives.

Subsurface Soils Below the Water Table or at the Bottom of the Borings

Soil samples were collected from the bottom of each boring advanced at the site, with the exception of MW-3 where the deepest sample (21-25 feet) was collected above the bottom of the boring (38 feet). This boring was advanced beyond the limits of olfactory and elevated PID readings to confirm the lithology. Each of the borings was generally advanced to the first confining unit where visual observations and PID readings indicated that limits of MGP impact had been reached. The depths of borings were limited, however, in the areas of the gas holders, where the bottom of gas holders were encountered (SB-01 (16-20), SB-07 (12-16), SB-08 (8-9), and SB-11A (7-8)) and in the eastern portion of the site in the area of the coal bin and coal shed and generating house where the borings encountered bedrock (SB-14 (38.5 feet), SB-15 (37 feet), SB-17 (38.5 feet), and MW-3 (38 feet)). Additionally, MW-5 located upgradient of the small gas holder was advanced through a clay confining layer to bedrock at a depth of 48 feet, where a soil sample was collected.

The analytical results of the subsurface soil samples collected below the water table are presented in Table 3.5 and summarized on Figure 3.7. These analytical results are compared to the NYSDEC Recommended Soil Cleanup Objectives. This comparison may not be appropriate because these soil samples are water saturated and, therefore, the analytical results are for both the soil and the entrained groundwater.

The VOC results for the four borings located within the two gas holders show that benzene, ethylbenzene, toluene, and/or total xylenes were detected in each of the borings. The highest concentrations were detected in borings SB-1 and SB-7 located within the large gas holder with all four constituents exceeding the NYSDEC Recommended Soil Cleanup Objectives in boring SB-01 (16-20) and benzene, ethylbenzene, and total xylenes in SB-07 (12-16). Benzene, ethylbenzene, and total xylenes were also detected in SB-11A (7-8) located within the small gas holder at concentrations above the NYSDEC Recommended Soil Cleanup Objectives, but at significantly lower concentrations than at SB-1 and SB-7. Benzene, toluene, and total xylenes were detected in the other boring located within the small gas holder (SB-1), but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Other VOCs were detected in the soil samples from these borings, but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives (tetrachloroethene at SB-01 (16-20), and acetone and carbon disulfide at SB-08 (8-9)). All of these samples, except SB-08 (8-9) exceeded the NYSDEC total VOC Recommended Soil Cleanup Objective of 10 mg/kg.

Seven soil samples were collected outside of the gas holders, but beneath the school building. These soil borings were all terminated in clay with no visual or olfactory evidence of impact or elevated PID readings. Of these seven samples, BTEX was not detected in two samples (SB-06 (21-23) and SB-09 (22.5-23)). Only benzene was detected in one sample, but at a concentration below the NYSDEC Recommended Soil Cleanup Objectives (SB-12 (21-23). At the other locations, at least one BTEX constituent was detected at a concentration above the NYSDEC Recommended Soil Cleanup Objectives. Other VOCs were also detected at these borings, but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives (1,2-dichloroethene, acetone, tetrachloroethene, and trichloroethene at SB-06 (21-23), 1,2-dichloroethene and tetrachloroethene at SB-09 (22.5-23) and acetone at SB-12 (19-21) and SB-12 (21-23)). None of these soil samples exceeded the NYSDEC total VOC Recommended Soil Cleanup Objective of 10 mg/kg.

Of the 12 borings located outside the school building, no BTEX constituents were detected at five borings, MW-01 (29-33), MW-05 (45-47), SB-05 (26-28), SB-16 (24-25), and SB-17 (37.5-38.5). One or more BTEX constituents were detected at concentrations below the NYSDEC Recommended Soil Cleanup Objectives at three borings, MW-02 (27-31), MW-06 (29-31), SB-12 (21-23). Benzene at MW-03 (21-25) and SB-10 (21-23), benzene, ethylbenzene, and total xylenes at SB-14 (35.5-36), and ethylbenzene and total xylenes at SB-15 (33-37) are the only BTEX constituents detected in these borings at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. Other BTEX constituents were also detected in these samples, but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Acetone at MW-03 (21-25) and MW-05 (45-47) and carbon disulfide at MW-03 (21-25) are the only other VOCs detected in these soil samples. These other VOCs were detected at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Only two of these soil samples collected outside the school building (SB-14 (35.5-36) and SB-15 (33-37) exceeded the NYSDEC total VOC Recommended Soil Cleanup Objective of 10 mg/kg.

The SVOC analytical results generally parallel the VOC results. The highest detected PAH concentrations were observed in SB-01 (16-20) and SB-07 (12-16), both located within the large gas holder. All detected PAHs at these locations were detected at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. Three PAHs, benzo(g,h,l)perylene, dibenzo(a,h)anthracene, and indeno(1,1,3-cd)pyrene, were not detected in either of these two samples. The only other SVOC detected in these soil samples was dibenzofuran, which was detected in both borings at concentrations above the NYSDEC Recommended Soil Cleanup Objective. Both of these soil samples also exceed the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg.

One of the two borings within the small gas holder (SB-11A (7-8)) had eight detected PAHs at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. Several other PAHs were detected in this sample. A soil sample from the other boring within the small gas holder (SB-08 (8-9)) had only two detected PAHs (fluoranthene and pyrene). Both of these PAHs were detected at concentrations below the method detection limits and below the NYSDEC Recommended Soil Cleanup Objectives. The only other detected SVOCs in these two subsurface soil samples are bis(2-

ethylhexyl)phthalate in SB-08 (8-9) and dibenzofuran detected in SB-11A (7-8). Both of these SVOCs were detected at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Neither of the soil samples collected within the small gas holder exceeded the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg.

Three soil samples (SB-06 (21-23), SB-12 (19-21) and SB-12 (21-23)) collected from two boring locations under the school building, but outside the gas holders had no detected PAHs or other SVOCs. Of the other two soil samples (SB-13B (20-21) and SB13B (23-34)) collected from under the school building but outside the gas holders, one (SB13B (20-21)) had only one detected PAH (naphthalene), which was detected at a concentration below the NYSDEC Recommended Soil Cleanup Objectives. No other SVOCs were detected in this sample. The analytical results for the other soil sample at this location (SB-13B (23-24)) had three PAHs (benzo(a)anthracene, benzo(a)pyrene, and chrysene) detected at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. Several other PAHs and one SVOC (dibenzofuran) were detected in this sample at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. None of these soil samples exceeded the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg.

Of the 12 exterior soil boring samples collected outside the school building, PAHs were not detected at four borings; MW-05 (45-47), SB-05 (26-28), SB-16 (24-25), and SB-17 (37.5-38.5). PAHs were detected at three borings below the NYSDEC Recommended Soil Cleanup Objectives; MW-01 (29-33), MW-03 (21-25), and SB-10 (21-23). No other PAHs were detected in these samples. One or more PAHs were detected at concentrations above the NYSDEC Recommended Soil Cleanup Objectives at three borings; MW-02 (27-31), SB-14 (35.5-36), and SB-15 (33-37). Other PAHs were also detected in these samples, but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. The only other SVOC detected in these samples is dibenzofuran, which was detected in SB-14 (35.5-36) and SB-15 (33-37). Only 2 of the 12 exterior soil samples (SB-14 (35.5-36) and SB-15 (33-37)) exceeded the NYSDEC total SVOC Recommended Soil Cleanup Objective of 500 mg/kg.

All of the 24 inorganics analyzed for were detected in at least one of the bottom of boring subsurface soil samples. Arsenic, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, mercury, nickel, selenium, and zinc were detected in one or more samples at concentrations above the NYSDEC Recommended Soil Cleanup Objectives and arsenic, cadmium, calcium, copper, lead, magnesium, mercury, nickel, selenium, and zinc exceeded the Eastern U.S. background concentrations provided in the NYSDEC TAGM #4046 (NYSDEC, 1994) in one or more samples. Cyanide was detected in two of the subsurface soil samples (SB-01 (16-20) and SB-07 (12-16), but at concentrations below the NYSDEC Recommended Soil Cleanup Objectives.

3.3.2 Groundwater

A summary of the groundwater analytical results is presented in Table 3.6 including a comparison to the NYSDEC Division of Water Technical and Operational Guidance Series - Ambient Water Quality Standards and Guidance Values - 6 NYCRR 703.5 [NYSDEC, 1999]. A full summary of the analytical results is included in Appendix B. The detected VOCs, SVOCs, and cyanide concentrations are shown on Figure 3.8.

Groundwater results were compared to NYSDEC water quality criteria. Criteria were obtained from the Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, 1998), an errata sheet dated January 1999 (NYSDEC, 1999), and an April 2000 Addendum (NYSDEC, 2000). Standards and guidance values are available for different groundwater classifications and different endpoints. For the purpose of this report, values for protection of human health (drinking water) and aesthetics (fresh water) were used. For some compounds, groundwater criteria are available for both human health (drinking water) and aesthetics (fresh water). In these cases, the lower criterion is selected to compare against site data. Groundwater concentrations above the selected criteria are highlighted in the tables.

The groundwater analytical results indicate that in general, the same inorganics, VOCs, and SVOCs (with the exception of certain PAHs) are present in the groundwater beneath the site. Inorganics were widely detected in groundwater at concentrations generally below the respective NYSDEC Water Quality Criteria (see below), with concentrations ranging as follows: calcium (58,400 - 136,000 μg/L), iron (142 - 21,800 μg/L), magnesium (17,700 - 87,300 μg/L), manganese (109 - 6,090 μg/L), potassium 14,700 - 56,900 μg/L), and sodium (119,000 - 833,000 μg/L). Sodium concentrations exceed the Water Quality Criteria at each well and may reflect brackish water as a result of contact with the saline Harlem River. Iron concentrations exceed the Water Quality Criteria at each well except MW-5, manganese concentrations exceed the Water Quality Criteria at wells MW-1, MW-5, and MW-6, and magnesium concentrations exceed the Water Quality Criteria at wells MW-2 and MW-3.

Total cyanide was detected in groundwater at MW-2 (49 μg/L), MW-5 (200 μg/L), and MW-6 (33 μg/L) at concentrations at or below the Water Quality Criteria of 200 μg/L. Amenable cyanide was detected in groundwater at MW-2 (33 μg/L), MW-5 (140 μg/L), and MW-6 (33 μg/L). Physiologically available cyanide was detected in groundwater at MW-2 (3.6 μg/L), MW-3 (4.3 μg/L), and MW-5 (2.5 μg/L). There are no water quality criteria promulgated by NYSDEC for amenable and available cyanide.

Select VOCs were detected in low levels at upgradient wells MW-1 (total VOCs = 24.79 μg/L) and MW-5 (total VOCs = 10.97 μg/L) with no concentrations exceeding the Water Quality Criteria at MW-5 and only tetrachloroethene (TCA) (19 μg/L) exceeding the Water Quality Criteria of 5 μg/L at MW-1. These two wells have distinctly different VOCs detected then the other wells and may reflect an upgradient non-MGP source of these VOCs. These upgradient wells had no or low levels of detected BTEX and

more other VOCs detected then the downgradient wells MW-2, MW-3, and MW-6 where BTEX were the only VOCs detected. VOCs detected at MW-1 included 1,2-dichloroethene, carbon disulfide, chloroform, methylene chloride, TCA, and trichloroethene (TCE). VOCs detected at MW-5 included benzene, ethylbenzene, 1,2-dichloroethene, acetone, carbon disulfide, chloroform, TCA, and TCE.

Concentrations of benzene, ethylbenzene, and total xylenes exceed the NYSDEC Water Quality Criteria at each of the downgradient wells MW-2, MW-3, and MW-6 with the highest concentrations at MW-2 and lowest concentrations at MW-3. The lone detection of toluene at MW-2 exceeds the NYSDEC Water Quality Criteria. Total VOC concentrations at the downgradient wells ranged from 1,137 μg/L at MW-3 to 4,170 μg/L at MW-6 and 15,100 μg/L at MW-2.

PAHs were detected in the upgradient wells, 2-methylnaphthalene, fluoranthene, and phenanthrene at MW-1 and 2-methylnaphthalene and acenaphthene at MW-5, with no exceedances of the NYSDEC Water Quality Criteria. PAHs and other SVOC concentrations in the downgradient wells were significantly higher than the concentrations in the upgradient wells, with exceedances of the NYSDEC Water Quality Criteria for acenaphthene (all downgradient wells (MW-2, MW-3, and MW-6)), fluorene (MW-6 and duplicate sample from MW-2), naphthalene (all downgradient wells), and phenanthrene (duplicate of MW-2).

3.3.3 Potential MGP Residuals

This section discusses samples that were collected during the field program to characterize some of the potential MGP residuals encountered at the site. These samples include a NAPL sample collected from an interior soil borings and a sample of apparent purifier waste (spent lime) that was collected from one of the test pits. This section also presents the results of TCLP samples from select soil borings and test pits, and the results of a sample of water that drained from a pipe into TP-4.

NAPL Sample

A sample of NAPL was collected from boring SB-1 located inside the large gas holder for characterization of the NAPL properties and for NAPL fingerprinting. A portion of this sample was submitted to META Environmental Laboratory for NAPL fingerprinting and a portion of the sample was submitted to Queens University for measurement of density and viscosity.

The analytical results for the density and viscosity measurements (Table 3.7) indicate that the density of the NAPL sample collected at SB-1 (1.1206 g/ml) is heavier than water and that the viscosity is greater than 1000 cSt and the kinematic viscosity is greater than 1001 CP. These results indicate that this NAPL will have a tendency to sink in water and that it is relatively viscous and will not easily move in the subsurface. The extended PAH scan and fingerprinting indicate that the NAPL is a pyrogenic material. According to META pyrogenic materials are a complex mixture of primarily hydrocarbons

produced from organic matter when there is insufficient oxygen for complete combustion, and are produced by fires, internal combustion engines, and furnaces, or when coke and gas are produced from coal or oil. Based on META's evaluation of the results, the patterns and ratios of PAHs indicate that the material is a tar and the presence of MAHs and the high concentration of naphthalene relative to other PAHs indicate that the tar is relatively unweathered. META's comparison of the tar sample to selected source ratios from tar samples in META's in-house library indicates that this tar most closely resembles a carburetted water gas tar, which agrees with available historical records of water gas operations at the East 115th Street former MGP.

Purifier Waste (Spent Lime)

A white substance was unearthed in test pits TP-3C and TP-4A, and a small quantity of this material was also observed in TP-5A. A sample of the white material was submitted for analysis of TCL VOCs, TCL SVOCs, TAL inorganics, cyanide, sulfate, and sulfite. The results of these analyses are presented in Table 3.8. The results of these analyses show that this white material is high in calcium, but relatively low in sulfate/sulfite. These results indicate that the white material is likely lime. The pH of this sample is 8.32, which is more neutral than what would be anticipated with lime, so this lime is likely spent lime that had been used in the purifying house. The analytical results of the analyses of this material show that all detected constituents are present at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Additionally, these results show that cyanide was not detected in this material.

Toxicity Characteristic Leaching Procedure (TCLP)

Twelve soil samples collected from the test pits and soil borings were analyzed for Toxicity Characteristic Leaching Procedure (TCLP). The results of these analyses are presented in Table 3.9 which includes a screen against the maximum allowable concentration for toxicity characteristic. These results indicate that seven inorganics (arsenic, barium, cadmium, chromium, lead, mercury, and selenium) and two VOCs (benzene and chloroform) were detected in some or all of the soil samples and that all concentrations, except for benzene at SB-1 and SB-7, were well below the respective maximum allowable concentration for the toxicity characteristic. The benzene concentration at two locations, SB-1 (16-20) and SB-7 (12-16) exceeded the maximum allowable concentrations for toxicity characteristic. The leachable pH values for the soils ranged from 7.70 to 8.40 S.U., with the acceptable range between 2 and 12.5 S.U.

Pipe Water sample.

As described in Section 2, a small diameter pipe was unearthed during the excavation of test pit TP-4C. Water drained from this pipe in to the test pit. Con Edison reported the draining of this pipe as a release to NYSDCE (reporting number 149956). The water was immediately pumped from the test pit

into a drum for subsequent disposal. A soil sample was collected of the water that drained into the test pit. This sample was analyzed for PCPs and petroleum hydrocarbons. The results of this sampling area summarized in Table 3.10. The analytical results show that no PCB Aroclors were detected above a detection limit of 0.5 μg/L and no petroleum hydrocarbons were detected above a detection limit of 950 μg/L.

3.4 Data Usability Summary

A Data Usability Summary Report (DUSR) has been prepared in accordance with the NYSDEC Guidance for Development of Data Usability Summary Reports (NYSDEC, 2001). This report, included as Appendix E, discusses the usability of the data collected during the site investigation. Usability was evaluated by reviewing the data following USEPA Region 2 data validation Standard Operating Procedures (SOPs) as guidance. Where necessary, the Region 2 SOPs were modified to incorporate project-specific or method-specific criteria. Data qualifiers were applied consistent with the Region 2 guidance.

In general, the DUSR concludes that the data are valid as reported and may be used for decision making purposes. Selected data points were rejected (R) or qualified as estimated (J) based on certain QC nonconformances as described in the sections above.

3.5 Results Summary

The RI field investigation has provided information on the presence of former MGP structures, the presence and distribution of NAPL and other MGP residuals, and the concentrations of constituents in surface soils, subsurface soils, and groundwater. The results of this investigation are summarized below:

- Indoor air sampling within the school building on two separate occasions before the RI has shown no discernable impact from the former MGP operations. The results of the sampling had been previously provided to NYSDEC and NYSDOH and the Departments' evaluation of the results are included in this report as Appendix F.

- Former MGP structures were encountered in test pits and soil borings. The former small gas holder was encountered under the school and extended to the northeast outside the footprint of the school. No visual MGP residuals were observed within this gas holder. The former large gas holder was encountered only under the school. Residual tar was observed within this gas holder. The former purifying house was observed in test pits located outside and to the southeast of the school building. Building ruble and piping was observed in this area. No residual MGP waste was observed (e.g., tar, NAPL, lime), but an asbestos-insulated pipe was encountered. A former brick

structure was also encountered in test pits excavated in the area of the coal shed and coal bin. Brick ruble, slag and clinker, and a small quantity of black stone and a small quantity of a lime-like material were observed in this area.

- NAPL, described as either tar, sheen, globules, or stain was observed at or below the water table in several areas of the site downgradient of the large gas holder. Figure 3.9 shows the approximate distribution of NAPL based on the investigation data. In general, NAPL was first observed at the water table and extended to a depth of the first confining unit. In the area of the coal bin and coal shed, no confining layer was encountered and NAPL was observed to bedrock at a depth of about 38 feet below grade.

- A white lime-like material, which based on analytical results appears to be spent lime and is, therefore, considered purifier waste, was observed in test pits excavated near the southeastern end of the purifier house. A small quantity of a similar looking material was also observed in one of the test pits located near the former coal bin and coal shed. The analytical results for this material show that all detected constituents were present at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Cyanide was not detected in this material.

- Surface soil analytical results show the presence of SVOCs and inorganics, some at concentrations above the NYSDEC Recommended Soil Cleanup Objectives. As discussed in Section 3.3.1.1, these constituents are present at concentrations similar to typical urban background and is likely the result of urban pollution associated with the adjacent FDR Drive and streets.

- During the RI no visual or olfactory indications of potential impact and/or elevated PID readings were observed in subsurface soils above the water table. Two soil samples were collected in the large gasholder above the water table to provide spatial distribution of soil samples, and no VOCs or SVOCs were detected above the NYSDEC Recommended Soil Cleanup Objectives. Four soil samples and two duplicate samples were collected at the bottoms of test pits excavated within former MGP structures. VOCs were detected at levels exceeding the NYSDEC Recommended Soil Cleanup Objectives at only one location. All other detected VOCs were below these Recommended Soil Cleanup Objectives. SVOCs were detected at all four of these sample locations, but only at two locations above either the NYSDEC Recommended Soil Cleanup Objectives or urban background levels. Black clinker/slag like material was observed in the other test pit and the higher PAHs at this location may represent their presence. Although several inorganics exceeded NYSDEC Recommended Soil Cleanup Objectives, cyanide, the inorganic constituent typically associated with MGP sites, was detected in only two of four samples, and at levels below the NYSDEC Recommended Soil Cleanup Objectives. These results indicate that MGP impact is generally not present in the soils above the water table and that NAPL migration

from a source area (likely the large gasholder) at and below the water table is the primary pathway of MGP impact at the site.

- Subsurface soils samples were collected at and below the water table, and at the bottom of the soil borings. A total of 40 soil samples and 3 duplicate samples were collected; 19 samples and 3 duplicates were collected at or below the water table and 21 samples were collected at the bottoms of the borings. The soil samples collected at and below the water table were collected between 8 and 27 feet of land surface or basement floor. The soil samples collected at the bottoms of the borings were collected between 7 (collected in a gasholder) and 47 feet below land surface or basement floor. Of these 40 soil samples, the analytical results for 14 were below the NYSDEC Recommended Soil Cleanup Objectives for VOCs and SVOCs; 4 at or below the water table and 10 at the bottoms of the borings. The highest concentrations of VOCs and SVOCs in soils were observed in the area around the former large gasholder (SB-9 and SB-13) and area downgradient of this gas holder (SB-5, SB-15, and MW-2). The soil sample locations collected upgradient of the former MGP (SB-17 and MW-1) did not have any VOCs of SVOCs detected above the Recommended Soil Cleanup Objectives.

  In general all soil samples collected from the bottoms of the borings were either below the VOC and SVOC Recommended Soil Cleanup Objectives or showed a significant decline in concentration in comparison to the samples collected at or below the water table. The most frequent exception to this observation are locations where the sampling depth was limited by physical constraints; samples collected within or near gas holders where the sampling depth was limited by site conditions (SB-01, SB-07, SB-11A, and SB-13B) and samples collected at the water table in test pits where deeper samples could not be collected (TP-3, TP-3B, and TP-04). The only two locations where the samples collected at the bottom of the borings did not have significantly declining concentrations of both VOCs and SVOCs are borings SB-14 and SB-15. A significant clay confining unit was not encountered at these borings and the bottom samples were collected near bedrock. These two borings are located in the south eastern portion of the site.

  Exceedances of the inorganic NYSDEC Recommended Soil Cleanup Objectives were observed in all subsurface soil samples. Little difference was observed in inorganics concentrations between the upgradient and downgradient locations. Cyanide, a constituent that may be related to MGP operations, was detected in 3 of the 40 subsurface soil samples at concentrations below the NYSDEC Recommended Soil Cleanup Objectives.

  These results further indicate that NAPL migration from a source area (likely the large gasholder) at and below the water table is the primary pathway of MGP impact at the site.

- Groundwater samples were collected from the five wells constructed at the site. Two wells were located upgradient of the former MGP (MW-01) or upgradient of the former MGP activities at the

site (MW-05). Three wells (MW-02, MW-03 and MW-06) were located within the former MGP footprint downgradient of the large gasholder. Organic constituents typically associated with former MGP operations, BTEX and PAHs were detected in all of the downgradient wells at concentrations above the NYSDEC Water Quality Criteria. Cyanide was detected in two of the downgradient wells, but at concentrations below the Water Quality Criteria. Additional inorganics (iron, magnesium, manganese and sodium) were also detected in one or more of the wells located downgradient of the former MGP operations.

Typical organic MGP constituents were not detected in the two upgradient wells (MW-01 and MW-05) at concentrations above the NYSDEC Water Quality Criteria. However, non-MGP related VOCs (1,2-dichloroethene, acetone, carbon disulfide, chloroform, methylene chloride (MW-01 only), tetrachloroethene, and trichloroethene) were detected in both of these wells. Tetrachloroethene was detected in MW-01 at a concentration above the Water Quality Criteria. Cyanide was detected in only one of the upgradient wells at the Water Quality Criteria. Other inorganics (iron, manganese, and sodium) were also detected in these upgradient wells.

Measurable NAPL was not observed in any of the monitoring wells at the time of groundwater sampling, two weeks after the wells were installed. A sheen, however, was observed in the drums containing development and purge water from monitoring wells MW-2 and MW-3.

4.0 EXPOSURE ASSESSMENT

The NYSDEC Draft Technical Guidance for Site Investigation and Remediation (DER-10) specifies a qualitative exposure assessment that evaluates *if a site poses an existing or potential hazard to the exposed or potentially exposed population*. This section presents that assessment for the East 115th Former MGP Street Site.

4.1 Potentially Exposed Populations

As described in other sections of this report, the 115th Street Former MGP site is currently used as a public school and surrounded by urban residential and commercial buildings. The property is currently covered either by the school building, concrete driveways, parking or sidewalks, the FDR Drive and associated walkway, or grass. Currently, potentially exposed human populations to site media include students, teachers, administrators, and nearby residents. Construction workers may also be potentially exposed should future construction occur at the site.

4.2 Exposure Pathways

The current site use allows for the following potential exposure pathways:

Indoor Air – The school building is located over areas of the former MGP including the former gas holders. NAPL has been observed in one of the gas holders. Additionally, MGP constituents were observed in soil, groundwater, and soil gas beneath the building. While constituents present in these media have the potential to volatilize into building air, the building indoor air assessment showed that MGP constituents are not currently impacting the air in the building.

Surface Soils – Students, teachers, administrators, and local residents may come in contact with surface soils. Current access to the site is unrestricted and although fences are present they are not sufficient to prevent residents from coming in contact with soils. PAHs and inorganics were detected in some surface soils samples at concentrations above NYSDEC Recommended Soil Cleanup Objectives (NYSDEC, 1994). However, based on review of published literature on PAH background concentrations in urban areas (see Appendix D), concentrations of PAHs in the site surface soils appear to be within the typical urban background ranges and are likely the result of urban pollution possibly associated with the adjacent FDR Drive and streets.

Subsurface Soils – If future construction were to occur at the site, construction workers might potentially contact subsurface soils. Other receptors are unlikely to directly contact subsurface soils. Purifier waste (spent lime) and NAPL at the water table were observed in subsurface soils during the RI. The analytical results for the purifier material, however, show that all detected constituents were

present at concentrations below the NYSDEC Recommended Soil Cleanup Objectives. Analytical results show the presence of VOCs, SVOCs, and inorganics above NYSDEC Recommended Soil Cleanup Objectives near and below the water table. However, concentrations of these constituents were significantly lower in soils above the water table.

Groundwater – Groundwater in the area of the site is not used for drinking water and based on the conductivity of the water and elevated sodium concentrations, is brackish and would not be considered potable. Direct contact with groundwater, therefore, would likely only be by a construction worker. Groundwater from the site is also discharging to the Harlem River, so groundwater discharge and potential NAPL migration are potential exposure pathways. Although separate phase NAPL was not observed in any of the monitoring wells one week after their installation and development, sheen was observed in development water from MW-2 and MW-3 located near the downgradient property boundary.

4.3 Contaminant Fate and Transport

MGP related constituents are present at the former 115th Street MGP site. Potential sources include NAPL in one of the former gas holders, other potential NAPL sources associated with the MGP process in the general area of the gas holder, and purifier waste.

NAPL was not observed until the water table in areas of the site around and downgradient of the gas holder containing NAPL and, therefore, appears to have migrated to these areas. Dissolved phase and NAPL migration are potential transport mechanisms at the site. Groundwater at the site discharges to the Harlem River, which is located downgradient and adjacent to the site.

Table 3.1
Surface Soil Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SS-01 8/18/2003	SS-02 8/18/2003	SS-03 8/18/2003	SS-04 8/18/2003	SS-05 8/18/2003	SS-06 8/18/2003	SS-07 8/18/2003	SS-08 8/18/2003	SS-09 8/18/2003
Polycyclic Aromatic Hydrocarbons (PAHs)											
ACENAPHTHENE	50	mg/kg	3.7 U	3.9 U	3.9 U	**1.6 J**	4 U	4 U	4 U	4.1 U	4.1 U
ACENAPHTHYLENE	41	mg/kg	3.7 U	3.9 U	3.9 U	3.9 U	4 U	4 U	4 U	**1.6 J**	4.1 U
ANTHRACENE	50	mg/kg	3.7 U	3.9 U	**3.1 J**	**3.8 J**	4 U	4 U	**2.1 J**	4.1 U	4.1 U
BENZO(A)ANTHRACENE	0.224	mg/kg	3.7 U	**3.8 J**	**8.4**	**7.4**	4 U	**2.2 J**	**4.6**	**3.6 J**	4.1 U
BENZO(A)PYRENE	0.061	mg/kg	3.7 U	**2.7 J**	**5.9**	**5.9**	**1.8 J**	**2.1 J**	**3.5 J**	**3 J**	**1.9 J**
BENZO(B)FLUORANTHENE	1.1	mg/kg	3.7 U	**2.5 J**	**4.7**	**4.4**	4 U	**1.9 J**	**3 J**	**2.4 J**	4.1 U
BENZO(GHI)PERYLENE	50	mg/kg	3.7 UJ	3.9 UJ	**3.6 J**	**3.4 J**	4 UJ	4 UJ	4 UJ	4.1 UJ	4.1 UJ
BENZO(K)FLUORANTHENE	1.1	mg/kg	3.7 U	**2 J**	**4.9**	**4.5**	4 U	4 UJ	**2.8 J**	**2.2 J**	4.1 U
CHRYSENE	0.4	mg/kg	3.7 U	**3.4 J**	**7.4**	**6.2**	**1.9 J**	**2.4 J**	**4.2**	**3.4 J**	**2.2 J**
FLUORANTHENE	50	mg/kg	**2 J**	**7.4**	**15**	**17**	**3.1 J**	**4.1**	**9**	**3.7 J**	**3.4 J**
FLUORENE	50	mg/kg	3.7 U	3.9 U	3.9 U	**1.5 J**	4 U	4 U	4 U	4.1 U	4.1 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	3.7 UJ	3.9 UJ	**3.5 J**	**3.4 J**	4 UJ	4 UJ	4 UJ	4.1 UJ	4.1 UJ
NAPHTHALENE	13	mg/kg	3.7 U	3.9 U	3.9 U	**1.8 J**	4 U	4 U	4 U	4.1 U	4.1 U
PHENANTHRENE	50	mg/kg	**1.1 J**	**5.6**	**12**	**17**	**1.4 J**	**2.5 J**	**7.6**	**1.4 J**	**1.6 J**
PYRENE	50	mg/kg	**2 J**	**6.6**	**13**	**14**	**2.9 J**	**3.8 J**	**6.6**	**5**	**3.5 J**
Benzo(a)Pyrene-TE		mg/kg		**3.4**	**7.6**	**7.5**	**1.8**	**2.5**	**4.3**	**3.6**	**1.9**
Total PAHs		mg/kg	**5.1**	**34**	**81.5**	**91.9**	**11.1**	**19**	**43.4**	**26.3**	**12.6**
Semi-Volatile Organic Compounds (SVOCs)											
CARBAZOLE		mg/kg	3.7 U	3.9 U	**1.4 J**	**1.2 J**	4 U	4 U	4 U	4.1 U	4.1 U
Total SVOCs (Includes PAH compounds)		mg/kg	**5.1**	**34**	**82.9**	**93.1**	**11.1**	**19**	**43.4**	**26.3**	**12.6**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.1
Surface Soil Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SS-01 8/18/2003	SS-02 8/18/2003	SS-03 8/18/2003	SS-04 8/18/2003	SS-05 8/18/2003	SS-06 8/18/2003	SS-07 8/18/2003	SS-08 8/18/2003	SS-09 8/18/2003
Inorganics												
ALUMINUM	25000	33000	mg/kg	10700	10900	12500	10800	11600	10800	11400	11800	11900
ANTIMONY	N/A	N/A	mg/kg	2 J	2.3 J	1.6 J	2.2 J	2 J	2.5 J	2.7 J	2.6 J	3 J
ARSENIC	7.5	12	mg/kg	9.5	7.2	8.4	11	9.4	11.8	10	10.6	11.2
BARIUM	300	600	mg/kg	225	99.7 J	113 J	181 J	151 J	193 J	136 J	154 J	157 J
BERYLLIUM	0.16	1.75	mg/kg	0.55	0.5	0.63	0.54	0.57	0.56	0.62	0.62	0.64
CADMIUM	1	1	mg/kg	0.33	0.02 U	0.2	0.08	0.02 U	0.02 U	0.02 U	0.03 U	0.03 U
CALCIUM	35000	35000	mg/kg	3430	2390	4070	5820	2360	3390	3350	2540	3370
CHROMIUM	10	40	mg/kg	23.6	21.8	23	24	21	20.8	22.1	25	31.2
COBALT	30	60	mg/kg	6.7	7	7	7.3	6.5	7.8	8	7.8	8.6
COPPER	25	50	mg/kg	51 J	36.8 J	70.8 J	98.1 J	49.4 J	64.8 J	59.2 J	55.8 J	60.1 J
IRON	2000	N/A	mg/kg	13300	14700	13700	20400	14900	18400	16500	16000	17400
LEACHABLE PH	N/A	N/A	S.U.	6.94	6.54	5.84	6.76	6.35	7.19	6.98	6.14	6.53
LEAD	37	500	mg/kg	288	211	325	705	251	596	315	388	457
MAGNESIUM	4000	5000	mg/kg	2120	2370 J	2760 J	2810 J	2310 J	2720 J	2580 J	2660 J	2760 J
MANGANESE	5000	5000	mg/kg	324	322	352	414	298	362	347	376	405
MERCURY	0.1	0.2	mg/kg	0.446	0.236 J	0.287 J	0.397 J	0.239 J	0.396 J	0.24 J	0.374 J	0.322 J
NICKEL	13	25	mg/kg	27.5	24.7	19.8	30.4	22.1	26.8	24.8	24.5	34.7
POTASSIUM	43000	43000	mg/kg	813	941	1040	825	883	1060	1120	1140	1220
SELENIUM	2	3.9	mg/kg	1.9	1.9	1.4	2.1	2.2	2	2.1	2	2.5
SILVER	N/A	N/A	mg/kg	0.57	0.33	0.34	0.54	0.29	0.43	0.37	0.42	0.51
SODIUM	8000	8000	mg/kg	53.9	39.6	105	97.6	41.6	67.1	40.7	48	63.5
THALLIUM	N/A	N/A	mg/kg	0.2282 J	0.1642 J	0.1807 J	0.1851 J	0.177 J	0.2411 J	0.2122 J	0.2321 J	0.2493 J
VANADIUM	150	300	mg/kg	75.3	56.5	53.4	79.8	67.2	74.1	72.5	67.5	79.7
ZINC	20	50	mg/kg	208	136 J	194 J	397 J	167 J	276 J	211 J	205 J	237 J

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.
Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.2
Surface Soil PAH Comparison to Background
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	Units	SS-01 8/18/2003	SS-02 8/18/2003	SS-03 8/18/2003	SS-04 8/18/2003	SS-05 8/18/2003	SS-06 8/18/2003	SS-07 8/18/2003	SS-08 8/18/2003	SS-09 8/18/2003
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-METHYLNAPHTHALENE	mg/kg	3.7 U	3.9 U	3.9 U	3.9 U	4 U	4 U	4 U	4.1 U	4.1 U
ACENAPHTHENE	mg/kg	3.7 U	3.9 U	3.9 U	**1.6 J**	4 U	4 U	4 U	4.1 U	4.1 U
ACENAPHTHYLENE	mg/kg	3.7 U	3.9 U	3.9 U	3.9 U	4 U	4 U	4 U	**1.6 J**	4.1 U
ANTHRACENE	mg/kg	3.7 U	3.9 U	**3.1 J**	**3.8 J**	4 U	4 U	**2.1 J**	4.1 U	4.1 U
BENZO(A)ANTHRACENE	mg/kg	3.7 U	**3.8 J**	**8.4**	**7.4**	4 U	**2.2 J**	**4.6**	**3.6 J**	4.1 U
BENZO(A)PYRENE	mg/kg	3.7 U	**2.7 J**	**5.9**	**5.9**	**1.8 J**	**2.1 J**	**3.5 J**	**3 J**	**1.9 J**
BENZO(B)FLUORANTHENE	mg/kg	3.7 U	**2.5 J**	**4.7**	**4.4**	4 U	**1.9 J**	**3 J**	**2.4 J**	4.1 U
BENZO(GHI)PERYLENE	mg/kg	3.7 UJ	3.9 UJ	**3.6 J**	**3.4 J**	4 UJ	4 UJ	4 UJ	4.1 UJ	4.1 UJ
BENZO(K)FLUORANTHENE	mg/kg	3.7 U	**2 J**	**4.9**	**4.5**	4 U	4 UJ	**2.8 J**	**2.2 J**	4.1 U
CHRYSENE	mg/kg	3.7 U	**3.4 J**	**7.4**	**6.2**	**1.9 J**	**2.4 J**	**4.2**	**3.4 J**	**2.2 J**
DIBENZO(A,H)ANTHRACENE	mg/kg	3.7 UJ	3.9 UJ	3.9 UJ	3.9 UJ	4 UJ	4 UJ	4 UJ	4.1 UJ	4.1 UJ
FLUORANTHENE	mg/kg	**2 J**	**7.4**	**15**	**17**	**3.1 J**	**4.1**	**9**	**3.7 J**	**3.4 J**
FLUORENE	mg/kg	3.7 U	3.9 U	3.9 U	**1.5 J**	4 U	4 U	4 U	4.1 U	4.1 U
INDENO(1,2,3-CD)PYRENE	mg/kg	3.7 UJ	3.9 UJ	**3.5 J**	**3.4 J**	4 UJ	4 UJ	4 UJ	4.1 UJ	4.1 UJ
NAPHTHALENE	mg/kg	3.7 U	3.9 U	3.9 U	**1.8 J**	4 U	4 U	4 U	4.1 U	4.1 U
PHENANTHRENE	mg/kg	**1.1 J**	**5.6**	**12**	**17**	**1.4 J**	**2.5 J**	**7.6**	**1.4 J**	**1.6 J**
PYRENE	mg/kg	**2 J**	**6.6**	**13**	**14**	**2.9 J**	**3.8 J**	**6.6**	**5**	**3.5 J**
Benzo(a)Pyrene-TE	mg/kg		**3.4**	**7.6**	**7.5**	**1.8**	**2.5**	**4.3**	**3.6**	**1.9**
Total PAHs	mg/kg	**5.1**	**34**	**81.5**	**91.9**	**11.1**	**19**	**43.4**	**26.3**	**12.6**
Exceeds Urban Background [(1)]		**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**	**No**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantitation limit but greater than zero.
R - Datapoint was rejected during data validation.

Notes:
(1) Urban Background range 14.1 to 30.6 mg/kg - See Appendix D

Table 3.3
Subsurface Soil Analytical Results Summary (Above the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-01 (3.5-4) 8/19/2003	SB-07 (2-4) 8/20/2003	TP-01 (8.5-9) 8/19/2003	TP-02 (8-8.2) 8/19/2003	TP-02C 8/22/2003	TP-02C DUP-03 8/22/2003	TP-05 8/21/2003	TP-5 DUP-02 8/21/2003
BTEX Compounds										
BENZENE	0.06	mg/kg	0.005 U	**0.003 J**	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
ETHYLBENZENE	5.5	mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	**1.3**	**9**
TOLUENE	1.5	mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
XYLENES, TOTAL	1.2	mg/kg	0.015 U	0.018 U	0.019 U	0.018 U	0.015 U	**0.006 J**	**0.68 J**	**2.7 J**
Total BTEX		mg/kg		**0.003**				**0.006**	**1.98**	**11.7**
Volatile Organic Compounds (VOCs)										
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	0.01 U	0.012 U	0.013 U	0.012 U	0.01 UJ	0.011 UJ	1.3 U	2.4 U
ACETONE	0.2	mg/kg	0.025 UJ	0.03 UJ	0.032 UJ	0.029 UJ	0.025 UJ	0.028 UJ	3.3 U	6 U
CARBON DISULFIDE	2.7	mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
STYRENE		mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
TETRACHLOROETHENE	1.4	mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
TRICHLOROETHENE	0.7	mg/kg	0.005 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U	0.66 U	1.2 U
Total VOCs (Including BTEX)	10	mg/kg		**0.003**				**0.006**	**1.98**	**11.7**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup

Table 3.3
Subsurface Soil Analytical Results Summary (Above the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-01 (3.5-4) 8/19/2003	SB-07 (2-4) 8/20/2003	TP-01 (8.5-9) 8/19/2003	TP-02 (8-8.2) 8/19/2003	TP-02C 8/22/2003	TP-02C DUP-03 8/22/2003	TP-05 8/21/2003
Polycyclic Aromatic Hydrocarbons (PAHs)									
2-METHYLNAPHTHALENE	36.4	mg/kg	**0.26 J**	3.6 U	**1.2 J**	3.9 U	9.1 U	1.8 U	62 U
ACENAPHTHENE	50	mg/kg	0.39 U	3.6 U	3.7 U	3.9 U	9.1 U	1.8 U	**70**
ACENAPHTHYLENE	41	mg/kg	0.39 U	3.6 U	**7**	3.9 U	9.1 U	1.8 U	**29 J**
ANTHRACENE	50	mg/kg	0.39 U	3.6 U	3.7 U	3.9 U	9.1 U	1.8 U	**42 J**
BENZO(A)ANTHRACENE	0.224	mg/kg	0.39 U	3.6 U	**14**	**2.4 J**	9.1 U	**1.3 J**	**56 J**
BENZO(A)PYRENE	0.061	mg/kg	0.39 U	3.6 U	**25**	**1.7 J**	9.1 U	**1.1 J**	**45 J**
BENZO(B)FLUORANTHENE	1.1	mg/kg	**0.18 J**	3.6 U	**13**	3.9 U	9.1 U	**1 J**	**28 J**
BENZO(GHI)PERYLENE	50	mg/kg	0.39 UJ	3.6 U	**14 J**	3.9 UJ	9.1 U	1.8 U	62 U
BENZO(K)FLUORANTHENE	1.1	mg/kg	**0.21 J**	3.6 U	**12**	3.9 U	9.1 U	**1 J**	**32 J**
CHRYSENE	0.4	mg/kg	0.39 U	3.6 U	**14**	**2.3 J**	9.1 U	**1.4 J**	**53 J**
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	0.39 UJ	3.6 U	**4.9 J**	3.9 UJ	9.1 U	1.8 U	62 U
FLUORANTHENE	50	mg/kg	**0.26 J**	3.6 U	**10**	**2.4 J**	9.1 U	**0.99 J**	**82**
FLUORENE	50	mg/kg	0.39 U	3.6 U	3.7 U	3.9 U	9.1 U	1.8 U	**49 J**
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	0.39 UJ	3.6 U	**12 J**	3.9 UJ	9.1 U	1.8 U	62 U
NAPHTHALENE	13	mg/kg	**0.9**	3.6 U	3.7 U	**1.3 J**	9.1 U	1.8 U	**66**
PHENANTHRENE	50	mg/kg	**0.13 J**	3.6 U	**1.5 J**	**2.3 J**	9.1 U	1.8 U	**160**
PYRENE	50	mg/kg	**0.28 J**	3.6 U	**25**	**3.9**	9.1 U	**1.6 J**	**140**
Benzo(a)pyrene-TE		mg/kg	**0.02**		**33.9**	**1.9**		**1.34**	**53.8**
Total PAHs		mg/kg	**2.22**		**153.6**	**16.3**		**8.39**	**852**
Semi-Volatile Organic Compounds (SVOCs)									
2-NITROPHENOL	0.33	mg/kg	0.39 UJ	3.6 U	3.7 UJ	3.9 UJ	9.1 U	1.8 U	62 U
3,3'-DICHLOROBENZIDINE		mg/kg	0.79 UJ	7.2 U	7.3 UJ	7.7 UJ	18 U	3.7 U	120 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	0.39 UJ	3.6 U	3.7 UJ	3.9 UJ	9.1 U	1.8 U	62 U
DIBENZOFURAN	6.2	mg/kg	0.39 U	3.6 U	3.7 U	3.9 UJ	9.1 U	1.8 U	62 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**2.22**		**153.6**	**16.3**		**8.39**	**852**

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.3
Subsurface Soil Analytical Results Summary (Above the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SB-01 (3.5-4) 8/19/2003	SB-07 (2-4) 8/20/2003	TP-01 (8.5-9) 8/19/2003	TP-02 (8-8.2) 8/19/2003	TP-02C 8/22/2003	TP-02 (C) DUP-03 8/22/2003	TP-05 8/21/2003
Inorganics										
ALUMINUM	25000	33000	mg/kg	**12100**	**5440**	**9940**	**6760**	**7810**	**6980**	**12300**
ANTIMONY	N/A	N/A	mg/kg	**1.1 J**	**0.64**	**0.97 J**	**4.1 J**	**1.9 J**	**0.63 J**	**2.6 J**
ARSENIC	7.5	12	mg/kg	**3.8**	**2.1**	**4.7**	**10.8**	**6.3**	**5**	**11.4**
BARIUM	300	600	mg/kg	**67.4**	**42.4**	**66.1 J**	**1560 J**	**307 J**	**409 J**	**42 J**
BERYLLIUM	0.16	1.75	mg/kg	**0.54**	**0.24**	**0.46**	**0.33**	**0.41**	**0.37**	**0.62**
CADMIUM	1	1	mg/kg	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.04 U
CALCIUM	35000	35000	mg/kg	**4630**	**8330**	**4600**	**23000**	**19100 J**	**18600 J**	**61700**
CHROMIUM	10	40	mg/kg	**16.5**	**5.9**	**12.8**	**14.1**	**12.9 J**	**12.6 J**	**17.1**
COBALT	30	60	mg/kg	**6.8**	**3.2**	**6.6**	**5.8**	**6.7**	**5.5**	**9.9**
COPPER	25	50	mg/kg	**24.2 J**	**16.2**	**27.1 J**	**44.2 J**	**50.3 J**	**33.9 J**	**39 J**
CYANIDE	N/A	N/A	mg/kg	1.2 UJ	1 U	0.99 UJ	**5.2 J**	0.89 UJ	**2.1 J**	1.8 UJ
IRON	2000	N/A	mg/kg	**17200**	**5680**	**14200**	**16000**	**18500**	**12000**	**22200**
LEACHABLE PH	N/A	N/A	S.U.	**7.7**	**9.21**	**8.22**	**8.36**	**8.4**	**8.28**	**7.7**
LEAD	37	500	mg/kg	**93.3**	**35.8**	**156**	**357**	**272 J**	**385 J**	**578 J**
MAGNESIUM	4000	5000	mg/kg	**3020**	**1850**	**3010 J**	**4760 J**	**3370 J**	**3730 J**	**4890 J**
MANGANESE	5000	5000	mg/kg	**367**	**144**	**317**	**316**	**286**	**283**	**318**
MERCURY	0.1	0.2	mg/kg	**0.453**	**0.027**	**0.316 J**	**0.9 J**	**0.175 J**	**0.178 J**	**0.209 J**
NICKEL	13	25	mg/kg	**13.7**	**5.8**	**13**	**13.5**	**15.7**	**12.6**	**18.7**
POTASSIUM	43000	43000	mg/kg	**1070**	**797**	**913**	**912**	**980 J**	**862 J**	**2020**
SELENIUM	2	3.9	mg/kg	**1.8**	0.32 U	**1.4**	**1.6**	**1.2**	**0.67**	**3.8**
SILVER	N/A	N/A	mg/kg	0.1 U	0.09 U	**0.11**	**0.14**	0.09 U	0.09 U	**0.41**
SODIUM	8000	8000	mg/kg	**126**	**343**	**192**	**212**	**123**	**140**	**2230**
THALLIUM	N/A	N/A	mg/kg	**0.0912 J**	**0.0618 J**	**0.0812 J**	**0.1146 J**	**0.11**	**0.11**	**0.2915 J**
VANADIUM	150	300	mg/kg	**18.7**	**8.1**	**16.1**	**23.6**	**24.2**	**24.5**	**24.5**
ZINC	20	50	mg/kg	**64.7**	**30.3**	**68.4 J**	**816 J**	**286 J**	**311 J**	**119 J**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.
Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	MW-01(13-15) 8/22/2003	MW-02 (9-15) 8/23/2003	MW-03 (11-13) 8/23/2003	MW-05 (10-12) 8/21/2003	MW-06 (11-13) 8/19/2003	MW-06 (21-23) 8/19/2003	SB-05 (18-19) 8/26/2003
BTEX Compounds									
BENZENE	0.06	mg/kg	0.005 U	**0.36 J**	1 U	**0.23 J**	0.009 U	**0.23 J**	**3.9**
ETHYLBENZENE	5.5	mg/kg	0.005 U	**5.2**	**7**	**2.6 J**	0.009 U	**0.27 J**	**110**
TOLUENE	1.5	mg/kg	0.005 U	**0.22 J**	1 U	0.67 U	0.009 U	0.006 U	1.5 U
XYLENES, TOTAL	1.2	mg/kg	0.015 U	**7.2**	**3.2**	**0.7 J**	0.028 U	**0.011 J**	**66**
Total BTEX		mg/kg		**12.98**	**10.2**	**3.53**		**0.511**	**179.9**
Volatile Organic Compounds (VOCs)									
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	0.01 UJ	1.5 U	2.1 U	1.3 U	0.019 U	0.011 U	2.9 U
ACETONE	0.2	mg/kg	**0.026 J**	3.7 U	5.3 U	3.4 U	**0.054 J**	**0.015 J**	7.3 U
CARBON DISULFIDE	2.7	mg/kg	0.005 U	0.74 U	1 U	0.67 U	0.009 U	0.006 U	1.5 U
STYRENE		mg/kg	0.005 U	0.74 U	1 U	0.67 U	0.009 U	0.006 U	1.5 U
TETRACHLOROETHENE	1.4	mg/kg	0.005 U	0.74 U	1 U	0.67 U	0.009 U	0.006 U	1.5 U
TRICHLOROETHENE	0.7	mg/kg	0.005 U	0.74 U	1 U	0.67 U	0.009 U	0.006 U	1.5 U
Total VOCs (Including BTEX)	10	mg/kg	**0.026**	**12.98**	**10.2**	**3.53**	**0.054**	**0.526**	**179.9**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-05 (18-19) DUP04 8/26/2003	SB-06 (8-10) 8/21/2003	SB-09 (10-14) 8/22/2003	SB-10 (9-15) 8/27/2003	SB-12 (7-8) 8/21/2003	SB-13B(9-11) 8/22/2003	SB-14 (8-12) 8/26/2003
BTEX Compounds									
BENZENE	0.06	mg/kg	**2.9**	0.58 U	0.84 U	**1.3**	**0.009**	**8.8**	**4.6**
ETHYLBENZENE	5.5	mg/kg	**94**	0.58 U	**11**	**35**	0.006 U	**270**	**68**
TOLUENE	1.5	mg/kg	1.2 U	0.58 U	0.84 U	1.3 U	**0.003 J**	2.6 U	3.4 U
XYLENES, TOTAL	1.2	mg/kg	**52**	1.8 U	**3.6**	**6.1**	0.017 U	**23**	**16**
Total BTEX		mg/kg	**148.9**		**14.6**	**42.4**	**0.012**	**301.8**	**88.6**
Volatile Organic Compounds (VOCs)									
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	2.4 U	1.2 U	1.7 U	2.5 U	0.011 U	5.2 U	6.7 U
ACETONE	0.2	mg/kg	6.1 U	2.9 U	4.2 U	6.3 U	0.028 UJ	13 U	17 U
CARBON DISULFIDE	2.7	mg/kg	1.2 U	0.58 U	0.84 U	1.3 U	0.006 U	2.6 U	3.4 U
STYRENE		mg/kg	1.2 U	0.58 U	0.84 U	1.3 U	0.006 U	2.6 U	3.4 U
TETRACHLOROETHENE	1.4	mg/kg	1.2 U	0.58 U	0.84 U	1.3 U	0.006 U	2.6 U	3.4 U
TRICHLOROETHENE	0.7	mg/kg	1.2 U	0.58 U	0.84 U	1.3 U	0.006 U	2.6 U	3.4 U
Total VOCs (Including BTEX)	10	mg/kg	**148.9**		**14.6**	**42.4**	**0.012**	**301.8**	**88.6**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-15 (21-27) 8/26/2003	SB-16 (8-12) 8/27/2003	SB-17 (6-11) 8/27/2003	TP-3 (9-10) 8/20/2003	TP-3B (8-8.5) 8/20/2003	TP-04 (8) 8/21/2003
BTEX Compounds								
BENZENE	0.06	mg/kg	4 U	0.005 U	0.005 U	**0.74 J**	0.01 U	**0.006 J**
ETHYLBENZENE	5.5	mg/kg	**180**	0.005 U	0.005 U	**37 J**	0.01 U	**0.22**
TOLUENE	1.5	mg/kg	4 U	0.005 U	0.005 U	**0.56 J**	0.01 U	0.011 U
XYLENES, TOTAL	1.2	mg/kg	**120**	0.015 U	0.015 U	**17 J**	0.03 U	**0.044**
Total BTEX		mg/kg	**300**			**55.3**		**0.27**
Volatile Organic Compounds (VOCs)								
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	8.1 U	0.01 UJ	0.01 UJ	3.3 UJ	0.02 U	0.023 U
ACETONE	0.2	mg/kg	20 U	0.025 U	0.025 U	8.2 UJ	**0.024 J**	**0.044 J**
CARBON DISULFIDE	2.7	mg/kg	4 U	0.005 U	0.005 U	1.6 UJ	0.01 U	**0.007 J**
STYRENE		mg/kg	4 U	0.005 U	0.005 U	1.6 UJ	0.01 U	0.011 U
TETRACHLOROETHENE	1.4	mg/kg	4 U	0.005 U	0.005 U	1.6 UJ	0.01 U	0.011 U
TRICHLOROETHENE	0.7	mg/kg	4 U	0.005 U	0.005 U	1.6 UJ	0.01 U	0.011 U
Total VOCs (Including BTEX)	10	mg/kg	**300**			**55.3**	**0.024**	**0.321**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	MW-01(13-15) 8/22/2003	MW-02 (9-15) 8/23/2003	MW-03 (11-13) 8/23/2003	MW-05 (10-12) 8/21/2003	MW-06 (11-13) 8/19/2003	MW-06 (21-23) 8/19/2003	SB-05 (18-19) 8/26/2003	SB-06 (8-10) 8/21/2003
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-METHYLNAPHTHALENE	36.4	mg/kg	**0.76**	**230**	**80**	3.5 U	0.43 U	0.41 U	**260**	**50**
ACENAPHTHENE	50	mg/kg	**0.16 J**	**76**	**68**	3.5 U	0.43 U	0.41 U	**96**	**35**
ACENAPHTHYLENE	41	mg/kg	0.36 U	22 UJ	**11**	3.5 U	0.43 U	0.41 U	**7**	**4.9 J**
ANTHRACENE	50	mg/kg	0.36 U	29 UJ	**35**	3.5 U	0.43 U	0.41 U	**32**	**13**
BENZO(A)ANTHRACENE	0.224	mg/kg	0.36 U	**19 J**	**31**	**2.1 J**	0.43 U	0.41 U	**20**	**22**
BENZO(A)PYRENE	0.061	mg/kg	0.36 U	**15 J**	**22**	**1.6 J**	0.43 U	0.41 U	**12**	**12**
BENZO(B)FLUORANTHENE	1.1	mg/kg	0.36 U	33 U	**12**	3.5 U	0.43 U	0.41 U	**6.4**	**10**
BENZO(GHI)PERYLENE	50	mg/kg	0.36 U	33 UJ	11 UJ	3.5 UJ	0.43 UJ	0.41 UJ	4 UJ	9.4 UJ
BENZO(K)FLUORANTHENE	1.1	mg/kg	0.36 U	33 U	**12**	3.5 U	0.43 U	0.41 U	**7.8**	**12**
CHRYSENE	0.4	mg/kg	0.36 U	**16 J**	**26**	**2.2 J**	0.43 U	0.41 U	**17**	**20**
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	0.36 U	33 U	11 U	3.5 UJ	0.43 UJ	0.41 UJ	4 U	9.4 UJ
FLUORANTHENE	50	mg/kg	0.36 U	**34**	**53**	**4.8**	0.43 U	0.41 U	**28**	**35**
FLUORENE	50	mg/kg	**0.31 J**	**47**	**47**	3.5 U	0.43 U	0.41 U	**37**	**19**
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	0.36 U	33 UJ	11 UJ	3.5 UJ	0.43 UJ	0.41 UJ	4 UJ	9.4 UJ
NAPHTHALENE	13	mg/kg	**0.21 J**	**400**	**130**	3.5 U	**0.3 J**	**0.23 J**	**420**	**45**
PHENANTHRENE	50	mg/kg	**0.66**	**110**	**120**	**3.3 J**	0.43 U	0.41 U	**120**	**44**
PYRENE	50	mg/kg	0.36 U	**56**	**80**	**3.8**	0.43 U	0.41 U	**46**	**57**
Benzo(a)pyrene-TE		mg/kg		**16.9**	**26.4**	**1.8**			**14.7**	**15.3**
Total PAHs		mg/kg	**2.1**	**1003**	**727**	**17.8**	**0.3**	**0.23**	**1109.2**	**378.9**
Semi-Volatile Organic Compounds (SVOCs)										
2-NITROPHENOL	0.33	mg/kg	0.36 U	33 U	11 U	3.5 UJ	0.43 UJ	**0.41 J**	4 U	9.4 UJ
3,3'-DICHLOROBENZIDINE		mg/kg	0.72 U	66 U	22 U	7 UJ	0.87 UJ	**0.82 J**	8 U	19 UJ
4-CHLOROPHENYL PHENYL ETHER			0.36 U	33 U	11 U	**3.5 J**	0.43 U	0.41 U	4 U	9.4 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	0.36 U	33 U	11 U	3.5 UJ	0.43 UJ	0.41 UJ	4 U	9.4 UJ
DIBENZOFURAN	6.2	mg/kg	0.36 U	33 U	11 U	3.5 U	0.43 U	0.41 U	**5.2**	9.4 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**2.1**	**1003**	**727**	**21.3**	**0.3**	**1.46**	**1114.4**	**378.9**

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-09 (10-14) 8/22/2003	SB-10 (9-15) 8/27/2003	SB-12 (7-8) 8/21/2003	SB-13B(9-11) 8/22/2003	SB-14 (8-12) 8/26/2003	SB-14 (8-12) DUP5 8/26/2003	SB-15 (21-27) 8/26/2003	SB-16 (8-12) 8/27/2003
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-METHYLNAPHTHALENE	36.4	mg/kg	**390**	**32**	4.2 U	**570**	**23 J**	**19**	**59**	3.4 U
ACENAPHTHENE	50	mg/kg	**150**	**24**	**15**	**200**	**96**	**66**	**76**	3.4 U
ACENAPHTHYLENE	41	mg/kg	**11 J**	5.1 U	4.2 U	**11**	**15 J**	**15**	**15**	3.4 U
ANTHRACENE	50	mg/kg	**52**	**7.3**	**7.1**	**51**	**45**	**35**	**42**	3.4 U
BENZO(A)ANTHRACENE	0.224	mg/kg	**30**	**3.3 J**	**5**	**33**	**34 J**	**30**	**35**	3.4 U
BENZO(A)PYRENE	0.061	mg/kg	**20**	**2 J**	**3.2 J**	**21**	**27 J**	**25**	**25**	**1.5 J**
BENZO(B)FLUORANTHENE	1.1	mg/kg	18 U	5.1 U	4.2 U	**13**	41 U	**15**	**15**	3.4 U
BENZO(GHI)PERYLENE	50	mg/kg	18 U	5.1 U	4.2 UJ	**3.5 J**	41 UJ	**6.7 J**	**5.8 J**	3.4 U
BENZO(K)FLUORANTHENE	1.1	mg/kg	**13 J**	5.1 U	4.2 U	**12**	41 U	**15**	**15**	3.4 U
CHRYSENE	0.4	mg/kg	**26**	**2.9 J**	**4.5**	**28**	**30 J**	**26**	**30**	**1.4 J**
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	18 U	5.1 U	4.2 UJ	3.7 UJ	41 U	7.8 U	8 U	3.4 U
FLUORANTHENE	50	mg/kg	**51**	**5.3**	**9**	**46**	**56**	**45**	**58**	**3.1 J**
FLUORENE	50	mg/kg	**75**	**9.8**	**7.2**	**56**	**42**	**34**	**50**	3.4 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	18 U	5.1 U	4.2 UJ	**3.6 J**	41 UJ	**5.9 J**	**5.2 J**	3.4 U
NAPHTHALENE	13	mg/kg	**550**	**50**	**7.5**	**890**	**92**	**63**	**61**	3.4 U
PHENANTHRENE	50	mg/kg	**170**	**24**	**22**	**230**	**160**	**100**	**110**	**2.9 J**
PYRENE	50	mg/kg	**79**	5.1 U	**13**	**96**	**93**	**73**	**95**	**3.1 J**
Benzo(a)pyrene-TE		mg/kg	**23.2**	**2.3**	**3.7**	**26.1**	**30.4**	**30.3**	**30.7**	**1.5**
Total PAHs		mg/kg	**1617**	**160.6**	**93.5**	**2264.1**	**713**	**573.6**	**697**	**12**
Semi-Volatile Organic Compounds (SVOCs)										
2-NITROPHENOL	0.33	mg/kg	18 U	5.1 U	4.2 UJ	3.7 UJ	41 U	7.8 U	8 U	3.4 U
3,3'-DICHLOROBENZIDINE		mg/kg	37 U	10 U	8.5 UJ	7.4 UJ	81 U	16 U	16 U	6.9 U
4-CHLOROPHENYL PHENYL ETHER			18 U	5.1 U	4.2 U	3.7 U	41 U	7.8 U	8 U	3.4 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	18 U	5.1 U	4.2 UJ	3.7 UJ	41 U	7.8 U	8 U	3.4 U
DIBENZOFURAN	6.2	mg/kg	**7.2 J**	5.1 U	4.2 U	**9.4**	41 U	**2.8 J**	**4.5 J**	3.4 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**1624.2**	**160.6**	**93.5**	**2273.5**	**713**	**576.4**	**701.5**	**12**

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-17 (6-11) 8/27/2003	TP-3 (9-10) 8/20/2003	TP-3B (8-8.5) 8/20/2003	TP-04 (8) 8/21/2003	TP-04 (8) DUP-01 8/21/2003
Polycyclic Aromatic Hydrocarbons (PAHs)							
2-METHYLNAPHTHALENE	36.4	mg/kg	0.34 U	**4.7 J**	2.8 U	0.59 U	0.62 U
ACENAPHTHENE	50	mg/kg	0.34 U	**2.9 J**	2.8 U	**0.9**	**1.7**
ACENAPHTHYLENE	41	mg/kg	0.34 U	**2.3 J**	2.8 U	0.59 U	**0.21 J**
ANTHRACENE	50	mg/kg	0.34 U	**2.6 J**	2.8 U	**0.28 J**	**0.68**
BENZO(A)ANTHRACENE	0.224	mg/kg	0.34 U	**3.6 J**	2.8 U	0.59 U	**0.38 J**
BENZO(A)PYRENE	0.061	mg/kg	0.34 U	**4.1 J**	**1 J**	0.59 U	**0.39 J**
BENZO(B)FLUORANTHENE	1.1	mg/kg	0.34 U	**2 J**	2.8 U	0.59 U	**0.36 J**
BENZO(GHI)PERYLENE	50	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 UJ	0.62 UJ
BENZO(K)FLUORANTHENE	1.1	mg/kg	0.34 U	**2 J**	2.8 U	0.59 U	**0.43 J**
CHRYSENE	0.4	mg/kg	0.34 U	**3.2 J**	2.8 U	0.59 U	**0.35 J**
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 UJ	0.62 UJ
FLUORANTHENE	50	mg/kg	0.34 U	**6.8 J**	2.8 U	**0.24 J**	**0.84**
FLUORENE	50	mg/kg	0.34 U	**3.1 J**	2.8 U	**0.44 J**	**0.92**
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 UJ	0.62 UJ
NAPHTHALENE	13	mg/kg	0.34 U	**20 J**	2.8 U	**0.25 J**	**0.8**
PHENANTHRENE	50	mg/kg	0.34 U	**12 J**	2.8 U	**1.3**	**2.7**
PYRENE	50	mg/kg	0.34 U	**12 J**	**1.6 J**	**0.37 J**	**1.3**
Benzo(a)pyrene-TE		mg/kg		**4.7**	**1**		**0.47**
Total PAHs		mg/kg		**81.3**	**2.6**	**3.78**	**11.06**
Semi-Volatile Organic Compounds (SVOCs)							
2-NITROPHENOL	0.33	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 UJ	0.62 UJ
3,3'-DICHLOROBENZIDINE		mg/kg	0.68 U	7 UJ	5.5 U	1.2 UJ	1.2 UJ
4-CHLOROPHENYL PHENYL ETHER			0.34 U	3.5 UJ	2.8 U	0.59 U	0.62 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 UJ	0.62 UJ
DIBENZOFURAN	6.2	mg/kg	0.34 U	3.5 UJ	2.8 U	0.59 U	0.62 U
Total SVOCs (Including PAH compounds)	500	mg/kg		**81.3**	**2.6**	**3.78**	**11.06**

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	MW-01(13-15) 8/22/2003	MW-02 (9-15) 8/23/2003	MW-03 (11-13) 8/23/2003	MW-05 (10-12) 8/21/2003	MW-06 (11-13) 8/19/2003	MW-06 (21-23) 8/19/2003	SB-05 (18-19) 8/26/2003
Inorganics										
ALUMINUM	25000	33000	mg/kg	**3500**	**5550**	**12500**	**9140**	**12000**	**3360**	**3900**
ANTIMONY	N/A	N/A	mg/kg	**0.66 J**	**1.3 J**	**1.4 J**	**1.1**	**1.3 J**	0.48 UJ	**1 J**
ARSENIC	7.5	12	mg/kg	**0.43**	**4.6**	**4.1**	**3**	**3.1**	**0.63**	0.37 U
BARIUM	300	600	mg/kg	**32.5 J**	**112 J**	**43.3 J**	**69.6**	**61.3**	**7.7**	**20.5 J**
BERYLLIUM	0.16	1.75	mg/kg	**0.25**	**0.35**	**0.53**	0.4 U	**0.53**	**0.29**	**0.36**
CADMIUM	1	1	mg/kg	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U
CALCIUM	35000	35000	mg/kg	**729 J**	**106000 J**	**2260 J**	**4360**	**2390**	**348**	**489 J**
CHROMIUM	10	40	mg/kg	**9.3 J**	**9.9 J**	**17.4 J**	**14.1**	**19**	**8.8**	**9.1 J**
COBALT	30	60	mg/kg	**3.6**	**4.9**	**8.9**	**7.3**	**7.5**	**2.5**	**4**
COPPER	25	50	mg/kg	**10.4 J**	**32 J**	**17 J**	**27.8**	**14.9 J**	**6.5 J**	**9.5 J**
CYANIDE	N/A	N/A	mg/kg	1 UJ	1 UJ	1.6 UJ	**2.9**	1.2 UJ	1.2 UJ	1.1 UJ
IRON	2000	N/A	mg/kg	**7440**	**11000**	**22600**	**14600**	**18100**	**5340**	**6240**
LEACHABLE PH	N/A	N/A	S.U.	**7.54**	**7.49**	**7.34**	**7.89**	**7.71**	**7.27**	**7.74**
LEAD	37	500	mg/kg	**3 J**	**273 J**	**38.3 J**	**91.7**	**111**	**2.6**	**2.3 J**
MAGNESIUM	4000	5000	mg/kg	**1430 J**	**1900 J**	**3930 J**	**3300**	**2870**	**1080**	**1710 J**
MANGANESE	5000	5000	mg/kg	**314**	**221**	**361**	**323**	**317**	**39.2**	**110**
MERCURY	0.1	0.2	mg/kg	0.004 UJ	**0.101 J**	0.285 UJ	**0.14**	**0.573**	0.005 U	0.006 UJ
NICKEL	13	25	mg/kg	**8.3**	**10**	**16.7**	**19.4**	**14**	**6**	**15.8**
POTASSIUM	43000	43000	mg/kg	**760 J**	**674 J**	**1480 J**	**868**	**1140**	**756**	**595 J**
SELENIUM	2	3.9	mg/kg	**0.6**	**1.6**	**1.6**	**0.89**	**2.2**	**0.39**	**0.56**
SILVER	N/A	N/A	mg/kg	0.09 U	0.1 U	0.13 U	0.09 U	0.11 U	0.1 U	0.1 U
SODIUM	8000	8000	mg/kg	**170**	**445**	**1710**	**211**	**309**	**111**	**40.1**
SULFATE	N/A	N/A	mg/kg	**---**	**---**	**---**	**---**	**---**	**---**	**---**
SULFITE	N/A	N/A	ug/l	**---**	**---**	**---**	**---**	**---**	**---**	**---**
THALLIUM	N/A	N/A	mg/kg	**0.05**	**0.14**	**0.13**	**0.1069 J**	**0.1061 J**	**0.0352 J**	**0.05**
VANADIUM	150	300	mg/kg	**10**	**15.3**	**27.2**	**20.7**	**18.7**	**9.8**	**8.6**
ZINC	20	50	mg/kg	**12.4 J**	**119 J**	**74.7 J**	**77.9**	**48**	**9.6**	**13 J**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SB-06 (8-10) 8/21/2003	SB-09 (10-14) 8/22/2003	SB-10 (9-15) 8/27/2003	SB-12 (7-8) 8/21/2003	SB-13B(9-11) 8/22/2003	SB-14 (8-12) 8/26/2003
Inorganics									
ALUMINUM	25000	33000	mg/kg	**3180**	**3300**	**13400 J**	**5930**	**5690**	**7080**
ANTIMONY	N/A	N/A	mg/kg	0.44 U	0.43 UJ	**2.2 J**	**0.59**	**0.74**	**2.7 J**
ARSENIC	7.5	12	mg/kg	**0.85**	**1.2**	**12**	**4**	**0.44**	**1.2**
BARIUM	300	600	mg/kg	**23.2**	**81.7 J**	**74.8 J**	**78.5**	**24.2**	**72 J**
BERYLLIUM	0.16	1.75	mg/kg	**0.23**	**0.27**	**0.78 J**	**0.28**	**0.24**	**0.32**
CADMIUM	1	1	mg/kg	0.02 U	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U
CALCIUM	35000	35000	mg/kg	**571**	**874 J**	**7100**	**23600**	**985**	**23100 J**
CHROMIUM	10	40	mg/kg	**6.5**	**7.4 J**	**25.5**	**8.9**	**9.4**	**11.2 J**
COBALT	30	60	mg/kg	**3.1**	**2.5**	**10.1**	**3.7**	**4.1**	**6.7**
COPPER	25	50	mg/kg	**7.5**	**8.8 J**	**34**	**13.4**	**7.7**	**11.3 J**
CYANIDE	N/A	N/A	mg/kg	1.1 U	1 UJ	1.5 U	1 U	1.1 U	1.1 UJ
IRON	2000	N/A	mg/kg	**7310**	**5350**	**28200 J**	**9720**	**7910**	**12700**
LEACHABLE PH	N/A	N/A	S.U.	**7.86**	**7.64**	**7.94**	**7.72**	**8.36**	**8.37**
LEAD	37	500	mg/kg	**3**	**2.5 J**	**90.4 J**	**133**	**3.3**	**34.4 J**
MAGNESIUM	4000	5000	mg/kg	**1130**	**1170 J**	R	**5660**	**1880**	**13100 J**
MANGANESE	5000	5000	mg/kg	**99.7**	**141**	**435**	**222**	**83.4**	**532**
MERCURY	0.1	0.2	mg/kg	0.005 U	0.005 UJ	**0.946**	**0.239**	**0.013**	**0.03 J**
NICKEL	13	25	mg/kg	**7.1**	**7**	**22.7**	**7.4**	**9.7**	**12.8**
POTASSIUM	43000	43000	mg/kg	**665**	**575 J**	**2800**	**721**	**734**	**3100 J**
SELENIUM	2	3.9	mg/kg	**0.47**	**0.4**	**4.4 J**	**0.8**	0.34 U	**2.1**
SILVER	N/A	N/A	mg/kg	0.09 U	0.09 U	0.12 U	0.1 U	0.09 U	0.1 U
SODIUM	8000	8000	mg/kg	**70.4**	**71**	**1310**	**127**	**55.5**	**622**
SULFATE	N/A	N/A	mg/kg	---	---	---	---	---	---
SULFITE	N/A	N/A	ug/l	---	---	---	---	---	---
THALLIUM	N/A	N/A	mg/kg	**0.0432 J**	**0.04**	**0.3**	**0.0732 J**	**0.0372 J**	**0.21**
VANADIUM	150	300	mg/kg	**8.6**	**8.7**	**33.8 J**	**13.2**	**13**	**18.6**
ZINC	20	50	mg/kg	**13.6**	**9.5 J**	**108 J**	**57.3**	**15.2**	**37.2 J**

Qualifiers
U - The compound was not detected at the indicated concentration
J - The result is less than the quantiation limit but greater than zerc
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.4
Subsurface Soil Analytical Results Summary (Near or Below the Water Table)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SB-14 (8-12) DUP5 8/26/2003	SB-15 (21-27) 8/26/2003	SB-16 (8-12) 8/27/2003	SB-17 (6-11) 8/27/2003	TP-3 (9-10) 8/20/2003	TP-3B (8-8.5) 8/20/2003	TP-04 (8) 8/21/2003	TP-4 (8) DUP-01 8/21/2003
Inorganics											
ALUMINUM	25000	33000	mg/kg	8560 J	3710	7790 J	5940 J	53400 J	3760	2730	3360
ANTIMONY	N/A	N/A	mg/kg	2.7 J	0.85 J	1.6 J	1.2 J	6.1 J	0.7	1.5	0.98
ARSENIC	7.5	12	mg/kg	2.7	1.6	3.4	0.77	13 J	3.5	2.4	3.8
BARIUM	300	600	mg/kg	80.9 J	29.9 J	61.8 J	36.2 J	175 J	44.6	30.3	32.1
BERYLLIUM	0.16	1.75	mg/kg	0.4 J	0.28	0.4 J	0.29 J	2.6 J	0.36	0.4	0.4
CADMIUM	1	1	mg/kg	0.02 U	0.02 U	0.02 U	0.02 U	1.2 J	0.03 U	0.04 U	0.04 U
CALCIUM	35000	35000	mg/kg	30700	975 J	7370	1770	127000 J	332000	313000	379000
CHROMIUM	10	40	mg/kg	12.9	7 J	11.7	12.2	24.4 J	5.6	3.8 J	4
COBALT	30	60	mg/kg	7.5	4	5.4	5.4	20.1 J	2	1.8 J	9.7 J
COPPER	25	50	mg/kg	15.8 J	6.3 J	17.7 J	15.1 J	199 J	15.7	9	10.4
CYANIDE	N/A	N/A	mg/kg	0.95 U	1.2 UJ	1 U	1 U	2.1 UJ	1.6 U	1.7 U	1.3 U
IRON	2000	N/A	mg/kg	15000 J	8250	13100 J	8370 J	37500 J	3530	2280 J	12300 J
LEACHABLE PH	N/A	N/A	S.U.	8.15	8.08	8.13	8.32	7.77	8.32	7.76	7.59
LEAD	37	500	mg/kg	38.1 J	3.3 J	76 J	17.2 J	700 J	88.5	38	57.4
MAGNESIUM	4000	5000	mg/kg	R	1610 J	R	R	19500 J	2440	2010	2750
MANGANESE	5000	5000	mg/kg	747	208	294	249	556 J	154	159	248
MERCURY	0.1	0.2	mg/kg	0.109 J	0.006 UJ	0.132	0.061	1.1 J	0.054	0.021	0.037
NICKEL	13	25	mg/kg	14.4	12.3	11.8	13.5	33.2 J	5	2.7 J	13 J
POTASSIUM	43000	43000	mg/kg	3150	1030 J	847	631	2560 J	373	332	345
SELENIUM	2	3.9	mg/kg	2.6 J	0.62	1.3 J	0.68 J	3.2 J	0.81	1.1	1.5
SILVER	N/A	N/A	mg/kg	0.1 U	0.1 U	0.09 U	0.08 U	0.77 J	0.14 U	0.14 U	0.15 U
SODIUM	8000	8000	mg/kg	864	75.6	215	71	30500 J	1380	533	826
SULFATE	N/A	N/A	mg/kg	---	---	---	---	---	298	---	---
SULFITE	N/A	N/A	ug/l	---	---	---	---	---	1000	---	---
THALLIUM	N/A	N/A	mg/kg	0.23	0.15	0.11	0.07	3.06 J	0.0875 J	0.0236 J	0.0208 J
VANADIUM	150	300	mg/kg	19.8 J	10.3	18.6 J	14.4 J	11.2 J	6.4	6.5	8
ZINC	20	50	mg/kg	41 J	16.1 J	83.7 J	23.5 J	917 J	49.3	21.5	30.3

Qualifiers
U - The compound was not detected at the indicated concentration
J - The result is less than the quantiation limit but greater than zero
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	MW-01(29-33) 8/22/2003	MW-02 (27-31) 8/23/2003	MW-03 (21-25) 8/25/2003	MW-05 (45-47) 8/21/2003	MW-06 (29-31) 8/19/2003	SB-01 (16-20) 8/19/2003	SB-05 (26-28) 8/26/2003
BTEX Compounds									
BENZENE	0.06	mg/kg	0.006 U	0.68 U	**0.11**	0.006 U	**0.005 J**	**1200**	0.73 U
ETHYLBENZENE	5.5	mg/kg	0.006 U	**0.54 J**	**0.084**	0.006 U	**0.002 J**	**1600**	0.73 U
TOLUENE	1.5	mg/kg	0.006 U	0.68 U	**0.004 J**	0.006 U	0.006 U	**2100**	0.73 U
XYLENES, TOTAL	1.2	mg/kg	0.016 U	2 U	**0.025**	0.019 U	0.018 U	**2700**	2.2 U
Total BTEX		mg/kg		**0.54**	**0.223**		**0.007**	**7600**	
Volatile Organic Compounds (VOCs)									
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	0.011 UJ	1.4 U	0.012 UJ	0.013 U	0.012 U	120 U	1.5 U
ACETONE	0.2	mg/kg	0.028 UJ	3.4 U	**0.017 J**	**0.052 J**	0.03 UJ	300 U	3.7 U
CARBON DISULFIDE	2.7	mg/kg	0.006 U	0.68 U	**0.003 J**	0.006 U	0.006 U	61 U	0.73 U
STYRENE		mg/kg	0.006 U	0.68 U	0.006 U	0.006 U	0.006 U	**410**	0.73 U
TETRACHLOROETHENE	1.4	mg/kg	0.006 U	0.68 U	0.006 U	0.006 U	0.006 U	61 U	0.73 U
TRICHLOROETHENE	0.7	mg/kg	0.006 U	0.68 U	0.006 U	0.006 U	0.006 U	61 U	0.73 U
Total VOCs (Including BTEX)	10	mg/kg		**0.54**	**0.243**	**0.052**	**0.007**	**8010**	

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-06 (21-23) 8/21/2003	SB-07 (12-16) 8/20/2003	SB-08 (8-9) 8/23/2003	SB-09 (22.5-23) 8/23/2003	SB-10 (21-23) 8/27/2003	SB-11A(7-8) 8/22/2003	SB-12 (19-21) 8/21/2003
BTEX Compounds									
BENZENE	0.06	mg/kg	0.005 U	**2000**	**0.005**	0.005 U	**0.11**	**0.23 J**	**1 J**
ETHYLBENZENE	5.5	mg/kg	0.005 U	**3800**	0.005 U	0.005 U	**0.21**	**17**	**0.39 J**
TOLUENE	1.5	mg/kg	0.005 U	41 U	**0.003 J**	0.005 U	**0.008**	0.57 U	**0.002 J**
XYLENES, TOTAL	1.2	mg/kg	0.016 U	**5200**	**0.003 J**	0.014 U	**0.066**	**5.7**	**0.007 J**
Total BTEX		mg/kg		**11000**	**0.011**		**0.394**	**22.93**	**1.399**
Volatile Organic Compounds (VOCs)									
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	**0.001 J**	82 U	0.01 U	**0.002 J**	0.014 UJ	1.1 U	0.012 U
ACETONE	0.2	mg/kg	**0.016 J**	200 U	**0.032 J**	0.024 UJ	0.034 U	2.9 U	**0.021 J**
CARBON DISULFIDE	2.7	mg/kg	0.005 U	41 U	**0.002 J**	0.005 UJ	0.007 U	0.57 U	0.006 U
STYRENE		mg/kg	0.005 U	41 U	0.005 U	0.005 U	0.007 U	0.57 U	0.006 U
TETRACHLOROETHENE	1.4	mg/kg	**0.003 J**	41 U	0.005 U	**0.002 J**	0.007 U	0.57 U	0.006 U
TRICHLOROETHENE	0.7	mg/kg	**0.002 J**	41 U	0.005 U	0.005 U	0.007 U	0.57 U	0.006 U
Total VOCs (Including BTEX)	10	mg/kg	**0.022**	**11000**	**0.045**	**0.004**	**0.394**	**22.93**	**1.42**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-12 (21-23) 8/21/2003	SB-13B(20-21) 8/22/2003	SB-13B(23-24) 8/22/2003	SB14 (35.5-36) 8/26/2003	SB-15 (33-37) 8/26/2003	SB-16 (24-25) 8/27/2003	SB-17 (37.5-38.5) 8/27/2003
BTEX Compounds									
BENZENE	0.06	mg/kg	**0.006**	**0.7 J**	**3.5**	**1.3 J**	0.6 U	0.005 U	0.004 U
ETHYLBENZENE	5.5	mg/kg	0.005 U	**1.9**	**2.8**	**38 J**	**10**	0.005 U	0.004 U
TOLUENE	1.5	mg/kg	0.005 U	0.96 U	0.69 U	1.5 UJ	0.6 U	0.005 U	0.004 U
XYLENES, TOTAL	1.2	mg/kg	0.016 U	**1.4 J**	**0.85 J**	**7.7 J**	**8.7**	0.015 U	0.012 U
Total BTEX		mg/kg	**0.006**	**4**	**7.15**	**47**	**18.7**		
Volatile Organic Compounds (VOCs)									
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	0.011 UJ	1.9 U	1.4 U	3 UJ	1.2 U	0.01 UJ	0.008 UJ
ACETONE	0.2	mg/kg	**0.017 J**	4.8 U	3.4 U	7.4 UJ	3 U	0.026 U	0.021 U
CARBON DISULFIDE	2.7	mg/kg	0.005 U	0.96 U	0.69 U	1.5 UJ	0.6 U	0.005 U	0.004 U
STYRENE		mg/kg	0.005 U	0.96 U	0.69 U	1.5 UJ	0.6 U	0.005 U	0.004 U
TETRACHLOROETHENE	1.4	mg/kg	0.005 U	0.96 U	0.69 U	1.5 UJ	0.6 U	0.005 U	0.004 U
TRICHLOROETHENE	0.7	mg/kg	0.005 U	0.96 U	0.69 U	1.5 UJ	0.6 U	0.005 U	0.004 U
Total VOCs (Including BTEX)	10	mg/kg	**0.023**	**4**	**7.15**	**47**	**18.7**		

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	MW-01(29-33) 8/22/2003	MW-02 (27-31) 8/23/2003	MW-03 (21-25) 8/25/2003	MW-05 (45-47) 8/21/2003	MW-06 (29-31) 8/19/2003	SB-01 (16-20) 8/19/2003	SB-05 (26-28) 8/26/2003	SB-06 (21-23) 8/21/2003
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-METHYLNAPHTHALENE	36.4	mg/kg	**0.16 J**	**2.1**	0.42 U	0.42 U	**0.33 J**	**1200**	0.41 U	0.42 U
ACENAPHTHENE	50	mg/kg	0.42 U	**2**	0.42 U	0.42 U	0.41 U	**59 J**	0.41 U	0.42 U
ACENAPHTHYLENE	41	mg/kg	0.42 U	**0.71**	0.42 U	0.42 U	0.41 U	**370**	0.41 U	0.42 U
ANTHRACENE	50	mg/kg	0.42 U	**1.4**	0.42 U	0.42 U	0.41 U	**150**	0.41 U	0.42 U
BENZO(A)ANTHRACENE	0.224	mg/kg	0.42 U	**1**	0.42 U	0.42 U	0.41 U	**84**	0.41 U	0.42 U
BENZO(A)PYRENE	0.061	mg/kg	0.42 U	**0.69**	0.42 U	0.42 U	0.41 U	**46 J**	0.41 U	0.42 U
BENZO(B)FLUORANTHENE	1.1	mg/kg	0.42 U	**0.36 J**	0.42 U	0.42 U	0.41 U	**39 J**	0.41 U	0.42 U
BENZO(GHI)PERYLENE	50	mg/kg	0.42 U	0.42 UJ	0.42 U	0.42 UJ	0.41 UJ	74 UJ	0.41 UJ	0.42 UJ
BENZO(K)FLUORANTHENE	1.1	mg/kg	0.42 U	0.36 U	0.42 U	0.42 U	0.41 U	**48 J**	0.41 U	0.42 U
CHRYSENE	0.4	mg/kg	0.42 U	**0.88**	0.42 U	0.42 U	0.41 U	**74**	0.41 U	0.42 U
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	0.42 U	0.42 U	0.42 U	0.42 UJ	0.41 UJ	74 UJ	0.41 U	0.42 UJ
FLUORANTHENE	50	mg/kg	0.42 U	**1.8**	0.42 U	0.42 U	0.41 U	**140**	0.41 U	0.42 U
FLUORENE	50	mg/kg	0.42 U	**1.6**	0.42 U	0.42 U	0.41 U	**260**	0.41 U	0.42 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	0.42 U	0.42 UJ	0.42 U	0.42 UJ	0.41 UJ	74 UJ	0.41 UJ	0.42 UJ
NAPHTHALENE	13	mg/kg	**0.41 J**	**3.5**	**0.2 J**	0.42 U	**1**	**3100**	0.41 U	0.42 U
PHENANTHRENE	50	mg/kg	0.42 U	**5**	**0.15 J**	0.42 U	0.41 U	**450**	0.41 U	0.42 U
PYRENE	50	mg/kg	0.42 U	**2.7**	**0.2 J**	0.42 U	0.41 U	**220**	0.41 U	0.42 U
Benzo(a)pyrene-TE		mg/kg		**0.83**				**58.9**		
Total PAHs		mg/kg	**0.57**	**23.74**	**0.55**		**1.33**	**6240**		
Semi-Volatile Organic Compounds (SVOCs)										
2-NITROPHENOL	0.33	mg/kg	0.42 U	0.42 U	0.42 U	0.42 UJ	0.41 UJ	74 UJ	0.41 U	0.42 UJ
3,3'-DICHLOROBENZIDINE		mg/kg	0.84 U	0.85 U	0.83 U	0.83 UJ	0.83 UJ	150 UJ	0.83 U	0.84 UJ
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	0.42 U	0.42 U	0.42 U	0.42 UJ	0.41 UJ	74 UJ	0.41 U	0.42 UJ
DIBENZOFURAN	6.2	mg/kg	0.42 U	0.42 U	0.42 U	0.42 U	0.41 U	**27 J**	0.41 U	0.42 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**0.57**	**23.74**	**0.55**		**1.33**	**6267**		

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-07 (12-16) 8/20/2003	SB-08 (8-9) 8/23/2003	SB-09 (22.5-23) 8/23/2003	SB-10 (21-23) 8/27/2003	SB-11A(7-8) 8/22/2003	SB-12 (19-21) 8/21/2003	SB-12 (21-23) 8/21/2003
Polycyclic Aromatic Hydrocarbons (PAHs)									
2-METHYLNAPHTHALENE	36.4	mg/kg	**1200**	0.41 U	0.33 U	**2.8**	**100**	0.41 U	0.42 U
ACENAPHTHENE	50	mg/kg	**400**	0.41 U	0.33 U	**1.8**	**46**	0.41 U	0.42 U
ACENAPHTHYLENE	41	mg/kg	**210**	0.41 U	0.33 U	0.47 U	**3.4**	0.41 U	0.42 U
ANTHRACENE	50	mg/kg	**240**	0.41 U	0.33 U	**0.39 J**	**16**	0.41 U	0.42 U
BENZO(A)ANTHRACENE	0.224	mg/kg	**130**	0.41 U	0.33 U	0.47 U	**9.2**	0.41 U	0.42 U
BENZO(A)PYRENE	0.061	mg/kg	**93**	0.41 U	0.33 U	0.47 U	**6.2**	0.41 U	0.42 U
BENZO(B)FLUORANTHENE	1.1	mg/kg	**51**	0.41 U	0.33 U	0.47 U	**7.1**	0.41 U	0.42 U
BENZO(GHI)PERYLENE	50	mg/kg	36 U	0.41 UJ	0.33 U	0.47 U	1.9 UJ	0.41 UJ	0.42 UJ
BENZO(K)FLUORANTHENE	1.1	mg/kg	**59**	0.41 U	0.33 U	0.47 U	**8.6**	0.41 U	0.42 U
CHRYSENE	0.4	mg/kg	**110**	0.41 U	0.33 U	0.47 U	**8**	0.41 U	0.42 U
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	36 U	0.41 U	0.33 U	0.47 U	1.9 U	0.41 UJ	0.42 UJ
FLUORANTHENE	50	mg/kg	**190**	**0.16 J**	0.33 U	**0.26 J**	**14**	0.41 U	0.42 U
FLUORENE	50	mg/kg	**280**	0.41 U	0.33 U	**0.62**	**19**	0.41 U	0.42 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	36 U	0.41 UJ	0.33 U	0.47 U	1.9 UJ	0.41 UJ	0.42 UJ
NAPHTHALENE	13	mg/kg	**2200**	0.41 U	0.33 U	**5.4**	**120**	0.41 U	0.42 U
PHENANTHRENE	50	mg/kg	**490**	0.41 U	0.33 U	**1.4**	**60**	0.41 U	0.42 U
PYRENE	50	mg/kg	**370**	**0.16 J**	0.33 U	0.47 U	**26**	0.41 U	0.42 U
Benzo(a)pyrene-TE		mg/kg	**111.8**				**7.9**		
Total PAHs		mg/kg	**6023**	**0.32**		**12.67**	**443.5**		
Semi-Volatile Organic Compounds (SVOCs)									
2-NITROPHENOL	0.33	mg/kg	36 U	0.41 U	0.33 U	0.47 U	1.9 U	0.41 UJ	0.42 UJ
3,3'-DICHLOROBENZIDINE		mg/kg	71 U	0.81 U	0.66 U	0.93 U	3.8 U	0.83 UJ	0.85 UJ
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	36 U	**0.25 J**	0.33 U	0.47 U	1.9 U	0.41 UJ	0.42 UJ
DIBENZOFURAN	6.2	mg/kg	**35 J**	0.41 U	0.33 U	0.47 U	**2.4**	0.41 U	0.42 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**6058**	**0.57**		**12.67**	**445.9**		

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	SB-13B(20-21) 8/22/2003	SB-13B(23-24) 8/22/2003	SB14 (35.5-36) 8/26/2003	SB-15 (33-37) 8/26/2003	SB-16 (24-25) 8/27/2003	SB-17 (37.5-38.5) 8/27/2003
Polycyclic Aromatic Hydrocarbons (PAHs)								
2-METHYLNAPHTHALENE	36.4	mg/kg	0.38 U	**8**	**190 J**	**110**	0.41 U	0.36 U
ACENAPHTHENE	50	mg/kg	0.38 U	**4.3**	**98 J**	**78**	0.41 U	0.36 U
ACENAPHTHYLENE	41	mg/kg	0.38 U	**0.57**	**16 J**	**14**	0.41 U	0.36 U
ANTHRACENE	50	mg/kg	0.38 U	**2.2**	**49 J**	**40**	0.41 U	0.36 U
BENZO(A)ANTHRACENE	0.224	mg/kg	0.38 U	**1.7**	**31 J**	**28**	0.41 U	0.36 U
BENZO(A)PYRENE	0.061	mg/kg	0.38 U	**1.1**	**19 J**	**18**	0.41 U	0.36 U
BENZO(B)FLUORANTHENE	1.1	mg/kg	0.38 U	**0.51**	**7.6 J**	**8**	0.41 U	0.36 U
BENZO(GHI)PERYLENE	50	mg/kg	0.38 UJ	0.42 UJ	**8 J**	7.4 U	0.41 U	0.36 U
BENZO(K)FLUORANTHENE	1.1	mg/kg	0.38 U	**0.74**	**11 J**	**13**	0.41 U	0.36 U
CHRYSENE	0.4	mg/kg	0.38 U	**1.4**	**28 J**	**25**	0.41 U	0.36 U
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	0.38 UJ	0.42 UJ	**2.9 J**	7.4 U	0.41 U	0.36 U
FLUORANTHENE	50	mg/kg	0.38 U	**2.4**	**48 J**	**42**	0.41 U	0.36 U
FLUORENE	50	mg/kg	0.38 U	**2.6**	**52 J**	**48**	0.41 U	0.36 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	0.38 UJ	0.42 UJ	**6.3 J**	7.4 U	0.41 U	0.36 U
NAPHTHALENE	13	mg/kg	**0.4**	**8.7**	**190 J**	**150**	0.41 U	0.36 U
PHENANTHRENE	50	mg/kg	0.38 U	**7.6**	**180 J**	**120**	0.41 U	0.36 U
PYRENE	50	mg/kg	0.38 U	**3.9**	**78 J**	**76**	0.41 U	0.36 U
Benzo(a)pyrene-TE		mg/kg		**1.3**	**26.5**	**21.8**		
Total PAHs		mg/kg	**0.4**	**45.72**	**1014.8**	**770**		
Semi-Volatile Organic Compounds (SVOCs)								
2-NITROPHENOL	0.33	mg/kg	0.38 UJ	0.42 UJ	4.1 UJ	7.4 U	0.41 U	0.36 U
3,3'-DICHLOROBENZIDINE		mg/kg	0.77 UJ	0.84 UJ	8.3 UJ	15 U	0.83 U	0.72 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	0.38 UJ	0.42 UJ	4.1 UJ	7.4 U	0.41 U	0.36 U
DIBENZOFURAN	6.2	mg/kg	0.38 U	**0.26 J**	**5.4 J**	**4.8 J**	0.41 U	0.36 U
Total SVOCs (Including PAH compounds)	500	mg/kg	**0.4**	**45.98**	**1020.2**	**774.8**		

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	MW-01(29-33) 8/22/2003	MW-02 (27-31) 8/23/2003	MW-03 (21-25) 8/25/2003	MW-05 (45-47) 8/21/2003	MW-06 (29-31) 8/19/2003	SB-01 (16-20) 8/19/2003
Inorganics									
ALUMINUM	25000	33000	mg/kg	**14300**	**10700**	**10200**	**12000**	**15500**	**4970**
ANTIMONY	N/A	N/A	mg/kg	**2.5 J**	**2.4 J**	**1.5 J**	**1.8**	**2.2 J**	**2.9 J**
ARSENIC	7.5	12	mg/kg	**4**	**1.7**	**1.6**	**3.1**	**2.8**	**22.2**
BARIUM	300	600	mg/kg	**266 J**	**80.4 J**	**23.6 J**	**124**	**163**	**176**
BERYLLIUM	0.16	1.75	mg/kg	**0.88**	**0.53**	**0.56**	**0.7**	**0.99**	**0.42**
CADMIUM	1	1	mg/kg	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.02 U
CALCIUM	35000	35000	mg/kg	**12400 J**	**25800 J**	**1090 J**	**18800**	**14400**	**23000**
CHROMIUM	10	40	mg/kg	**22.4 J**	**21 J**	**15.8 J**	**20.3**	**23.9**	**30**
COBALT	30	60	mg/kg	**12.9**	**10.1**	**7.6**	**10.8**	**13.2**	**21.9**
COPPER	25	50	mg/kg	**24.7 J**	**20.9 J**	**19.7 J**	**21.2**	**24.5 J**	**112 J**
CYANIDE	N/A	N/A	mg/kg	1.1 UJ	1.3 UJ	1.2 UJ	0.76 U	1.2 UJ	**7.4 J**
IRON	2000	N/A	mg/kg	**28300**	**19300**	**15000**	**22800**	**27400**	**107000**
LEACHABLE PH	N/A	N/A	S.U.	**8.21**	**8.04**	**7.24**	**8.63**		**9.02**
LEAD	37	500	mg/kg	**12.9 J**	**6.8 J**	**10.8 J**	**10.1**	**14.2**	**306**
MAGNESIUM	4000	5000	mg/kg	**8500 J**	**14900 J**	**3790 J**	**9640**	**10400**	**12100**
MANGANESE	5000	5000	mg/kg	**583**	**426**	**107**	**476**	**510**	**836**
MERCURY	0.1	0.2	mg/kg	0.006 UJ	0.007 UJ	**0.005 J**	0.005 U	0.006 U	**0.246**
NICKEL	13	25	mg/kg	**29.8**	**21.8**	**14.8**	**25.8**	**30.6**	**25.4**
POTASSIUM	43000	43000	mg/kg	**3320 J**	**3120 J**	**1350 J**	**3280**	**3760**	**892**
SELENIUM	2	3.9	mg/kg	**1.4**	**0.91**	**1.2**	**1.2**	**1.7**	**7.4**
SILVER	N/A	N/A	mg/kg	0.1 U	0.1 U	0.11 U	0.1 U	0.1 U	**0.18**
SODIUM	8000	8000	mg/kg	**261**	**464**	**489**	**201**	**435**	**339**
THALLIUM	N/A	N/A	mg/kg	**0.18**	**0.18**	**0.12**	**0.1723 J**	**0.1581 J**	**0.599 J**
VANADIUM	150	300	mg/kg	**28.9**	**28.3**	**19.9**	**27**	**30.7**	**88.9**
ZINC	20	50	mg/kg	**58.4 J**	**46.3 J**	**44.5 J**	**48.5**	**61.3**	**137**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SB-05 (26-28) 8/26/2003	SB-06 (21-23) 8/21/2003	SB-07 (12-16) 8/20/2003	SB-08 (8-9) 8/23/2003	SB-09 (22.5-23) 8/23/2003	SB-10 (21-23) 8/27/2003
Inorganics									
ALUMINUM	25000	33000	mg/kg	**13000**	**12900**	**710**	**9270**	**8780**	**4050 J**
ANTIMONY	N/A	N/A	mg/kg	**2.3 J**	**2.3**	**7.8**	**1.5 J**	**1.7 J**	**0.93 J**
ARSENIC	7.5	12	mg/kg	**2.2**	**2.8**	**43.7**	**3.1**	**2**	**1.6**
BARIUM	300	600	mg/kg	**141 J**	**128**	**292**	**48.9 J**	**89.6 J**	**12.2 J**
BERYLLIUM	0.16	1.75	mg/kg	**0.86**	**0.75**	**0.13**	**0.42**	**0.55**	**0.29 J**
CADMIUM	1	1	mg/kg	0.03 U	0.03 U	**1.9**	0.03 U	0.02 U	0.03 U
CALCIUM	35000	35000	mg/kg	**5340 J**	**18600**	**1470**	**13200 J**	**14400 J**	**1980**
CHROMIUM	10	40	mg/kg	**22.3 J**	**21.1**	**3.7**	**16 J**	**15.6 J**	**8.5**
COBALT	30	60	mg/kg	**15.2**	**12.2**	**2.8**	**6.9**	**8.6**	**2.6**
COPPER	25	50	mg/kg	**23.1 J**	**23.2**	**55**	**17.3 J**	**16.2 J**	**5.9 J**
CYANIDE	N/A	N/A	mg/kg	1.1 UJ	1.2 U	**25.9**	1.2 UJ	1 UJ	1.4 U
IRON	2000	N/A	mg/kg	**25100**	**25400**	**6670**	**16000**	**18000**	**7760 J**
LEACHABLE PH	N/A	N/A	S.U.	**8.34**	**8.38**	**8.18**	**10.3**	**8.06**	**7.91**
LEAD	37	500	mg/kg	**12 J**	**10.6**	**1820**	**44.3 J**	**7.8 J**	**5.1 J**
MAGNESIUM	4000	5000	mg/kg	**8050 J**	**9220**	**662**	**3350 J**	**6630 J**	R
MANGANESE	5000	5000	mg/kg	**847**	**552**	**37.3**	**349**	**442**	**89.9**
MERCURY	0.1	0.2	mg/kg	0.006 UJ	0.006 U	**0.164**	**0.114 J**	0.005 UJ	0.007 U
NICKEL	13	25	mg/kg	**34.1**	**29.1**	**5.7**	**13.2**	**20.5**	**7.2**
POTASSIUM	43000	43000	mg/kg	**3190 J**	**3080**	**245**	**1280 J**	**2410 J**	**588**
SELENIUM	2	3.9	mg/kg	**2**	**1.4**	**11.3**	**1.3**	**0.95**	**0.65 J**
SILVER	N/A	N/A	mg/kg	0.1 U	0.11 U	**0.73**	0.1 U	0.08 U	0.11 U
SODIUM	8000	8000	mg/kg	**232**	**226**	**298**	**303**	**172**	**1880**
THALLIUM	N/A	N/A	mg/kg	**0.23**	**0.1685 J**	**4.05 J**	**0.08**	**1.93**	**0.09**
VANADIUM	150	300	mg/kg	**27.5**	**26.5**	**10.7**	**19.5**	**20.2**	**11.9 J**
ZINC	20	50	mg/kg	**56.2 J**	**53.6**	**714**	**38.8 J**	**38.2 J**	**12.4 J**

Qualifiers
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.5
Subsurface Soil Analytical Results Summary (Below the Water Table or at the Bottom of the Boring)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Eastern USA Background	Units	SB-11A(7-8) 8/22/2003	SB-12 (19-21) 8/21/2003	SB-12 (21-23) 8/21/2003	SB-13B(20-21) 8/22/2003	SB-13B(23-24) 8/22/2003	SB14 (35.5-36) 8/26/2003
Inorganics									
ALUMINUM	25000	33000	mg/kg	**8660**	**3870**	**12400**	**8760**	**3080**	**11900**
ANTIMONY	N/A	N/A	mg/kg	**1.3 J**	**0.85**	**2.1**	**1.8**	**0.84**	6.5 UJ
ARSENIC	7.5	12	mg/kg	**2.3**	**0.76**	**2.8**	**2.5**	0.39 U	**1.8**
BARIUM	300	600	mg/kg	**52.9 J**	**34.1**	**146**	**69.3**	**42.4**	**62**
BERYLLIUM	0.16	1.75	mg/kg	**0.41**	**0.25**	**0.79**	**0.49**	**0.2**	**1.5**
CADMIUM	1	1	mg/kg	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.65 U
CALCIUM	35000	35000	mg/kg	**3570 J**	**949**	**5840**	**17900**	**1140**	**1690 J**
CHROMIUM	10	40	mg/kg	**12.1 J**	**8.1**	**20.4**	**17.2**	**6.7**	**21.5**
COBALT	30	60	mg/kg	**7**	**4.6**	**11.7**	**8.8**	**3.8**	**10.8**
COPPER	25	50	mg/kg	**22.6 J**	**9.2**	**20.8**	**18.8**	**6.5**	**14.7**
CYANIDE	N/A	N/A	mg/kg	1.1 UJ	1.2 U	1.2 U	0.93 U	0.8 U	1.1 UJ
IRON	2000	N/A	mg/kg	**14000**	**8870**	**26000**	**18000**	**7350**	**15400 J**
LEACHABLE PH	N/A	N/A	S.U.	**9.42**	**7.76**	**8.29**	**8.32**	**7.77**	**7.17**
LEAD	37	500	mg/kg	**29.2 J**	**3.7**	**11.1**	**7.3**	**3.2**	**4.1**
MAGNESIUM	4000	5000	mg/kg	**3220 J**	**1670**	**6890**	**8140**	**1640**	**17100**
MANGANESE	5000	5000	mg/kg	**286**	**401**	**603**	**402**	**746**	**449 J**
MERCURY	0.1	0.2	mg/kg	**0.04 J**	0.005 U	0.007 U	0.005 U	0.005 U	0.01 UJ
NICKEL	13	25	mg/kg	**14.8**	**12.6**	**29.3**	**24**	**17.2**	**20.4**
POTASSIUM	43000	43000	mg/kg	**1180 J**	**1100**	**3520**	**2270**	**888**	**1920**
SELENIUM	2	3.9	mg/kg	**0.95**	**0.55**	**1.5**	**0.98**	0.37 U	**1.6**
SILVER	N/A	N/A	mg/kg	0.1 U	0.1 U	0.11 U	0.09 U	0.1 U	1.3 U
SODIUM	8000	8000	mg/kg	**301**	**76.6**	**260**	**180**	**93.3**	649 U
THALLIUM	N/A	N/A	mg/kg	**0.08**	**0.0758 J**	**0.1718 J**	**0.1467 J**	**0.0615 J**	13 U
VANADIUM	150	300	mg/kg	**29.8**	**12**	**28.9**	**21.3**	**8.9**	**26.5**
ZINC	20	50	mg/kg	**62.4 J**	**17**	**55.4**	**38.3**	**14.8**	**127**

Qualifiers
U - The compound was not detected at the indicated concentration.
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R - Datapoint was rejected during data validation.

Detections above the NYSDEC Recommended Soil Cleanup Objective but below the Eastern USA Background.

Detections above the NYSDEC Recommended Soil Cleanup Objective and Eastern USA Background.

Table 3.6
Groundwater Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Water Quality Criteria	Units	Development DW1-5-6 8/28/2003	Development DW2-3 8/28/2003	MW01 MW0120030905 9/5/2003	MW02 MW0220030904 9/4/2003	MW02-DUP GWDUP09042003 9/4/2003	MW03 MW0320030904 9/4/2003	MW05 MW0520030905 9/5/2003	MW06 MW0620030904 9/4/2003
BTEX Compounds										
BENZENE	1	ug/l	**840**	**1700**	1 U	**5800**	**6100**	**900**	**0.29 J**	**2900**
ETHYLBENZENE	5	ug/l	**290**	**2600**	1 U	**4600**	**4600**	**170**	**0.33 J**	**1400**
TOLUENE	5	ug/l	25 U	**57**	1 U	**400**	**420**	25 U	1 U	100 U
XYLENES, TOTAL	5	ug/l	**30 J**	**2300 J**	3 U	**4300**	**4400**	**67 J**	3 U	**130 J**
TOTAL BTEX		ug/l	**1160**	**6657**		**15100**	**15520**	**1137**	**0.62**	**4430**
Volatile Organic Compounds (VOCs)										
1,2-DICHLOROETHENE (TOTAL)	5	ug/l	50 UJ	50 U	**2.1**	500 U	500 U	50 U	**2.4**	200 U
ACETONE	50	ug/l	R	R	R	R	R	R	**5.1 J**	R
CARBON DISULFIDE	60	ug/l	25 U	25 U	**0.41 J**	250 U	250 U	25 U	**0.43 J**	100 U
CHLOROFORM	7	ug/l	25 U	25 U	**1.6**	250 U	250 U	25 U	**0.95 J**	100 U
METHYLENE CHLORIDE	5	ug/l	25 U	25 UJ	**0.48 J**	250 UJ	250 UJ	25 UJ	1 UJ	100 UJ
TETRACHLOROETHENE	5	ug/l	25 U	25 U	**19**	250 U	250 U	25 U	**1**	100 U
TRICHLOROETHENE	5	ug/l	25 U	25 U	**1.2 J**	250 U	250 U	25 U	**0.47 J**	100 U
Total VOCs (Includes BTEX Compounds)		ug/l	**1160**	**6657**	**24.79**	**15100**	**15520**	**1137**	**10.97**	**4430**

U - The compound was not detected at the indicated concentration.
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Shaded are detections above the NYSDEC Water Quality Criteria

Table 3.6
Groundwater Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Water Quality Criteria	Units	Development DW1-5-6 8/28/2003	Development DW2-3 8/28/2003	MW01 MW0120030905 9/5/2003	MW02 MW0220030904 9/4/2003	MW02-DUP GWDUP09042003 9/4/2003	MW03 MW0320030904 9/4/2003	MW05 MW0520030905 9/5/2003	MW06 MW0620030904 9/4/2003
Polycyclic Aromatic Hydrocarbons (PAHs)										
2-METHYLNAPHTHALENE		ug/l	**570 J**	**1300**	**56**	**1200**	**1300 J**	**14**	**13**	**950 J**
ACENAPHTHENE	20	ug/l	**110**	**380**	10 UJ	**130 J**	**180 J**	**58 J**	**7 J**	**160 J**
ACENAPHTHYLENE		ug/l	10 U	**45 J**	10 U	**21 J**	**30 J**	10 UJ	10 U	10 UJ
ANTHRACENE	50	ug/l	**6 J**	**98**	10 UJ	**10 J**	**14 J**	10 UJ	10 UJ	**7 J**
BENZO(A)ANTHRACENE	0.002	ug/l	10 U	**48**	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(A)PYRENE	0	ug/l	10 U	**36 J**	10 U	10 U	10 U	10 U	10 U	10 U
CHRYSENE	0.002	ug/l	10 U	**46 J**	10 U	10 U	10 U	10 U	10 U	10 U
FLUORANTHENE	50	ug/l	10 U	**86**	10 U	10 U	10 U	10 U	10 U	10 U
FLUORENE	50	ug/l	**40**	**160**	**7 J**	**43 J**	**61 J**	10 UJ	10 U	**54 J**
NAPHTHALENE	10	ug/l	**4500**	**5600**	10 U	**9700**	**12000**	**560**	10 U	**9300**
PHENANTHRENE	50	ug/l	**32**	**330**	**5 J**	**42 J**	**61 J**	**8 J**	10 UJ	**40 J**
PYRENE	50	ug/l	10 U	**140**	10 U	10 U	**7 J**	10 U	10 U	10 U
Benzo(a)pyrene-TE		ug/l		**40.8**						
Total PAHs		ug/l	**5258**	**8269**	**68**	**11146**	**13653**	**640**	**20**	**10511**
Semi-Volatile Organic Compounds (SVOCs)										
4-METHYLPHENOL	1	ug/l	10 U	47 U	10 U	**4 J**	**6 J**	10 U	10 U	10 U
CARBAZOLE		ug/l	**10**	47 U	10 U	**8 J**	**11**	10 U	10 U	**17**
DI-N-BUTYL PHTHALATE	50	ug/l	10 U	**31 J**	10 U	10 U	10 U	10 U	10 U	10 U
DIBENZOFURAN		ug/l	**7 J**	47 U	10 U	**5 J**	**7 J**	10 U	10 U	**8 J**
Total SVOCs (Includes PAH Compounds)		ug/l	**5275**	**8300**	**68**	**11163**	**13677**	**640**	**20**	**10536**

U - The compound was not detected at the indicated concentration.
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R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Water Quality Criteria

Table 3.6
Groundwater Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Water Quality Criteria	Units	Development DW1-5-6 8/28/2003	Development DW2-3 8/28/2003	MW01 MW0120030905 9/5/2003	MW02 MW0220030904 9/4/2003	MW02-DUP GWDUP09042003 9/4/2003	MW03 MW0320030904 9/4/2003	MW05 MW0520030905 9/5/2003	MW06 MW0620030904 9/4/2003
Inorganics										
ALUMINUM - TOTAL		ug/l	**10800**	**20200**	15.6 U	**120**	**96.7**	**724**	**27.1**	**20.6**
ANTIMONY - TOTAL	3	ug/l	**8.4**	**5.6**	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
ARSENIC - TOTAL	25	ug/l	**5.4**	**9.2**	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	**7.4**
BARIUM - TOTAL	1000	ug/l	R	R	**119**	**103**	**105**	**65.2**	**169**	**53.6**
BERYLLIUM - TOTAL	3	ug/l	**0.78**	**1.3**	0.1 U	**0.17**	**0.16**	**0.31**	0.1 U	0.1 U
CALCIUM - TOTAL		ug/l	R	**239000**	**97900**	**78500**	**79900**	**99000**	**136000**	**58400**
CHROMIUM - TOTAL	50	ug/l	**15.5**	**33**	0.8 U	**0.86**	0.8 U	**1.6**	0.8 U	0.8 U
COBALT - TOTAL		ug/l	**10.8**	**12.3**	**1.8**	0.6 U	0.6 U	**0.63**	**1**	0.6 U
COPPER - TOTAL	200	ug/l	**23.9**	**52.8**	**1.9**	**0.92**	0.8 U	**1.2**	**1.1**	0.8 U
CYANIDE - AMENABLE		ug/l	**NA**	**NA**	10 U	**33**	**38**	10 U	**140**	**33**
CYANIDE - AVAILABLE		ug/l	**NA**	**NA**	2 UJ	**3.6 J**	**4.6 J**	**4.3 J**	**2.5 J**	2 UJ
CYANIDE - TOTAL	200	ug/l	**30**	**50**	10 U	**49**	**54**	10 U	**200**	**33**
IRON - TOTAL	300	ug/l	**20200 J**	**20200 J**	**410**	**650**	**612**	**1500**	**142**	**21800**
LEAD - TOTAL	25	ug/l	R	R	**4.3**	**1.9**	0.8 U	0.8 U	0.8 U	**10.8**
MAGNESIUM - TOTAL	35000	ug/l	R	R	**26900**	**56600**	**55500**	**87300**	**17700**	**34900**
MANGANESE - TOTAL	300	ug/l	**2900**	**546**	**6090**	**189**	**189**	**109**	**447**	**2350**
NICKEL - TOTAL	100	ug/l	**20.2**	**22.1**	**4.2**	**2.2**	**1.8**	**2.8**	**2.6**	0.6 U
POTASSIUM - TOTAL		ug/l	R	R	**14700**	**44200**	**42600**	**56900**	**16900**	**27200**
SELENIUM - TOTAL	10	ug/l	**5.9**	**5.3**	2.9 U	2.9 U	2.9 U	2.9 U	**6**	2.9 U
SODIUM - TOTAL	20000	ug/l	**171000**	**841000**	**237000**	**325000**	**314000**	**833000**	**184000**	**119000**
THALLIUM - TOTAL	0.5	ug/l	**0.06**	**0.1**	0.01 U	0.01 U	0.01 U	0.01 U	**0.02**	0.01 U
VANADIUM - TOTAL		ug/l	**29.6**	**60**	**0.88**	**1.4**	**1.5**	**3.3**	**4.7**	**1**
ZINC - TOTAL	5000	ug/l	**44.2**	**77.3**	2.9 U	2.9 U	**9.2**	**6.4**	2.9 U	**17.3**

U - The compound was not detected at the indicated
J - The result is less than the quantiation limit but greater
R - Datapoint was rejected during data validation.
NA - Not Analyzed.
Shaded are detections above the NYSDEC Water Quality

Table 3.7
NAPL Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	Units	SB-01 (20) 8/14/2003
BTEX Compounds		
BENZENE	mg/kg	**3370**
ETHYLBENZENE	mg/kg	**1410**
M/P-XYLENES	mg/kg	**5980**
O-XYLENE	mg/kg	**2670**
TOLUENE	mg/kg	**7020**
Total BTEX	mg/kg	**20450**
Volatile Organic Compounds (VOCs)		
STYRENE	mg/kg	**4260**
Total VOCs	mg/kg	**24710**
Polycyclic Aromatic Hydrocarbons (PAHs)		
1-METHLYNAPTHALENE	mg/kg	**5910**
2-METHYLNAPHTHALENE	mg/kg	**9840**
ACENAPHTHENE	mg/kg	**382**
ACENAPHTHYLENE	mg/kg	**2820**
ANTHRACENE	mg/kg	**1450**
BENZO(A)ANTHRACENE	mg/kg	**855**
BENZO(A)PYRENE	mg/kg	**543**
BENZO(B)FLUORANTHENE	mg/kg	**224**
BENZO(E)PYRENE	mg/kg	**268**
BENZO(GHI)PERYLENE	mg/kg	**241**
BENZO(K)FLUORANTHENE	mg/kg	**304**
CHRYSENE	mg/kg	**770**
DIBENZO(A,H)ANTHRACENE	mg/kg	**84**
FLUORANTHENE	mg/kg	**1250**
FLUORENE	mg/kg	**1400**
INDENO(1,2,3-CD)PYRENE	mg/kg	**260**
NAPHTHALENE	mg/kg	**22000 D**
PHENANTHRENE	mg/kg	**4530**
PYRENE	mg/kg	**1880**
Total Benzo(a)pyrene-TE	mg/kg	**764.7**
Total PAHs	mg/kg	**55011**
Semi-Volatile Organic Compounds (SVOCs)		
1,2,4-TRICHLOROBENZENE	mg/kg	**2590**
DIBENZOFURAN	mg/kg	**168**
PERYLENE	mg/kg	**87.3**
Total SVOCs	mg/kg	**57856.3**
Chemistry		
DENSITY	g/mL	**1.1206**
VISCOSITY	cST	**1000 >**
VISCOSITY (CP)	cP	**1000 >**
C0-PHENANTHRENE/ANTHRACENE	mg/kg	**5810**
C1-PHENANTHRENE/ANTHRACENE	mg/kg	**3810**
C2-PHENANTHRENE/ANTHRACENE	mg/kg	**1400**
C3-PHENANTHRENE/ANTHRACENE	mg/kg	**358**
C4-PHENANTHRENE/ANTHRACENE	mg/kg	**73.9**
C0-NAPHTHALENE	mg/kg	**22000 D**
C1-NAPHTHALENE	mg/kg	**9160**
C2-NAPHTHALENE	mg/kg	**4870**
C3-NAPHTHALENE	mg/kg	**1230**
C4-NAPHTHALENE	mg/kg	**380**
C0-FLUORENE	mg/kg	**1400**
C1-FLUORENE	mg/kg	**2020**
C2-FLUORENE	mg/kg	**698**
C3-FLUORENE	mg/kg	15.4 U
C0-FLUORANTHENE/PYRENE	mg/kg	**3880**
C1-FLUORANTHENE/PYRENE	mg/kg	**2300**
C2-FLUORANTHENE/PYRENE	mg/kg	**555**
C3-FLUORANTHENE/PYRENE	mg/kg	**94.6**
C0-DIBENZOTHIOPHENE	mg/kg	**537**
C1-DIBENZOTHIOPHENE	mg/kg	**704**
C2-DIBENZOTHIOPHENE	mg/kg	**494**
C3-DIBENZOTHIOPHENE	mg/kg	**852**
C0-BENZENE	mg/kg	**3370**
C1-BENZENE	mg/kg	**7580**
C2-BENZENE	mg/kg	**11200**
C3-BENZENE	mg/kg	**6020**
C4-BENZENE	mg/kg	**1220**
C5-BENZENE	mg/kg	**260**
C0-BENZO(A)ANTHRACENE/CHRYSENE	mg/kg	**1610**
C1-BENZO(A)ANTHRACENE/CHRYSENE	mg/kg	**698**
C2-BENZO(A)ANTHRACENE/CHRYSENE	mg/kg	**193**
C3-BENZO(A)ANTHRACENE/CHRYSENE	mg/kg	**42**
C4-BENZO(A)ANTHRACENE/CHRYSENE	mg/kg	15.4 U

U - The compound was not detected at the indicated concentration.

Table 3.8
Purifier Waste Analytical Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	TP-3B (8-8.5) 8/20/2003
BTEX Compounds			
BENZENE	0.06	mg/kg	0.01 U
ETHYLBENZENE	5.5	mg/kg	0.01 U
TOLUENE	1.5	mg/kg	0.01 U
XYLENES, TOTAL	1.2	mg/kg	0.03 U
Total BTEX		mg/kg	
Volatile Organic Compounds (VOCs)			
1,2-DICHLOROETHENE (TOTAL)	0.3	mg/kg	0.02 U
ACETONE	0.2	mg/kg	**0.024 J**
CARBON DISULFIDE	2.7	mg/kg	0.01 U
STYRENE		mg/kg	0.01 U
TETRACHLOROETHENE	1.4	mg/kg	0.01 U
TRICHLOROETHENE	0.7	mg/kg	0.01 U
Total VOCs (Including BTEX)	10	mg/kg	**0.024**

Qualifiers
U - The compound was not detected at the indicated
J - The result is less than the quantiation limit but greater than
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil

Table 3.8
Purifier Waste Analytical Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	TP-3B (8-8.5) 8/20/2003
Polycyclic Aromatic Hydrocarbons (PAHs)			
2-METHYLNAPHTHALENE	36.4	mg/kg	2.8 U
ACENAPHTHENE	50	mg/kg	2.8 U
ACENAPHTHYLENE	41	mg/kg	2.8 U
ANTHRACENE	50	mg/kg	2.8 U
BENZO(A)ANTHRACENE	0.224	mg/kg	2.8 U
BENZO(A)PYRENE	0.061	mg/kg	**1 J**
BENZO(B)FLUORANTHENE	1.1	mg/kg	2.8 U
BENZO(GHI)PERYLENE	50	mg/kg	2.8 U
BENZO(K)FLUORANTHENE	1.1	mg/kg	2.8 U
CHRYSENE	0.4	mg/kg	2.8 U
DIBENZO(A,H)ANTHRACENE	0.014	mg/kg	2.8 U
FLUORANTHENE	50	mg/kg	2.8 U
FLUORENE	50	mg/kg	2.8 U
INDENO(1,2,3-CD)PYRENE	3.2	mg/kg	2.8 U
NAPHTHALENE	13	mg/kg	2.8 U
PHENANTHRENE	50	mg/kg	2.8 U
PYRENE	50	mg/kg	**1.6 J**
Total Benzo(a)pyrene-TE			**1**
Total PAHs		mg/kg	**2.6**
Semi-Volatile Organic Compounds (SVOCs)			
2-NITROPHENOL	0.33	mg/kg	2.8 U
3,3'-DICHLOROBENZIDINE		mg/kg	5.5 U
BIS(2-ETHYLHEXYL) PHTHALATE	50	mg/kg	2.8 U
DIBENZOFURAN	6.2	mg/kg	2.8 U
Total SVOCs (Including PAH compounds)		mg/kg	**2.6**

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup

Table 3.8
Purifier Waste Analytical Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	NYSDEC Recommended Soil Cleanup Objective	Units	TP-3B (8-8.5) 8/20/2003
Inorganics			
ALUMINUM - TOTAL	25000	mg/kg	**3760**
ANTIMONY - TOTAL	0	mg/kg	**0.7**
ARSENIC - TOTAL	7.5	mg/kg	**3.5**
BARIUM - TOTAL	300	mg/kg	**44.6**
BERYLLIUM - TOTAL	0.16	mg/kg	**0.36**
CADMIUM - TOTAL	1	mg/kg	0.03 U
CALCIUM - TOTAL	35000	mg/kg	**332000**
CHROMIUM - TOTAL	10	mg/kg	**5.6**
COBALT - TOTAL	30	mg/kg	**2**
COPPER - TOTAL	25	mg/kg	**15.7**
CYANIDE - TOTAL	0	mg/kg	1.6 U
IRON - TOTAL	2000	mg/kg	**3530**
LEACHABLE PH		S.U.	**8.32**
LEAD - TOTAL	37	mg/kg	**88.5**
MAGNESIUM - TOTAL	4000	mg/kg	**2440**
MANGANESE - TOTAL	5000	mg/kg	**154**
MERCURY - TOTAL	0.1	mg/kg	**0.054**
NICKEL - TOTAL	13	mg/kg	**5**
POTASSIUM - TOTAL	43000	mg/kg	**373**
SELENIUM - TOTAL	2	mg/kg	**0.81**
SILVER - TOTAL	0	mg/kg	0.14 U
SODIUM - TOTAL	8000	mg/kg	**1380**
SULFATE		mg/kg	**298**
SULFITE		ug/l	**1000**
THALLIUM - TOTAL	0	mg/kg	**0.0875 J**
VANADIUM - TOTAL	150	mg/kg	**6.4**
ZINC - TOTAL	20	mg/kg	**49.3**

U - The compound was not detected at the indicated
J - The result is less than the quantiation limit but greater than
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended

Table 3.9
TCLP Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	Maximum Concentration of Contaminants for the Toxicity Characteristic (ug/l)	Units	SB-01 (16-20) 8/19/2003	SB-06 (8-10) 8/21/2003	SB-07 (12-16) 8/20/2003	SB-13 (4-6) 8/20/2003	SB-13B(9-11) 8/22/2003	TP-01 (8.5-9) 8/19/2003	TP-02 (8-82) 8/19/2003
BTEX Compounds									
BENZENE	500	ug/l	**1700**	50 U	**1800**	50 U	50 U	50 U	50 U
Total BTEX		ug/l	**1700**		**1800**				
Volatile Organic Compounds (VOCs)									
1,1-DICHLOROETHENE	700	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
1,2-DICHLOROETHANE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-BUTANONE (methyl ethyl ketone)	200,000	ug/l	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
CARBON TETRACHLORIDE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
CHLOROBENZENE	100,000	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
CHLOROFORM	6,000	ug/l	**12 J**	**16 J**	**11 J**	50 U	**15 J**	**48 J**	**42 J**
TETRACHLOROETHENE	700	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
TRICHLOROETHENE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U	50 U
VINYL CHLORIDE	200	ug/l	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Total VOCs		ug/l	**1712**	**16**	**1811**		**15**	**48**	**42**
Semi-Volatile Organic Compounds (SVOCs)									
1,4-DICHLOROBENZENE	7,500	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
2,4,5-TRICHLOROPHENOL	400,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
2,4,6-TRICHLOROPHENOL	2,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
2,4-DINITROTOLUENE	130	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
2-METHYLPHENOL (o-cresol)	200,000	ug/l	40 U	67 U	**15 J**	40 U	40 U	40 U	40 U
3-METHYLPHENOL (m-cresol)	200,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
4-METHYLPHENOL (p-cresol)	200,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROBENZENE	130	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROBUTADIENE	500	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROETHANE	3,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
NITROBENZENE	2,000	ug/l	40 U	67 U	40 U	40 U	40 U	40 U	40 U
PENTACHLOROPHENOL	100,000	ug/l	200 U	330 U	200 U	200 U	200 U	200 U	200 U
PYRIDINE	5,000	ug/l	100 U	170 U	100 U	100 U	100 U	100 U	100 U
Total SVOCs		ug/l			**15**				
Inorganics									
ARSENIC - TOTAL	5,000	ug/l	**5.4 B**	3.1 U	**22.4**	**4.9 B**	**4.8 B**	3.1 U	**7.7 B**
BARIUM - TOTAL	100,000	ug/l	**601**	**391**	**486**	**726**	**348**	**601**	**1380**
CADMIUM - TOTAL	1,000	ug/l	**1 B**	0.2 U	0.2 U	0.2 U	0.2 U	**0.81 B**	**17.4**
CHROMIUM - TOTAL	5,000	ug/l	**1.9 B**	**10.9**	**5.5 B**	**7.6 B**	**13.6**	**1.6 B**	**13**
LEAD - TOTAL	5,000	ug/l	**55.4**	**10.6**	**281**	**1130**	**13**	**187**	**909**
MERCURY - TOTAL	200	ug/l	0.095 U	0.095 U	0.095 U	**1.3**	0.095 U	**0.757**	**0.948**
SELENIUM - TOTAL	1,000	ug/l	**3.7 B**	**6.4 B**	2.9 U	2.9 U	**4.3 B**	2.9 U	**3 B**
SILVER - TOTAL	5,000	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U

U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.9
TCLP Analytical Results Summary
Consolidated Edison, Former MGP
East 115th Street, New York, New York

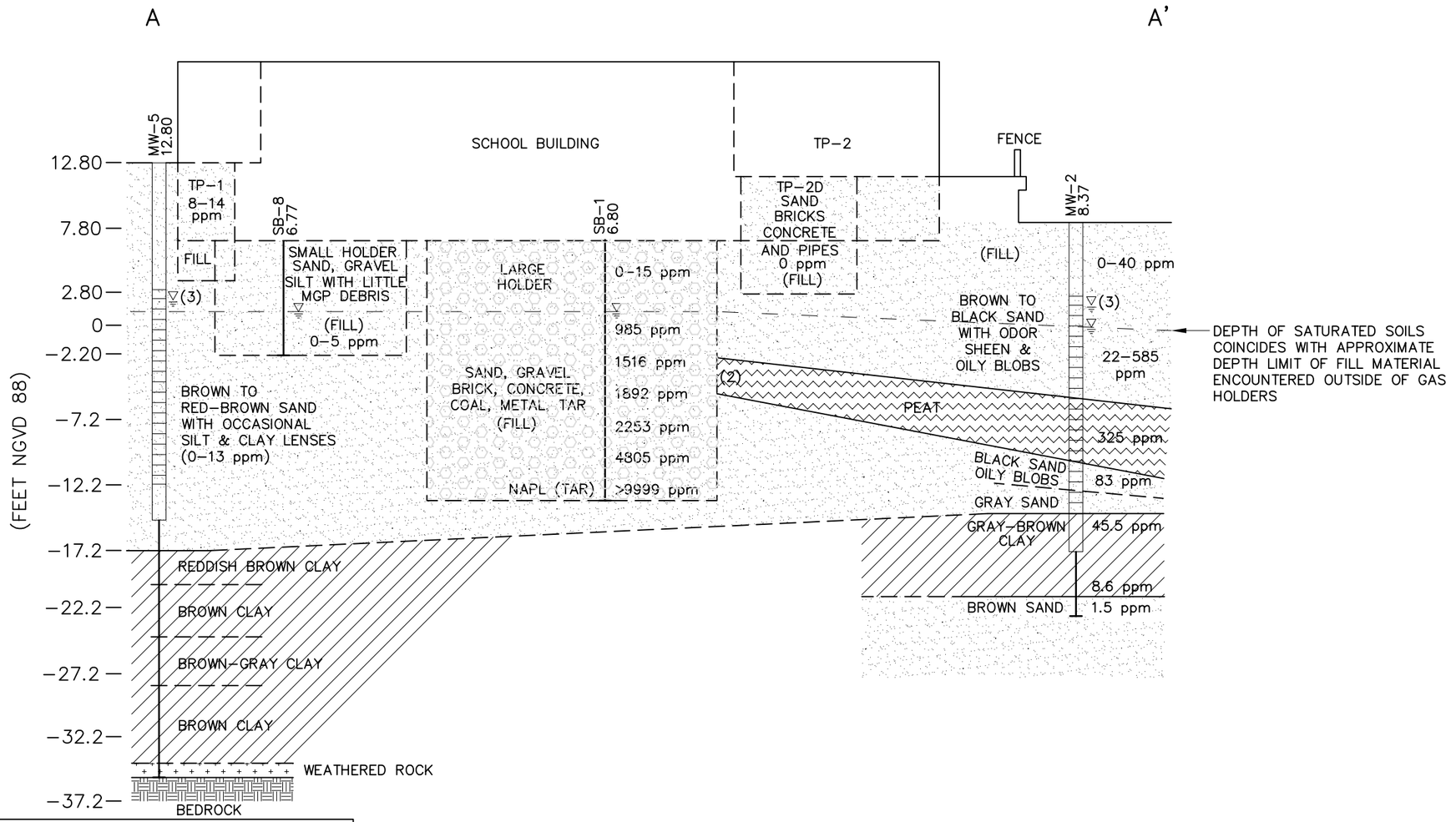
Compound	Maximum Concentration of Contaminants for the Toxicity Characteristic (ug/l)	Units	TP-02C 8/22/2003	TP-3 (9-10) 8/20/2003	TP-3B (8-8.5) 8/20/2003	TP-04 (8) 8/21/2003	TP-4 (8) DUP-01 8/21/2003	TP-05 8/21/2003
BTEX Compounds								
BENZENE	500	ug/l	50 U	**13 J**	50 U	50 U	50 U	50 U
Total BTEX		ug/l		**13**				
Volatile Organic Compounds (VOCs)								
1,1-DICHLOROETHENE	700	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
1,2-DICHLOROETHANE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
2-BUTANONE (methyl ethyl ketone)	200,000	ug/l	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
CARBON TETRACHLORIDE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
CHLOROBENZENE	100,000	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
CHLOROFORM	6,000	ug/l	**12 J**	**12 J**	**12 J**	**16 J**	**15 J**	**14 J**
TETRACHLOROETHENE	700	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
TRICHLOROETHENE	500	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
VINYL CHLORIDE	200	ug/l	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Total VOCs		ug/l	**12**	**25**	**12**	**16**	**15**	**14**
Semi-Volatile Organic Compounds (SVOCs)								
1,4-DICHLOROBENZENE	7,500	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
2,4,5-TRICHLOROPHENOL	400,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
2,4,6-TRICHLOROPHENOL	2,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
2,4-DINITROTOLUENE	130	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
2-METHYLPHENOL (o-cresol)	200,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
3-METHYLPHENOL (m-cresol)	200,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
4-METHYLPHENOL (p-cresol)	200,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROBENZENE	130	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROBUTADIENE	500	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
HEXACHLOROETHANE	3,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
NITROBENZENE	2,000	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
PENTACHLOROPHENOL	100,000	ug/l	200 U	200 U	200 U	200 U	200 U	200 U
PYRIDINE	5,000	ug/l	100 U	100 U	100 U	100 U	100 U	100 U
Total SVOCs		ug/l						
Inorganics								
ARSENIC - TOTAL	5,000	ug/l	3.1 U	**5.2 B**	**7.5 B**	**3.7 B**	3.1 U	3.1 U
BARIUM - TOTAL	100,000	ug/l	**871**	**352**	**137**	**234**	**257**	**104 B**
CADMIUM - TOTAL	1,000	ug/l	**5.4**	0.2 U	**0.34 B**	0.2 U	0.2 U	**2.2 B**
CHROMIUM - TOTAL	5,000	ug/l	**8.3**	**1.4 B**	**1 B**	**0.94 B**	0.8 U	**2.2 B**
LEAD - TOTAL	5,000	ug/l	**783**	**44.2 E**	**11.8 E**	**4 B**	**3 B**	**145 E**
MERCURY - TOTAL	200	ug/l	0.095 U	0.095 U	**0.095 B**	0.095 U	0.095 U	0.095 U
SELENIUM - TOTAL	1,000	ug/l	**6**	2.9 U	2.9 U	**3.8 B**	**3.3 B**	**4.4 B**
SILVER - TOTAL	5,000	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U

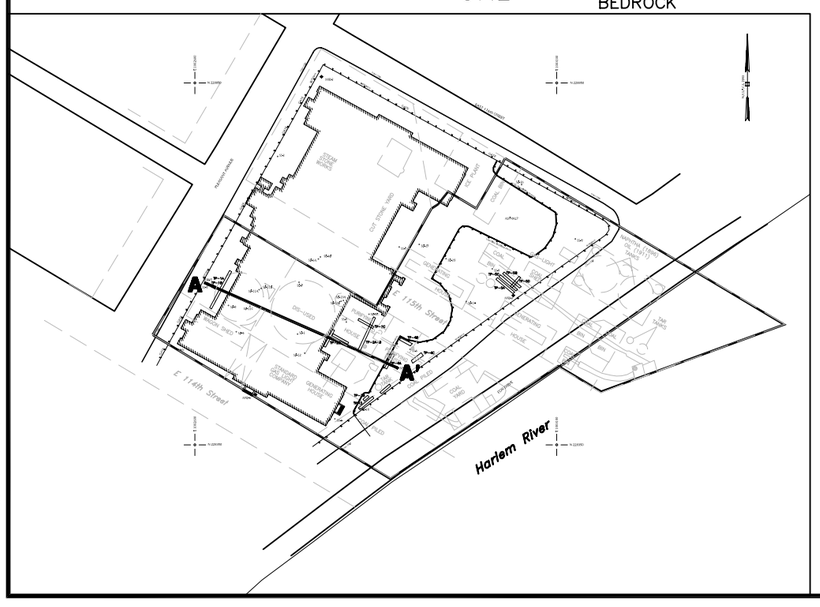
U - The compound was not detected at the indicated concentration.
J - The result is less than the quantiation limit but greater than zero.
R - Datapoint was rejected during data validation.
Shaded are detections above the NYSDEC Recommended Soil Cleanup Objective.

Table 3.10
Analytical Summary (Pipe Water Sample)
Consolidated Edison, Former MGP
East 115th Street, New York, New York

Compound	Units	Pipe Water Sample ID = 149956 8/22/2003
Petroleum		
FUEL OIL #2	ug/l	950 U
FUEL OIL #4	ug/l	950 U
FUEL OIL #6	ug/l	950 U
GASOLINE	ug/l	950 U
KEROSENE	ug/l	950 U
MOTOR OIL	ug/l	950 U
OTHER-1	ug/l	950 U
Polychlorinated Biphenyls (PCBs)		
AROCLOR 1016	ug/l	0.5 U
AROCLOR 1221	ug/l	0.5 U
AROCLOR 1232	ug/l	0.5 U
AROCLOR 1242	ug/l	0.5 U
AROCLOR 1248	ug/l	0.5 U
AROCLOR 1254	ug/l	0.5 U
AROCLOR 1260	ug/l	0.5 U

U - The compound was not detected at the indicated concentration.





NOTES:

1. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. ELEVATION OF PEAT LAYER APPROXIMATED FROM SB-12.
3. WATER TABLE ELEVATION ON 8/28/03.

10
VERTICAL EXAGGERATION 4:1
0 40
SCALE IN FEET

FILENAME: 186920OB.DWG

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: S.O.
APPROVED BY: D.S.

ENSR® INTERNATIONAL
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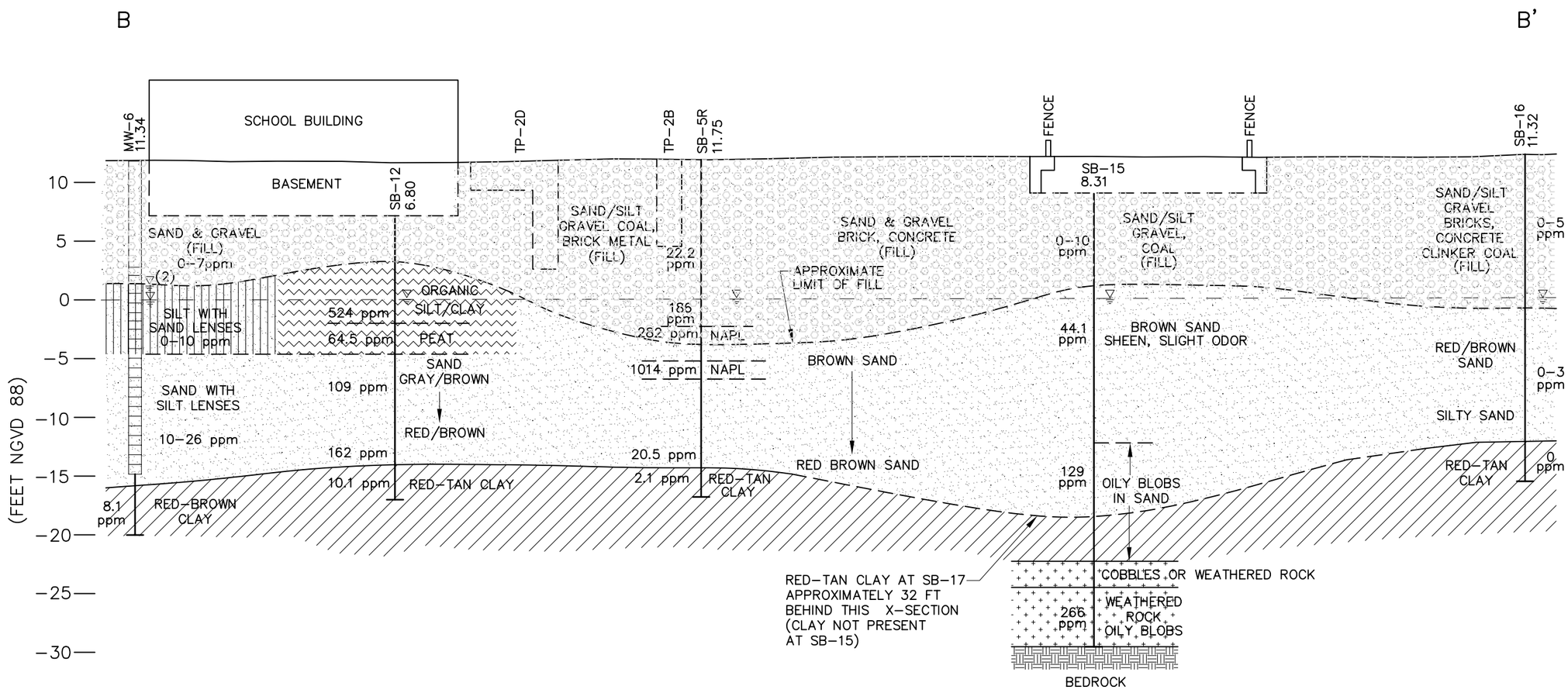
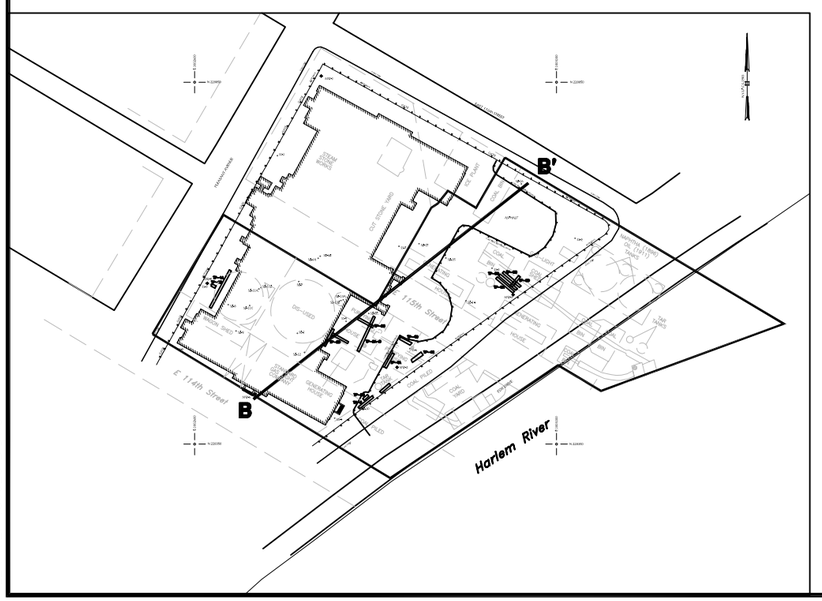
CROSS SECTION A-A'
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE: AS SHOWN
DATE: 10/03
PROJECT NUMBER: 01869-055-0000

FIGURE NUMBER: **3.1**

SHEET NUMBER: 1





NOTES:

1. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. WATER TABLE ELEVATION ON 8/28/03.

10
VERTICAL
EXAGGERATION
4:1
0
40
SCALE IN FEET

FILENAME: 1869201B.DWG

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
	J.E.B.	S.O.	D.S.

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CROSS SECTION B-B'
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	10/03	01869-055-0000

FIGURE NUMBER:
3.2

SHEET NUMBER:
1

Surveyed Elevations (Feet) NGVD88				8/28/03
Well	Ground	Top PVC Casing	GW	TIME
MW-1	13.75	13.37	1.96	1200
MW-2	8.37	8.21	1.15	1515
MW-3	7.44	7.21	-0.14	1330
MW-5	12.80	12.16	1.97	830
MW-6	11.34	10.60	1.67	1015

Approximate Harlem River Water Levels (NGVD88) At Horns Hook Station East 90th Street, Hell Gate, NY	
Time	Water Level (Feet)
4:00	- 3.41
5:00	- 4.27 LOW TIDE
6:00	- 3.99
7:00	- 3.25
8:00	- 2.49
9:00	- 1.47
10:00	- 0.02
11:00	1.09
12:00	1.14 HIGH TIDE
13:00	0.52
14:00	- 0.22
15:00	- 1.32
16:00	- 2.84
17:00	- 3.99
17:30	- 4.17 LOW TIDE
18:00	- 4.05

E 1002600 — N 228850

E 1003100 — N 228850

E 1002600 — N 228350

E 1003100 — N 228350

PLEASANT AVENUE

EAST 116th STREET

E 115th Street

E 114th Street

FDR DRIVE

FDR WALKWAY

Harlem River

CONC CURB

IRON FENCE

GATE

CONC WALL WITH IRON FENCE

2.0

1.5

1.0

0.5

0.0

MW-1 1.96

MW-5 1.97

MW-6 1.67

MW-3 -0.14

MW-4 1.15

SB-1 SB-4 SB-5R SB-6A SB-6B SB-7 SB-8 SB-9 SB-10 SB-11A SB-11B SB-11C SB-12 SB-13A SB-13B SB-14 SB-15 SB-16 SB-17

SS-1 SS-4 SS-5 SS-6 SS-8 SS-9

TP-1A TP-1B TP-2A-B TP-2C TP-2D TP-3 TP-3B TP-3C TP-4A TP-4B TP-4C TP-5A TP-5B TP-5C TP-5D

STEAM STONE WORKS

CUT STONE YARD

ICE PLANT

COAL BIN

ASPHALT

GENERATING HOUSE

COAL SHED

NAPHTHA (1896) OIL (1911) TANKS

RELIEF GAS HOLDER

DIS-USED

WAGON SHED

PURIFYING HOUSE

STANDARD GAS LIGHT COMPANY

TAR TANK

COAL YARD

COAL PILED

TAR TANKS

NOTES:

1. 1988 USGS NATIONAL GEODETIC VERTICAL DATUM (NGVD88).
2. WATER LEVELS MEASURED ON 8/28/03 PRIOR TO WELL DEVELOPMENT.
3. THE POSITION OF THE GAS HOLDERS WAS ADJUSTED BASED ON OBSERVATIONS AT TP-1 AND TP-2D. AS A RESULT, THE COAL PILE AREAS ON THE EASTERN PORTION OF THE SITE WERE COMPRESSED.

70 0 70 140

SCALE IN FEET
1" = 70'

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: D.S.
APPROVED BY: D.S.

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WATER TABLE MAP
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE: 1" = 70'
DATE: 10/03
PROJECT NUMBER: 01869-055-700

FIGURE NUMBER: **3.3**

SHEET NUMBER: 1

FILENAME: 1869202B.DWG

Compound	SS-01 8/18/2003
PAHs	
FLUORANTHENE	2 J
PHENANTHRENE	1.1 J
PYRENE	2 J

Compound	SS-02 8/18/2003
PAHs	
BENZO(A)ANTHRACENE	3.8 J
BENZO(A)PYRENE	2.7 J
BENZO(B)FLUORANTHENE	2.5 J
BENZO(K)FLUORANTHENE	2 J
CHRYSENE	3.4 J
FLUORANTHENE	7.4
PHENANTHRENE	5.6
PYRENE	6.6

Compound	SS-03 8/18/2003
PAHs	
ANTHRACENE	3.1 J
BENZO(A)ANTHRACENE	8.4
BENZO(A)PYRENE	5.9
BENZO(B)FLUORANTHENE	4.7
BENZO(GHI)PERYLENE	3.6 J
BENZO(K)FLUORANTHENE	4.9
CHRYSENE	7.4
FLUORANTHENE	15
INDENO(1,2,3-CD)PYRENE	3.5 J
PHENANTHRENE	12
PYRENE	13
CARBAZOLE	1.4 J

Compound	SS-04 8/18/2003
PAHs	
ACENAPHTHENE	1.6 J
ANTHRACENE	3.8 J
BENZO(A)ANTHRACENE	7.4
BENZO(A)PYRENE	5.9
BENZO(B)FLUORANTHENE	4.4
BENZO(GHI)PERYLENE	3.4 J
BENZO(K)FLUORANTHENE	4.5
CHRYSENE	6.2
FLUORANTHENE	17
FLUORENE	1.5 J
INDENO(1,2,3-CD)PYRENE	3.4 J
NAPHTHALENE	1.8 J
PHENANTHRENE	17
PYRENE	14
SVOCs	
CARBAZOLE	1.2 J

Compound	SS-05 8/18/2003
PAHs	
BENZO(A)PYRENE	1.8 J
CHRYSENE	1.9 J
FLUORANTHENE	3.1 J
PHENANTHRENE	1.4 J
PYRENE	2.9 J

Compound	SS-06 8/18/2003
PAHs	
BENZO(A)ANTHRACENE	2.2 J
BENZO(A)PYRENE	2.1 J
BENZO(B)FLUORANTHENE	1.9 J
CHRYSENE	2.4 J
FLUORANTHENE	4.1
PHENANTHRENE	2.5 J
PYRENE	3.8 J

Compound	SS-07 8/18/2003
PAHs	
ANTHRACENE	2.1 J
BENZO(A)ANTHRACENE	4.6
BENZO(A)PYRENE	3.5 J
BENZO(B)FLUORANTHENE	3 J
BENZO(K)FLUORANTHENE	2.8 J
CHRYSENE	4.2
FLUORANTHENE	9
PHENANTHRENE	7.6
PYRENE	6.6

Compound	SS-08 8/18/2003
PAHs	
ACENAPHTHYLENE	1.6 J
BENZO(A)ANTHRACENE	3.6 J
BENZO(A)PYRENE	3 J
BENZO(B)FLUORANTHENE	2.4 J
BENZO(K)FLUORANTHENE	2.2 J
CHRYSENE	3.4 J
FLUORANTHENE	3.7 J
PHENANTHRENE	1.4 J
PYRENE	5

Compound	SS-09 8/18/2003
PAHs	
BENZO(A)PYRENE	1.9 J
CHRYSENE	2.2 J
FLUORANTHENE	3.4 J
PHENANTHRENE	1.6 J
PYRENE	3.5 J

NOTES:

All values in mg/kg.

J – The result is less than the quantiation limit but but greater the MDL.

70 0 70 140

SCALE IN FEET

1" = 70'

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:

DRAWN BY: J.E.B.

CHECKED BY: D.S.

APPROVED BY: D.S.

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SURFACE SOIL ANALYTICAL RESULTS
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE: 1" = 70'

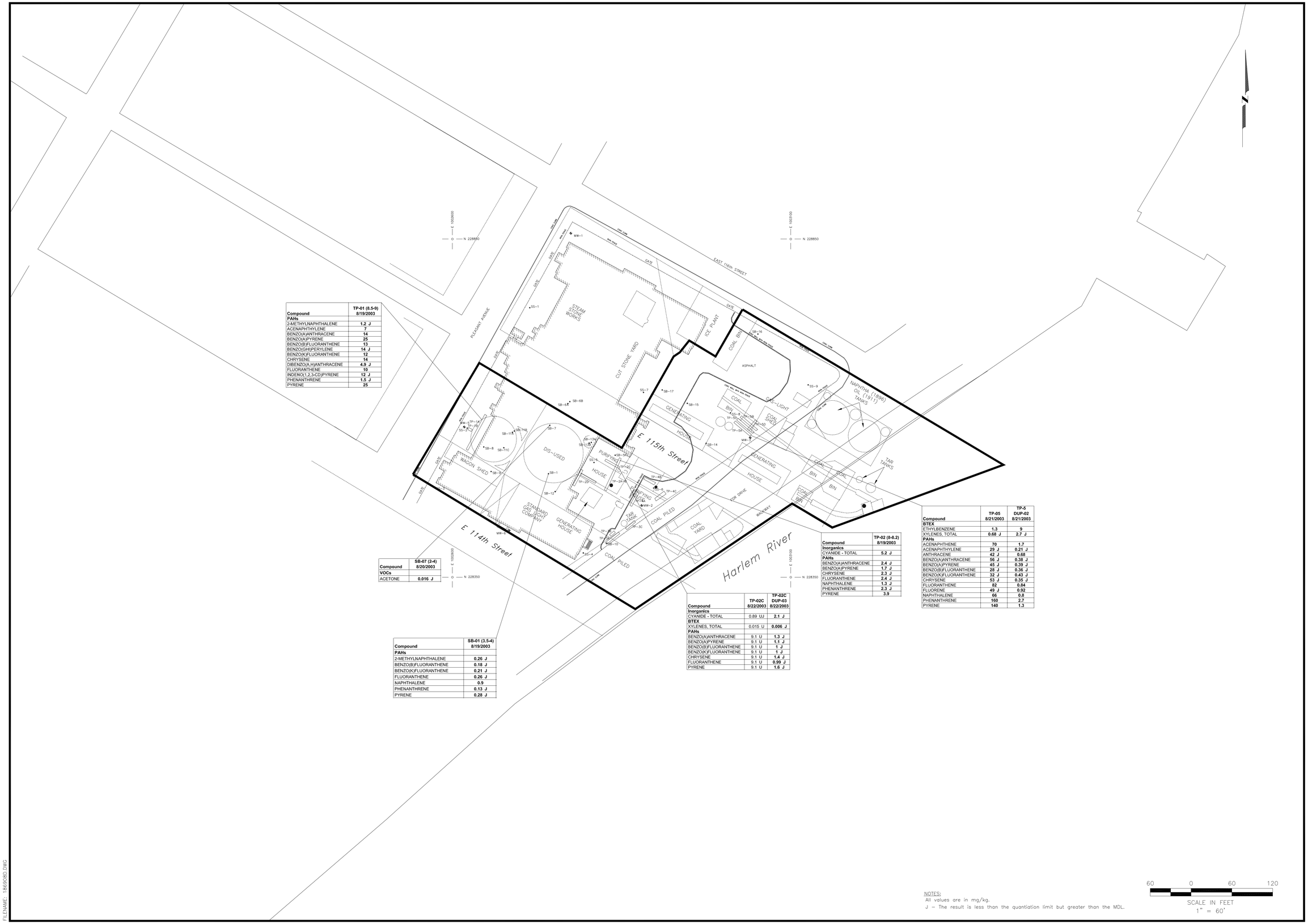
DATE: 10/03

PROJECT NUMBER: 01869-055-700

FIGURE NUMBER: **3.4**

SHEET NUMBER: 1

FILENAME: 1869204B.DWG



Compound	TP-01 (8.5-9) 8/19/2003
2-METHYLNAPHTHALENE	1.2 J
ACENAPHTHYLENE	7
BENZO(A)ANTHRACENE	14
BENZO(A)PYRENE	25
BENZO(B)FLUORANTHENE	13
BENZO(GHI)PERYLENE	14 J
BENZO(K)FLUORANTHENE	12
CHRYSENE	14
DIBENZO(A,H)ANTHRACENE	4.9 J
FLUORANTHENE	10
INDENO(1,2,3-CD)PYRENE	12 J
PHENANTHRENE	1.5 J
PYRENE	25

Compound	SB-07 (2-4) 8/20/2003
VOCs	
ACETONE	0.016 J

Compound	SB-01 (3,5-4) 8/19/2003
PAHs	
2-METHYLNAPHTHALENE	0.26 J
BENZO(B)FLUORANTHENE	0.18 J
BENZO(K)FLUORANTHENE	0.21 J
FLUORANTHENE	0.26 J
NAPHTHALENE	0.9
PHENANTHRENE	0.13 J
PYRENE	0.28 J

Compound	TP-02C 8/22/2003	TP-02C DUP-03 8/22/2003
Inorganics		
CYANIDE - TOTAL	0.89 UJ	2.1 J
BTEX		
XYLENES, TOTAL	0.015 U	0.006 J
PAHs		
BENZO(A)ANTHRACENE	9.1 U	1.3 J
BENZO(A)PYRENE	9.1 U	1.1 J
BENZO(B)FLUORANTHENE	9.1 U	1 J
BENZO(K)FLUORANTHENE	9.1 U	1 J
CHRYSENE	9.1 U	1.4 J
FLUORANTHENE	9.1 U	0.99 J
PYRENE	9.1 U	1.6 J

Compound	TP-02 (8-8.2) 8/19/2003
Inorganics	
CYANIDE - TOTAL	5.2 J
PAHs	
BENZO(A)ANTHRACENE	2.4 J
BENZO(A)PYRENE	1.7 J
CHRYSENE	2.3 J
FLUORANTHENE	2.4 J
NAPHTHALENE	1.3 J
PHENANTHRENE	2.3 J
PYRENE	3.9

Compound	TP-05 8/21/2003	TP-5 DUP-02 8/21/2003
BTEX		
ETHYLBENZENE	1.3	9
XYLENES, TOTAL	0.68 J	2.7 J
PAHs		
ACENAPHTHENE	70	1.7
ACENAPHTHYLENE	29 J	0.21 J
ANTHRACENE	42 J	0.68
BENZO(A)ANTHRACENE	56 J	0.38 J
BENZO(A)PYRENE	45 J	0.39 J
BENZO(B)FLUORANTHENE	28 J	0.36 J
BENZO(K)FLUORANTHENE	32 J	0.43 J
CHRYSENE	53 J	0.35 J
FLUORANTHENE	82	0.84
FLUORENE	49 J	0.92
NAPHTHALENE	66	0.8
PHENANTHRENE	160	2.7
PYRENE	140	1.3

NOTES:
All values are in mg/kg.
J – The result is less than the quantiation limit but greater than the MDL.

60 0 60 120
SCALE IN FEET
1" = 60'

NO.:	REVISIONS DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: S.O.
APPROVED BY: D.S.

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SUBSURFACE SOIL ANALYTICAL RESULTS ABOVE THE WATER TABLE CONSOLIDATED EDISON EAST 115TH STREET FORMER MGP NEW YORK, NY

SCALE: 1" = 60'
DATE: 10/03
PROJECT NUMBER: 01869-055-700

DRAWING NUMBER: 3.5

SHEET NUMBER: 1

FILENAME: 18690BD.DWG

Compound	MW-01(13-15) 8/22/2003
VOCs	
ACETONE	**0.026 J**
PAHs	
2-METHYLNAPHTHALENE	**0.76**
ACENAPHTHENE	**0.16 J**
FLUORENE	**0.31 J**
NAPHTHALENE	**0.21 J**
PHENANTHRENE	**0.66**

Compound	SB-12 (7-8) 8/21/2003
VOCs	
BENZENE	**0.23 J**
ETHYLBENZENE	**17**
XYLENES, TOTAL	**5.7**
BTEX	
ACENAPHTHENE	**15**
ANTHRACENE	**7.1**
BENZO(A)ANTHRACENE	**5**
BENZO(A)PYRENE	**3.2 J**
CHRYSENE	**4.5**
FLUORANTHENE	**9**
FLUORENE	**7.2**
NAPHTHALENE	**7.5**
PHENANTHRENE	**22**
PYRENE	**13**

Compound	SB-05 (18-19) 8/26/2003
BTEX	
BENZENE	**3.9**
ETHYLBENZENE	**110**
XYLENES, TOTAL	**66**
PAHs	
2-METHYLNAPHTHALENE	**260**
ACENAPHTHENE	**96**
ACENAPHTHYLENE	**7**
ANTHRACENE	**32**
BENZO(A)ANTHRACENE	**20**
BENZO(A)PYRENE	**12**
BENZO(B)FLUORANTHENE	**6.4**
BENZO(K)FLUORANTHENE	**7.8**
CHRYSENE	**17**
FLUORANTHENE	**28**
FLUORENE	**37**
NAPHTHALENE	**420**
PHENANTHRENE	**120**
PYRENE	**46**
SVOCs	
DIBENZOFURAN	**5.2**

Compound	SB-06 (8-10) 8/21/2003
PAHs	
2-METHYLNAPHTHALENE	**50**
ACENAPHTHENE	**35**
ACENAPHTHYLENE	**4.9 J**
ANTHRACENE	**13**
BENZO(A)ANTHRACENE	**22**
BENZO(A)PYRENE	**12**
BENZO(B)FLUORANTHENE	**10**
BENZO(K)FLUORANTHENE	**12**
CHRYSENE	**20**
FLUORANTHENE	**35**
FLUORENE	**19**
NAPHTHALENE	**45**
PHENANTHRENE	**44**
PYRENE	**57**

Compound	SB-17 (6-11) 8/27/2003
All Compounds Non-Detect	ND

Compound	SB-16 (8-12) 8/27/2003
PAHs	
BENZO(A)PYRENE	**1.5 J**
CHRYSENE	**1.4 J**
FLUORANTHENE	**3.1 J**
PHENANTHRENE	**2.9 J**
PYRENE	**3.1 J**

Compound	SB-15 (21-27) 8/26/2003
BTEX	
ETHYLBENZENE	**180**
XYLENES, TOTAL	**120**
PAHs	
2-METHYLNAPHTHALENE	**59**
ACENAPHTHENE	**76**
ACENAPHTHYLENE	**15**
ANTHRACENE	**42**
BENZO(A)ANTHRACENE	**35**
BENZO(A)PYRENE	**25**
BENZO(B)FLUORANTHENE	**15**
BENZO(GHI)PERYLENE	**5.8 J**
BENZO(K)FLUORANTHENE	**15**
CHRYSENE	**30**
FLUORANTHENE	**58**
FLUORENE	**50**
INDENO(1,2,3-CD)PYRENE	**5.2 J**
NAPHTHALENE	**61**
PHENANTHRENE	**110**
PYRENE	**95**
SVOCs	
DIBENZOFURAN	**4.5 J**

Compound	MW-05 (10-12) 8/21/2003
INORGANICS	
CYANIDE - TOTAL	**2.9**
BTEX	
BENZENE	**0.23 J**
ETHYLBENZENE	**2.6 J**
XYLENES, TOTAL	**0.7 J**
PAHs	
BENZO(A)ANTHRACENE	**2.1 J**
BENZO(A)PYRENE	**1.6 J**
CHRYSENE	**2.2 J**
FLUORANTHENE	**4.8**
PHENANTHRENE	**3.3 J**
PYRENE	**3.8**

Compound	MW-03 (11-13) 8/23/2003
BTEX	
ETHYLBENZENE	**7**
XYLENES, TOTAL	**3.2**
PAHs	
2-METHYLNAPHTHALENE	**80**
ACENAPHTHENE	**68**
ACENAPHTHYLENE	**11**
ANTHRACENE	**35**
BENZO(A)ANTHRACENE	**31**
BENZO(A)PYRENE	**22**
BENZO(B)FLUORANTHENE	**12**
BENZO(K)FLUORANTHENE	**12**
CHRYSENE	**26**
FLUORANTHENE	**53**
FLUORENE	**47**
NAPHTHALENE	**130**
PHENANTHRENE	**120**
PYRENE	**80**

Compound	SB-09 (10-14) 8/22/2003
BTEX	
ETHYLBENZENE	**11**
XYLENES, TOTAL	**3.6**
PAHs	
2-METHYLNAPHTHALENE	**390**
ACENAPHTHENE	**150**
ACENAPHTHYLENE	**11 J**
ANTHRACENE	**52**
BENZO(A)ANTHRACENE	**30**
BENZO(A)PYRENE	**20**
BENZO(K)FLUORANTHENE	**13 J**
CHRYSENE	**26**
FLUORANTHENE	**51**
FLUORENE	**75**
NAPHTHALENE	**550**
PHENANTHRENE	**170**
PYRENE	**79**
SVOCs	
DIBENZOFURAN	**7.2 J**

Compound	SB-07 (2-4) 8/20/2003
VOCs	
ACETONE	**0.016 J**

Compound	MW-06 (11-13) 8/19/2003
VOCs	
ACETONE	**0.054 J**
PAHs	
NAPHTHALENE	**0.3 J**
Compound	**MW-06 (21-23) 8/19/2003**
BTEX	
BENZENE	**0.23 J**
ETHYLBENZENE	**0.27 J**
XYLENES, TOTAL	**0.011 J**
VOCs	
ACETONE	**0.015 J**
PAHs	
NAPHTHALENE	**0.23 J**
SVOCs	
2-NITROPHENOL	**0.41 J**
3,3'-DICHLOROBENZIDINE	**0.82 J**

Compound	TP-3B (8-8.5) 8/20/2003
VOCs	
ACETONE	**0.024 J**
PAHs	
BENZO(A)PYRENE	**1 J**
PYRENE	**1.6 J**

Compound	SB-10 (9-15) 8/27/2003
PAHs	
2-METHYLNAPHTHALENE	**32**
ACENAPHTHENE	**24**
ANTHRACENE	**7.3**
BENZO(A)ANTHRACENE	**3.3 J**
BENZO(A)PYRENE	**2 J**
CHRYSENE	**2.9 J**
FLUORANTHENE	**5.3**
FLUORENE	**9.8**
NAPHTHALENE	**50**
PHENANTHRENE	**24**

Compound	MW-02 (9-15) 8/23/2003
BTEX	
BENZENE	**0.36 J**
ETHYLBENZENE	**5.2**
TOLUENE	**0.22 J**
XYLENES, TOTAL	**7.2**
PAHs	
2-METHYLNAPHTHALENE	**230**
ACENAPHTHENE	**76**
ANTHRACENE	**19 J**
BENZO(A)PYRENE	**15 J**
CHRYSENE	**16 J**
FLUORANTHENE	**34**
FLUORENE	**47**
NAPHTHALENE	**400**
PHENANTHRENE	**110**
PYRENE	**56**

Compound	TP-04 (8) 8/21/2003	TP-04 (8) DUP-01 8/21/2003
BTEX		
BENZENE	**0.006 J**	--
ETHYLBENZENE	**0.22**	--
XYLENES, TOTAL	**0.044**	--
VOCs		
ACETONE	**0.044 J**	--
CARBON DISULFIDE	**0.007 J**	--
PAHs		
ACENAPHTHENE	**0.9**	**1.7**
ACENAPHTHYLENE	0.59 U	**0.21 J**
ANTHRACENE	**0.28 J**	**0.68**
BENZO(A)ANTHRACENE	0.59 U	**0.38 J**
BENZO(A)PYRENE	0.59 U	**0.39 J**
BENZO(B)FLUORANTHENE	0.59 U	**0.36 J**
BENZO(K)FLUORANTHENE	0.59 U	**0.43 J**
CHRYSENE	0.59 U	**0.35 J**
FLUORANTHENE	**0.24 J**	**0.84**
FLUORENE	**0.44 J**	**0.92**
NAPHTHALENE	**0.25 J**	**0.8**
PHENANTHRENE	**1.3**	**2.7**
PYRENE	**0.37 J**	**1.3**

Compound	SB-14 (8-12) 8/26/2003	SB-14 (8-12) DUP5 8/26/2003
BTEX		
BENZENE	**4.6**	--
ETHYLBENZENE	**68**	--
XYLENES, TOTAL	**16**	--
PAHs		
2-METHYLNAPHTHALENE	**23 J**	**19**
ACENAPHTHENE	**96**	**66**
ACENAPHTHYLENE	**15 J**	**15**
ANTHRACENE	**45**	**35**
BENZO(A)ANTHRACENE	**34 J**	**30**
BENZO(A)PYRENE	**27 J**	**25**
BENZO(B)FLUORANTHENE	41 U	**15**
BENZO(GHI)PERYLENE	41 UJ	**6.7 J**
BENZO(K)FLUORANTHENE	41 U	**15**
CHRYSENE	**30 J**	**26**
FLUORANTHENE	**56**	**45**
FLUORENE	**42**	**34**
INDENO(1,2,3-CD)PYRENE	41 UJ	**5.9 J**
NAPHTHALENE	**92**	**63**
PHENANTHRENE	**160**	**100**
PYRENE	**93**	**73**
SVOCs		
DIBENZOFURAN	41 U	**2.8 J**

Compound	SB-01 (3.5-4) 8/19/2003
PAHs	
2-METHYLNAPHTHALENE	**0.26 J**
BENZO(B)FLUORANTHENE	**0.18 J**
BENZO(K)FLUORANTHENE	**0.21 J**
FLUORANTHENE	**0.26 J**
NAPHTHALENE	**0.9**
PHENANTHRENE	**0.13 J**
PYRENE	**0.28 J**

Compound	SB-13B(9-11) 8/22/2003
BTEX	
BENZENE	**8.8**
ETHYLBENZENE	**270**
XYLENES, TOTAL	**23**
PAHs	
2-METHYLNAPHTHALENE	**570**
ACENAPHTHENE	**200**
ACENAPHTHYLENE	**11**
ANTHRACENE	**51**
BENZO(A)ANTHRACENE	**33**
BENZO(A)PYRENE	**21**
BENZO(B)FLUORANTHENE	**13**
BENZO(GHI)PERYLENE	**3.5 J**
BENZO(K)FLUORANTHENE	**12**
CHRYSENE	**28**
FLUORANTHENE	**46**
FLUORENE	**56**
INDENO(1,2,3-CD)PYRENE	**3.6 J**
NAPHTHALENE	**890**
PHENANTHRENE	**230**
PYRENE	**96**
SVOCs	
DIBENZOFURAN	**9.4**

Compound	TP-3 (9-10) 8/20/2003
BTEX	
BENZENE	**0.74 J**
ETHYLBENZENE	**37 J**
TOLUENE	**0.56 J**
XYLENES, TOTAL	**17 J**
PAHs	
2-METHYLNAPHTHALENE	**4.7 J**
ACENAPHTHENE	**2.9 J**
ACENAPHTHYLENE	**2.3 J**
ANTHRACENE	**2.6 J**
BENZO(A)ANTHRACENE	**3.6 J**
BENZO(A)PYRENE	**4.1 J**
BENZO(B)FLUORANTHENE	**2 J**
BENZO(K)FLUORANTHENE	**2 J**
CHRYSENE	**3.2 J**
FLUORANTHENE	**6.8 J**
FLUORENE	**3.1 J**
NAPHTHALENE	**20 J**
PHENANTHRENE	**12 J**
PYRENE	**12 J**

NOTES:
All values are in mg/kg.
J – The result is less than the quantiation limit but greater than the MDL.

60 0 60 120
SCALE IN FEET
1" = 60'

REVISIONS

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DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: S.O.
APPROVED BY: D.S.

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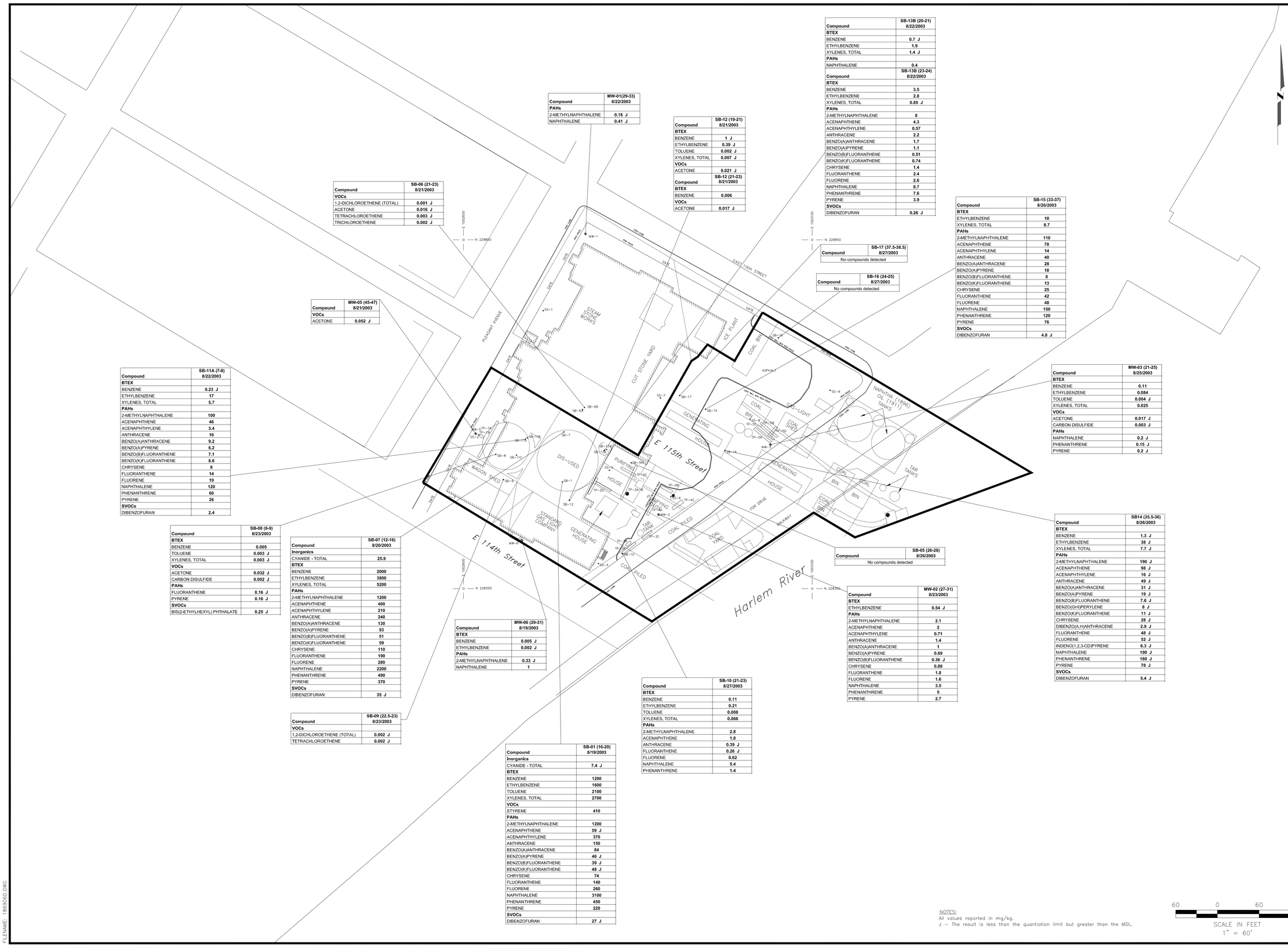
SUBSURFACE SOIL ANALYTICAL RESULTS NEAR OR BELOW THE WATER TABLE
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

SCALE: 1" = 60'
DATE: 10/03
PROJECT NUMBER: 01869-055-700

DRAWING NUMBER:
3.6

SHEET NUMBER:
1

FILENAME: 1869055D.DWG



Compound	MW-01(29-33) 8/22/2003
PAHs	
2-METHYLNAPHTHALENE	0.16 J
NAPHTHALENE	0.41 J

Compound	SB-12 (19-21) 8/21/2003
BTEX	
BENZENE	1 J
ETHYLBENZENE	0.39 J
TOLUENE	0.002 J
XYLENES, TOTAL	0.007 J
VOCs	
ACETONE	0.021 J
Compound	**SB-12 (21-23) 8/21/2003**
BTEX	
BENZENE	0.006
VOCs	
ACETONE	0.017 J

Compound	SB-13B (20-21) 8/22/2003
BTEX	
BENZENE	0.7 J
ETHYLBENZENE	1.9
XYLENES, TOTAL	1.4 J
PAHs	
NAPHTHALENE	0.4
Compound	**SB-13B (23-24) 8/22/2003**
BTEX	
BENZENE	3.5
ETHYLBENZENE	2.8
XYLENES, TOTAL	0.85 J
PAHs	
2-METHYLNAPHTHALENE	8
ACENAPHTHENE	4.3
ACENAPHTHYLENE	0.57
ANTHRACENE	2.2
BENZO(A)ANTHRACENE	1.7
BENZO(A)PYRENE	1.1
BENZO(B)FLUORANTHENE	0.51
BENZO(K)FLUORANTHENE	0.74
CHRYSENE	1.4
FLUORANTHENE	2.4
FLUORENE	2.6
NAPHTHALENE	8.7
PHENANTHRENE	7.6
PYRENE	3.9
SVOCs	
DIBENZOFURAN	0.26 J

Compound	SB-06 (21-23) 8/21/2003
VOCs	
1,2-DICHLOROETHENE (TOTAL)	0.001 J
ACETONE	0.016 J
TETRACHLOROETHENE	0.003 J
TRICHLOROETHENE	0.002 J

Compound	SB-17 (37.5-38.5) 8/27/2003
No compounds detected	

Compound	SB-16 (24-25) 8/27/2003
No compounds detected	

Compound	SB-15 (33-37) 8/26/2003
BTEX	
ETHYLBENZENE	10
XYLENES, TOTAL	8.7
PAHs	
2-METHYLNAPHTHALENE	110
ACENAPHTHENE	78
ACENAPHTHYLENE	14
ANTHRACENE	40
BENZO(A)ANTHRACENE	28
BENZO(A)PYRENE	18
BENZO(B)FLUORANTHENE	8
BENZO(K)FLUORANTHENE	13
CHRYSENE	25
FLUORANTHENE	42
FLUORENE	48
NAPHTHALENE	150
PHENANTHRENE	120
PYRENE	76
SVOCs	
DIBENZOFURAN	4.8 J

Compound	SB-11A (7-8) 8/22/2003
BTEX	
BENZENE	0.23 J
ETHYLBENZENE	17
XYLENES, TOTAL	5.7
PAHs	
2-METHYLNAPHTHALENE	100
ACENAPHTHENE	46
ACENAPHTHYLENE	3.4
ANTHRACENE	16
BENZO(A)ANTHRACENE	9.2
BENZO(A)PYRENE	6.2
BENZO(B)FLUORANTHENE	7.1
BENZO(K)FLUORANTHENE	8.6
CHRYSENE	8
FLUORANTHENE	14
FLUORENE	19
NAPHTHALENE	120
PHENANTHRENE	60
PYRENE	26
SVOCs	
DIBENZOFURAN	2.4

Compound	MW-03 (21-25) 8/25/2003
BTEX	
BENZENE	0.11
ETHYLBENZENE	0.084
TOLUENE	0.004 J
XYLENES, TOTAL	0.025
VOCs	
ACETONE	0.017 J
CARBON DISULFIDE	0.003 J
PAHs	
NAPHTHALENE	0.2 J
PHENANTHRENE	0.15 J
PYRENE	0.2 J

Compound	SB-08 (8-9) 8/23/2003
BTEX	
BENZENE	0.005
TOLUENE	0.003 J
XYLENES, TOTAL	0.003 J
VOCs	
ACETONE	0.032 J
CARBON DISULFIDE	0.002 J
PAHs	
FLUORANTHENE	0.16 J
PYRENE	0.16 J
SVOCs	
BIS(2-ETHYLHEXYL) PHTHALATE	0.25 J

Compound	SB-07 (12-16) 8/20/2003
Inorganics	
CYANIDE - TOTAL	25.9
BTEX	
BENZENE	2000
ETHYLBENZENE	3800
XYLENES, TOTAL	5200
PAHs	
2-METHYLNAPHTHALENE	1200
ACENAPHTHENE	400
ACENAPHTHYLENE	210
ANTHRACENE	240
BENZO(A)ANTHRACENE	130
BENZO(A)PYRENE	93
BENZO(B)FLUORANTHENE	51
BENZO(K)FLUORANTHENE	59
CHRYSENE	110
FLUORANTHENE	190
FLUORENE	280
NAPHTHALENE	2200
PHENANTHRENE	490
PYRENE	370
SVOCs	
DIBENZOFURAN	35 J

Compound	SB-09 (22.5-23) 8/23/2003
VOCs	
1,2-DICHLOROETHENE (TOTAL)	0.002 J
TETRACHLOROETHENE	0.002 J

Compound	MW-06 (29-31) 8/19/2003
BTEX	
BENZENE	0.005 J
ETHYLBENZENE	0.002 J
PAHs	
2-METHYLNAPHTHALENE	0.33 J
NAPHTHALENE	1

Compound	SB-10 (21-23) 8/27/2003
BTEX	
BENZENE	0.11
ETHYLBENZENE	0.21
TOLUENE	0.008
XYLENES, TOTAL	0.066
PAHs	
2-METHYLNAPHTHALENE	2.8
ACENAPHTHENE	1.8
ANTHRACENE	0.39 J
FLUORANTHENE	0.26 J
FLUORENE	0.62
NAPHTHALENE	5.4
PHENANTHRENE	1.4

Compound	SB-01 (16-20) 8/19/2003
Inorganics	
CYANIDE - TOTAL	7.4 J
BTEX	
BENZENE	1200
ETHYLBENZENE	1600
TOLUENE	2100
XYLENES, TOTAL	2700
VOCs	
STYRENE	410
PAHs	
2-METHYLNAPHTHALENE	1200
ACENAPHTHENE	59 J
ACENAPHTHYLENE	370
ANTHRACENE	150
BENZO(A)ANTHRACENE	84
BENZO(A)PYRENE	46 J
BENZO(B)FLUORANTHENE	39 J
BENZO(K)FLUORANTHENE	48 J
CHRYSENE	74
FLUORANTHENE	140
FLUORENE	260
NAPHTHALENE	3100
PHENANTHRENE	450
PYRENE	220
SVOCs	
DIBENZOFURAN	27 J

Compound	SB-05 (26-28) 8/26/2003
No compounds detected	

Compound	MW-02 (27-31) 8/23/2003
BTEX	
ETHYLBENZENE	0.54 J
PAHs	
2-METHYLNAPHTHALENE	2.1
ACENAPHTHENE	2
ACENAPHTHYLENE	0.71
ANTHRACENE	1.4
BENZO(A)ANTHRACENE	1
BENZO(A)PYRENE	0.69
BENZO(B)FLUORANTHENE	0.36 J
CHRYSENE	0.88
FLUORANTHENE	1.8
FLUORENE	1.6
NAPHTHALENE	3.5
PHENANTHRENE	5
PYRENE	2.7

Compound	SB14 (35.5-36) 8/26/2003
BTEX	
BENZENE	1.3 J
ETHYLBENZENE	38 J
XYLENES, TOTAL	7.7 J
PAHs	
2-METHYLNAPHTHALENE	190 J
ACENAPHTHENE	98 J
ACENAPHTHYLENE	16 J
ANTHRACENE	49 J
BENZO(A)ANTHRACENE	31 J
BENZO(A)PYRENE	19 J
BENZO(B)FLUORANTHENE	7.6 J
BENZO(GHI)PERYLENE	8 J
BENZO(K)FLUORANTHENE	11 J
CHRYSENE	28 J
DIBENZO(A,H)ANTHRACENE	2.9 J
FLUORANTHENE	48 J
FLUORENE	52 J
INDENO(1,2,3-CD)PYRENE	6.3 J
NAPHTHALENE	190 J
PHENANTHRENE	180 J
PYRENE	78 J
SVOCs	
DIBENZOFURAN	5.4 J

NOTES:
All values reported in mg/kg.
J – The result is less than the quantiation limit but greater than the MDL.

60 0 60 120
SCALE IN FEET
1" = 60'

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NO.: DESCRIPTION: DATE: BY:

DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: S.O.
APPROVED BY: D.S.

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SOIL ANALYTICAL RESULTS
BELOW THE WATER TABLE
OR AT BOTTOM OF BORING
CONSOLIDATED EDISON
EAST 115TH STREET FORMER MGP
NEW YORK, NY

PROJECT NUMBER: 01869-055-700
DATE: 10/03
SCALE: 1" = 60'

DRAWING NUMBER: 3.7
SHEET NUMBER: 1

FILENAME: 186906D.DWG

Compound	MW01 MW0120030905 9/5/2003
Inorganics	
CYANIDE - AMENABLE	-
CYANIDE - AVAILABLE	-
CYANIDE - TOTAL	-
VOCs	
1,2-DICHLOROETHENE (TOTAL)	**2.1**
CARBON DISULFIDE	**0.41 J**
CHLOROFORM	**1.6**
METHYLENE CHLORIDE	**0.48 J**
TETRACHLOROETHENE	**19**
TRICHLOROETHENE	**1.2 J**
PAHs	
2-METHYLNAPHTHALENE	**56**
FLUORENE	**7 J**
PHENANTHRENE	**5 J**

Compound	MW03 MW0320030904 9/4/2003
Inorganics	
CYANIDE - AMENABLE	-
CYANIDE - AVAILABLE	**4.3 J**
CYANIDE - TOTAL	-
BTEX Compounds	
BENZENE	**900**
ETHYLBENZENE	**170**
XYLENES, TOTAL	**67 J**
PAHs	
2-METHYLNAPHTHALENE	**14**
ACENAPHTHENE	**58 J**
NAPHTHALENE	**560**
PHENANTHRENE	**8 J**

Compound	MW05 MW0520030905 9/5/2003
Inorganics	
CYANIDE - AMENABLE	**140**
CYANIDE - AVAILABLE	**2.5 J**
CYANIDE - TOTAL	**200**
BTEX Compounds	
BENZENE	**0.29 J**
ETHYLBENZENE	**0.33 J**
VOCs	
1,2-DICHLOROETHENE (TOTAL)	**2.4**
ACETONE	**5.1 J**
CARBON DISULFIDE	**0.43 J**
CHLOROFORM	**0.95 J**
TETRACHLOROETHENE	**1**
TRICHLOROETHENE	**0.47 J**
PAHs	
2-METHYLNAPHTHALENE	**13**
ACENAPHTHENE	**7 J**

Compound	MW06 MW0620030904 9/4/2003
Inorganics	
CYANIDE - AMENABLE	**33**
CYANIDE - AVAILABLE	-
CYANIDE - TOTAL	**33**
BTEX Compounds	
BENZENE	**2900**
ETHYLBENZENE	**1400**
XYLENES, TOTAL	**130 J**
PAHs	
2-METHYLNAPHTHALENE	**950 J**
ACENAPHTHENE	**160 J**
ANTHRACENE	**7 J**
FLUORENE	**54 J**
NAPHTHALENE	**9300**
PHENANTHRENE	**40 J**
SVOCs	
CARBAZOLE	**17**
DIBENZOFURAN	**8 J**

Compound	MW02 MW0220030904 9/4/2003
Inorganics	
CYANIDE - AMENABLE	**33**
CYANIDE - AVAILABLE	**3.6 J**
CYANIDE - TOTAL	**49**
BTEX Compounds	
BENZENE	**5800**
ETHYLBENZENE	**4600**
TOLUENE	**400**
XYLENES, TOTAL	**4300**
PAHs	
2-METHYLNAPHTHALENE	**1200**
ACENAPHTHENE	**130 J**
ACENAPHTHYLENE	**21 J**
ANTHRACENE	**10 J**
FLUORENE	**43 J**
NAPHTHALENE	**9700**
PHENANTHRENE	**42 J**
SVOCs	
4-METHYLPHENOL	**4 J**
CARBAZOLE	**8 J**
DIBENZOFURAN	**5 J**

NOTES:

1. THE POSITION OF THE GAS HOLDERS WAS ADJUSTED BASED ON OBSERVATIONS AT TP-1 AND TP-2D. AS A RESULT, THE COAL PILE AREAS ON THE EASTERN PORTION OF THE SITE WERE COMPRESSED.

All values in mg/kg.

U – The compound was not detected at the indicated concentration.

J – The result is less than the quantiation limit but greater than the MDL.

R – Datapoint was rejected during data validation.

70 0 70 140

SCALE IN FEET

1" = 70'

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY: J.E.B.
CHECKED BY: D.S.
APPROVED BY: D.S.

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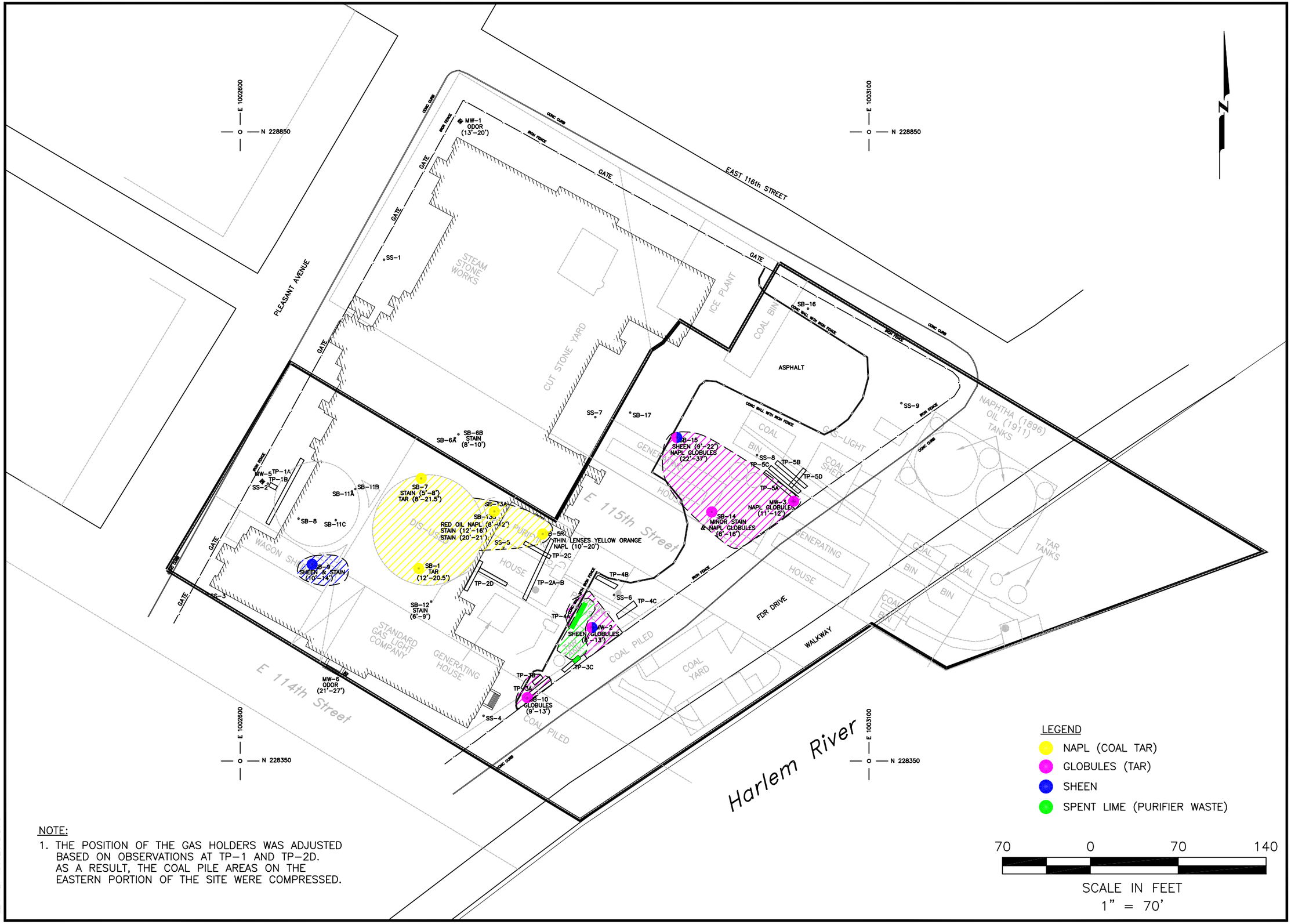
GROUNDWATER ANALYTICAL RESULTS CONSOLIDATED EDISON EAST 115TH STREET FORMER MGP NEW YORK, NY

SCALE: 1" = 70'
DATE: 11/03
PROJECT NUMBER: 01869-055-700

FIGURE NUMBER: **3.8**

SHEET NUMBER: 1

FILENAME: 1869210B.DWG



NOTE:

1. THE POSITION OF THE GAS HOLDERS WAS ADJUSTED BASED ON OBSERVATIONS AT TP-1 AND TP-2D. AS A RESULT, THE COAL PILE AREAS ON THE EASTERN PORTION OF THE SITE WERE COMPRESSED.

LEGEND

- NAPL (COAL TAR)
- GLOBULES (TAR)
- SHEEN
- SPENT LIME (PURIFIER WASTE)

70 0 70 140

SCALE IN FEET
1" = 70'

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
	J.E.B.	D.S.	D.S.

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EXTENT OF NAPL CONSOLIDATED EDISON EAST 115TH STREET FORMER MGP NEW YORK, NY

SCALE:	DATE:	PROJECT NUMBER:
1" = 70'	10/03	01869-055-700

FIGURE NUMBER: **3.9**

SHEET NUMBER: 1

FILENAME: 1869207B.DWG

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Appendix A - Field Records

Boring Logs - Interior Soil Borings

Boring Logs - Exterior Soil Borings and Monitoring Wells

Test Pit Excavation Logs

Monitoring Well Construction Records

Monitoring Well Development Records

Groundwater Collection Records

Appendix B - Analytical Results

Appendix C - Air Monitoring Report

Appendix D - Background PAH Concentrations

Appendix E - Data Usability Summary Report

Appendix F Indoor Air and Ambient Air Sampling Results