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Cedar Street Works Former Manufactured Gas Plant Site
NYSDEC Site #360173

Alternatives Analysis Report

Prepared for
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Certification Statement

I, Margaret A. Carrillo-Sheridan, P.E. certify that I am currently a NYS-registered professional engineer and that this Alternatives Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Date 09/17/2019

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ABBREVIATIONS

AAR	Alternatives Analysis Report
amsl	above mean sea level
BTEX	benzene, toluene, ethylbenzene, and xylene
CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm/s	centimeters per second
COC	constituent of concern
Con Edison	Consolidated Edison Company of New York, Inc.
cy	cubic yard
DER	Division of Environmental Remediation
DNAPL	dense nonaqueous phase liquid
EVS	Earth Volumetric Studio
ft/ft	feet per foot
ft-bgs	feet below ground surface
GRA	general response action
HASP	health and safety plan
IC	institutional control
ISS	in situ stabilization
LDR	Land Disposal Restriction
LTTD	low-temperature thermal desorption
MGP	manufactured gas plant
NAPL	non-aqueous phase liquid
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NYCRR	New York Code of Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PDI	pre-design investigation
POTW	publicly owned treatment works
PPE	personal protective equipment
Property	New Rochelle Toyota Dealership Property at 47 Cedar Street
RAO	remedial action objective

RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
ROW	right-of-way
SCG	standards, criteria, and guidelines
SCO	Soil Cleanup Objective
Site	Cedar Street Works former manufactured gas plant
SMP	Site Management Plan
SVOC	semi-volatile organic compound
TAGM	Technical and Administrative Guidance Memorandum
USDOT	U.S. Department of Transportation USEPA
USEPA	U.S. Environmental Protection Agency
UTS	Universal Treatment Standard
VOC	volatile organic compound

1 Introduction

1.1 General

This *Alternatives Analysis Report* (AAR) presents an evaluation of remedial alternatives to address environmental impacts identified at the Cedar Street Works former manufactured gas plant (MGP) site (the Site) located in New Rochelle, New York (**Figure 1-1**). This AAR has been prepared in accordance with the July 25, 2018, Order on Consent and Administrative Settlement Index No. CO-0-20180516-519 between Consolidated Edison Company of New York, Inc. (Con Edison) and the New York State Department of Environmental Conservation (NYSDEC).

1.2 Regulatory Frame Work

This AAR has been prepared to evaluate remedial alternatives to address environmental impacts at the Site in a manner consistent with the Voluntary Cleanup Agreement and with the following documents:

- NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation (NYSDEC 2010a)
- Applicable provisions of the New York State (NYS) Environmental Conservation Law and associated regulations, including Title 6 of the New York Code of Rules and Regulations (NYCRR) Part 375-6 (6 NYCRR Part 375-6)
- U.S. Environmental Protection Agency (USEPA) guidance document titled, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA 1988a)
- Applicable provisions of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) regulations contained in Title 40 of the Code of Federal Regulations (CFR) Part 300

1.3 Purpose

The purpose of this AAR is to identify and evaluate remedial alternatives that meet the following criteria:

- Appropriate for Site-specific conditions
- Protective of public health and the environment
- Consistent with relevant sections of NYSDEC guidance, the NCP, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The overall objective of this AAR is to recommend a reliable, cost-effective remedy that achieves the remedial action objectives (RAOs) established for the Site.

1.4 Report Organization

This AAR is organized as presented in **Table 1-1**.

Table 1-1
Report Organization

Section	Purpose
Section 1–Introduction	Provides background information relevant to the development of remedial alternatives evaluated in this AAR
Section 2–Identification of Standards, Criteria, and Guidelines	Identifies standards, criteria, and guidelines that govern the development and selection of remedial alternatives
Section 3–Development of Remedial Action Objectives	Presents a summary of the Site risk assessment and develops Site-specific RAOs that are protective of public health and the environment
Section 4–Technology Screening and Development of Remedial Alternatives	Presents the results of a screening process to identify potentially applicable remedial technologies and develops remedial alternatives that have the potential to meet the RAOs
Section 5–Detailed Evaluation of Remedial Alternatives	Presents a detailed description and analysis of each potential remedial alternative using evaluation criteria developed based on the referenced guidance documents
Section 6–Comparative Analysis of Alternatives	Presents a comparative analysis of each remedial alternative using the evaluation criteria
Section 7–Preferred Remedial Alternative	Identifies the preferred remedial alternative for addressing the environmental concerns at the Site

1.5 Background Information

This section summarizes Site background information relevant to the development and evaluation of remedial alternatives, including Site location and physical setting, Site history and operations, and previous investigations conducted at the Site. Unless otherwise noted, information presented herein is derived from the *Remedial Investigation of the Cedar Street Works Former MGP Site Report* (RIR; URS 2017).

1.5.1 Site Location, Zoning, and Physical Setting

For the purposes of this AAR, the Site is defined as the area where former MGP-related operations and equipment were located. The Site is located in a mixed-use area of New Rochelle, New York. The location of the former MGP is situated within Cedar Street and the parcel designated as Section 1, Block 247, Lot 15 (hereafter referred to as the "Property") on the Tax Map of the City of New Rochelle, County of Westchester (**Figure 1-1**). As shown in **Figure 1-2**, most of the coal gas manufacturing facilities were located within the current Cedar Street right of way.

The Site is zoned as DO-4 (New Rochelle 2015), River Street Commercial District, and has the following allowable uses:

- Mixed Use (residential or hotel units prohibited on first floor)
- Retail
- Offices

- Entertainment

The Property has a street address of 47 Cedar Street[1] and is located west of Cedar Street, with Radisson Plaza to the south, River Street to the east, and Spring Street to the north. The Property is owned by the Donnybrook Realty Corporation and includes a three-story showroom/office space with an attached one-story automotive service area. The footprint of the building is approximately 24,000 square feet. The automotive service area is situated in the northeast portion of the Property. **Figure 1-2** illustrates the buildings that presently occupy the Property and the approximate locations of the MGP structures formerly located on it and adjacent areas.

Most of the Property is paved and is used for vehicle inventory and maintenance activities. There are grass-covered areas along the sidewalk perimeter surrounding the Toyota Dealership, which are maintained as lawn and landscaped areas. The surface of the paved areas is generally sloped toward the southeast. A retaining wall is located along the perimeter of the Property (along the Spring Street and River Street). Based on the results of the utility survey (presented in Appendix G of the RIR), subsurface utilities located on the Property include buried electric, potable, sanitary and stormwater lines. There are currently no overhead utilities on the Property.

The portion of the former MGP Site situated beneath Cedar Street is located immediately west of the Property (**Figure 1-2**) and includes the Cedar Street right-of-way (ROW) adjacent to the Property. The Cedar Street ROW is maintained by the New York State Department of Transportation due to its proximity to the Interstate-95 corridor. As shown in Appendix G of the RIR, within the Cedar Street ROW, there are several active subsurface utilities servicing the downtown area of New Rochelle. Utilities located within the Cedar Street ROW are all located below grade and include high-pressure natural gas, subsurface electric, telecommunications lines, potable water supplies, and stormwater and sanitary sewers.

There are no surface water features running through or adjacent to the Site. The nearest surface waterbody to the Site is Echo Bay of Long Island Sound, which, at its nearest point, is approximately 1,700 feet southeast of the Site. Surface water at the Site runs off the Site to the southeast via sheet flow.

1.5.2 Site History and Operations

Table 1-2 presents an overview of Site history, operations, and ownership, based on information presented in the RIR, unless noted otherwise.

[1] According to the May 2018 New Rochelle Tax Database (New Rochelle 2018), the Property address is listed as 2 Radisson Plaza.

Table 1-2
Site History and Operations

Years	Property Owner	Property Use
1863–1888	New Rochelle Gas Light Company	MGP–Coal Carbonization
1888–1895	New Rochelle Gas Light Co.	MGP–Carbureted Water Gas (beginning in 1890)
1896–1899	New Rochelle Gas and Fuel Company (operated by the American Gas Company of Philadelphia)[1]	MGP–Carbureted Water Gas
1899–1900	NY Suburban Gas Co.	MGP–Carbureted Water Gas
1900–1911	Westchester Lighting Co.	MGP–Carbureted Water Gas
1911–1951	Westchester Lighting Co.	Gas Storage
1951–1953	Con Edison	Gas Storage
1953–1992	R.E.C. Realty Corporation	Transportation (PS Trucking Company); Automotive Sales; and Repair
1992–2019	Donnybrook Realty Corp.	Automotive Sales and Repair

Note:

1. Based on review of Sanborn Fire Insurance Maps provided in the RIR, and February 11, 1895 edition of The American Gas Light Journal, in 1895, the gas works was noted as owned and operated by the American Gas Works of Philadelphia.

Information regarding the decommissioning and or removal of former MGP subsurface structures is not available, nor was information regarding the installation of the current Cedar Street ROW over the former MGP structures.

1.5.3 MGP Operations

The actual start of gas production at the Site is unknown, but likely started after the incorporation of the New Rochelle Gas Light Company in 1863. By 1867, the gas works appeared on a New Rochelle Atlas map (Beers 1868).

Based on information presented in the RIR, gas was initially produced using the coal carbonization process. Per the 1890 edition of *Brown's Directory of American Gas Companies*, the gas production method was modified from coal carbonization to carbureted water gas (prior to 1890). The plant initially consisted of two gas holders, a retort house, a repair shop, a coal storage area, a purifier house, a meter house, an office, a coal and coke shed, and several small buildings or rooms that were not identified (**Figure 1-2**). The original gas holder located adjacent to Centre Street was a 10,000-cubic-foot capacity gas holder. This gas holder was likely a below-ground holder based on the cross-sections provided with the RIR (which indicate a historical cylindrical excavation extending from the ground surface to the top of bedrock). Information on the second gas holder referenced in Brown's Directory of American Gas Companies is not available.

By 1889, several new buildings were constructed in the northwest corner of the Site to house the scrubbers and exhausters (RIR). A 30,000-cubic-foot gas holder was constructed northeast of the original gas holder, and a coal shed replaced the former meter room. Based on information presented in the RI, the 30,000-cubic-foot gas holder may also have been a below-ground holder.

Based on the 1896 Sanborn Fire Insurance Map (included in Appendix B to the RIR), a larger 230,000-cubic-foot gas holder was located to the southeast of the gas plant buildings in the same location as the original 10,000-cubic-foot gas holder. This gas holder was likely constructed aboveground due to its size, although the foundation may have been below grade. The production building was also expanded to the south. According to the 1890 and 1900 *Brown's Directory of American Gas Companies* (Brown 1890, 1900), gas production was 6 million cubic feet in 1889 and rose to 37 million cubic feet by 1899.

Between 1900 and 1911, the configuration of the Site remained essentially the same. Per the RIR, gas production at the Site ceased in approximately 1911, at which point the Site was converted to a gas storage and distribution facility.

By 1931, the Site had expanded farther east to include a parcel adjacent to River Street. The 30,000-cubic-foot gas holder (northwest corner of the Site) and 230,000-cubic-foot gas holder (southern area of the Site) were removed. The expansion included buildings used for warehousing and a machine shop and a large parking garage.

Based on review of the Sanborn maps including in the RIR, by 1951, the majority of the MGP-related structures had been removed, with only the former repair shop and a portion of the purifier building remaining.

In 1953, Con Edison sold the Site to R.E.C Realty Corporation (URS 2017).

1.6 Summary of Previous Investigations

The Site has been subject to several environmental investigations, including the following:

- A Phase I Survey and Phase I Environmental Site Assessment conducted by Grosser Consulting (referenced in the RIR, as being performed prior to 1992)
- 1992 Groundwater Investigation conducted by AKRF for Tristar Properties of New Rochelle, New York (AKRF 1993)
- 2003 Historical Investigation Report–Former Cedar Street Works MGP Site prepared by The RETEC Group, Inc. for Con Edison (RETEC 2003)
- 2008/2009 Site Characterization conducted by Parsons for Con Edison (Parsons 2009)
- 2013/2014 Remedial Investigation conducted by URS for Con Edison (URS 2017)

Activities and results of the above-listed previous Site investigations were presented in the RIR. A summary of the activities conducted as part of the remedial investigation (RI), including the previous Site investigation activities, is provided in the following subsections. The results of the RI and the prior investigations were collectively used to develop the current Site characterization and nature and extent of MGP impacts as presented in Section 1.8.

1.6.1 Remedial Investigation

Activities and results for the RI conducted by URS are presented in the RIR. Investigation activities were conducted on and around the Site (i.e., the former MGP property and the downgradient area) to evaluate the extent of constituents associated with past operations at the Site and potential impacts from adjacent properties. The following investigation activities were conducted:

- Completing 17 soil borings and collecting soil samples for chemical analysis
- Excavating three test pits to identify former MGP structures
- Installing 10 groundwater monitoring wells (5 screened within the overburden and 5 screened within bedrock)
- Collecting groundwater samples for chemical analysis from 17 groundwater monitoring wells (11 existing and new overburden wells and 6 existing and new bedrock wells)
- Gauging of groundwater-level and non-aqueous phase liquid (NAPL) thickness monitoring of the 17 groundwater monitoring wells
- Collecting soil vapor samples from 11 soil borings drilled outside the Toyota Dealership building footprint
- Collecting 10 sub-slab soil vapor samples from beneath the Toyota Dealership building
- Collecting 13 indoor air samples from within the Toyota Dealership building
- Collecting 2 outdoor (ambient) air samples

RI sampling locations are presented in **Figure 1-3**.

1.7 Physical Site Features

This section presents an overview of the physical Site characteristics. This section includes a summary of Site geology and hydrogeology, followed by Section 1.8, which presents a description of the nature and extent of MGP impacts to Site media.

1.7.1 Geology

The following sections describe the Site's geology based on information presented in the RIR.

1.7.1.1 Regional Geology

The Site is situated within the Manhattan Prong physiographic province of NYS (Isachsen et al. 2000). The province is characterized as rolling lowlands comprising primarily metamorphic rocks of early

Paleozoic age. The shape of the land surface closely resembles the underlying bedrock surface, and much of the bedrock is covered by Atlantic Coastal Plain Deposits. Rocks of the Manhattan Prong were metamorphosed during the Taconic orogeny (i.e., +/- 450 million years ago). Many folds are found throughout the rock sequence, and the folds are generally oriented north-south and typically long and narrow.

The overburden in the region predominantly comprises miscellaneous fill, glacial till, and recent alluvium, including clay, silt, sands, gravel, cobbles, and boulders overlying bedrock.

Underlying bedrock in the region consists of the Hartland Formation, which is described as a basal amphibolite overlain by Pelitic schists that are Cambrian to Ordovician in age (Fisher et al. 1970). The Hartland Formation represents a complex sequence of rocks that were intensely folded and overthrusted, pushed up into mountains, eroded and weathered, and subsequently buried by sediments and more recently exposed and scoured by glaciation (Volkert et al. 1996).

1.7.1.2 Site Geology

The overburden materials beneath the Site are heterogeneous resulting from anthropogenic and geologic processes. Overburden strata, in descending order from the ground surface, consist of historic fill material[2] and glacial deposits, which are underlain by weathered and competent bedrock. The character and depositional history of these strata are briefly described below, and a Site cross-section is presented as **Figure 1-4**.

Historic fill materials are present at the ground surface or immediately beneath a thin layer of topsoil, concrete, or asphalt. The historic fill unit is generally 5- to 10-feet thick but increases within former gas holder foundations, where it reaches a maximum depth of 25 feet. The historic fill consists of sand, gravel, rock and brick fragments, and other anthropogenic materials.

Glacial deposits comprising stratified layers of sands and silt of varying textures are present beneath the fill unit throughout the investigation area, except for within the former gas holders, where fill is mostly underlain by weathered bedrock. This unit of glacial deposits is generally 5- to 15-feet thick, with a maximum thickness of approximately 20 feet just southeast of the former north gas holder location (near soil boring SB-18). A laterally isolated sand and gravel unit was identified near the former south gas holder overlying a thin layer of silt and clay immediately above bedrock. These

[2] Historic fill material is defined in NYSDEC DEC-10 as non-indigenous or non-native material, historically deposited or disposed in the general area of, or on, a site to create useable land by filling water bodies, wetlands, or topographic depressions, which is in no way connected with the subsequent operations at the location of the emplacement, and which was contaminated prior to emplacement. Historic fill may be solid waste, including, but not limited to, coal ash, wood ash, municipal solid waste incinerator ash, construction and demolition debris, dredged sediments, railroad ballast, and refuse and land-clearing debris, which was used prior to October 10, 1962.

units were less than 8-feet thick, laterally discontinuous, and only observed near the former south gas holder.

Weathered schist bedrock was either directly identified from sample recovery beneath the overburden or was interpreted based on sampling refusal at depths interpreted between 7 feet and 25 feet below ground surface (ft-bgs). The weathered bedrock was described in the RIR as decomposed schist containing micas, hornblende, quartz, and feldspars. The weathered bedrock zone was described as interbedded with silt and sand and was interpreted to range in thickness from less than 1 foot thick beneath the former south gas holder and approximately 7 feet thick across the investigation area. Bedrock (schist and gneiss) was identified beneath the weathered bedrock zone. Mineralogical composition of the bedrock was similar to the weathered bedrock zone. The bedrock was characterized as interlayered and generally banded schist and gneiss and had occasional granitic gneiss sequences across the investigation area. Fractures were commonly observed within the bedrock unit from near horizontal orientation to very high angle orientations. During the RI, the individual fracture orientations could not be determined from rock cores; however, the RI authors concluded, based on the regional geology, the fracture network is likely complex and typical of the thrust and overthrust fault zone(s) characteristic of the Hartland Formation in the region.

An estimated top of bedrock elevation contour map is provided in **Figure 1-5**. The bedrock surface elevation was estimated based on drilling refusal obtained at most boring locations and boring logs where the URS supervising geologist noted the presence of metamorphic rock fragments lodged within the Macro Core® sampler at some refusal depths. As shown in **Figure 1-5**, a bedrock ridge appears to transect the Site and trends generally north–south in the east-central portion of the Toyota Dealership property. From that area, bedrock surface slopes from a high of 43.12 feet above mean sea level (amsl) at SB-30 to approximately 33 feet amsl near MW-11A/MW-11B, and toward the east and southeast toward River Street. Relative bedrock lows were identified near the former north and south gas holders, with elevations of 26 feet amsl at SB-18 near the former north gas holder and approximately 28 feet amsl at SB-27 within the former south gas holder footprint. In the former MGP operational area, the estimated bedrock surface generally undulates between approximately 38 feet to 28 feet amsl. Based on the subsurface boring log results, a portion of the bedrock may have been excavated during the original construction of the former north and south gas holders (URS 2014).

Cross-sections developed by others from subsurface information gathered as part of the RI and Site Characterization Study are provided in **Appendix A**. Qualitative observations noted by the URS field geologist during the RI and by Parsons personnel during the Site Characterization Study were recorded on the boring logs and are on RIR Figure 4-1 and RIR Table 4-1, both included in **Appendix A**. As described in the RIR, these observations were reported as undifferentiated chemical odors and visual field observations of sheens/oil-like/tar-like material. MGP-related impacts

(specifically NAPL and sheens) were noted as being primarily observed within and immediately adjacent to select former MGP structures, specifically the north and south gas holders. As indicated by the cross-sections included in **Appendix A**, the original gas holders (e.g., the 10,000-cubic-foot and 30,000-cubic-foot gas holders) were installed as below-grade holders, with the gas holder bottoms coinciding with a bedrock surface. The cross-sections imply that during gas holder construction, some of the weathered bedrock may be been excavated to achieve required gas holder depths.

1.7.2 Hydrogeology

Based on information provided in the RIR, the primary hydrogeologic unit identified beneath the Site is the upper glacial aquifer that is hydraulically connected to the underlying bedrock aquifer. Groundwater within the bedrock does not appear to be representative of a confined condition to the depths investigated. The groundwater within the overburden is present in unconfined conditions and is not used for potable purposes in the New Rochelle Metropolitan area. The NYSDEC classification of groundwater at the Site is GA, which is compared to standards for protection of groundwater drinking water sources (NYSDEC 1998).

The water table surface was found to be between approximately 4.5 and 14.5 ft-bgs, depending on the well location and seasonal fluctuations. Two complete rounds of groundwater levels were obtained during the RI, and measurements were generally consistent between rounds. Groundwater potentiometric surface maps based on the water levels measured on April 22 to 23, 2014 is presented in **Figure 1-6**. In general, groundwater flow appears to be in an easterly to northeasterly direction; however, groundwater flow across the Site is also influenced by the bedrock ridge running north/south in the northeast portion of the Site. As shown in **Figure 1-6**, groundwater appears to be "ponding" in the northeast portion of the Site, with flow directions to the north in the northwestern portion of the Site, and toward the east in southeastern portion of the Site. The saturated thickness of the overburden across most of the Site is around 10 feet; however, in the northeast corner, where the bedrock surface rises, the saturated thickness decreases to 0 foot. At SB-30, located just west of the northeast cover of the Site, the bedrock surface rises above the water table. This reduction in the saturated thickness is likely causing groundwater to mound in this area and more easily flow around the bedrock ridge.

The retaining wall located along the perimeter of the Toyota Dealership property (along the Spring Street and River Street) may also be locally influencing groundwater flow; however, the retaining wall's depth and extent of influence is unknown.[3] In the northeast corner of the Site, the retaining wall rises approximately 5 feet above the ground surface; the retaining wall foundation may

[3] Based on general construction practices, it is possible that the wall penetrates the ground to depths twice its height above ground surface.

penetrate the subsurface to depths up to approximately 10 ft-bgs in this area. If installed to a depth of 10 ft-bgs, the retaining wall foundation could penetrate more than 50% of the saturated thickness of the overburden. Additionally, during a Site visit on November 13, 2017, several drainage pipes were observed at the base of the wall, which may exist to relieve hydraulic pressures on the upgradient side of the wall.

Horizontal hydraulic gradients in the overburden groundwater calculated from the potentiometric surfaces ranged from relatively flat between MW-10 and MW-01 (0.013 feet/foot; ft/ft) and steepest between MW-11A and MW-12A (0.061 ft/ft) on April 22 to 23, 2014. Groundwater flow directions in the investigation area and horizontal hydraulic gradients were similar on July 17, 2014.

Groundwater in the bedrock primarily flows through secondary porosity features in the rock, including faults, joints, solution cavities, and bedding planes. The Hartland Formation has little to no primary porosity, and groundwater flow likely controlled by the distribution of fractures within the rock. In the bedrock aquifer beneath the Site, there appears to be a groundwater divide generally trending north-south between the former north and south gas holders as depicted in **Figure 1-5**. Bedrock groundwater flows toward the west, west of the divide, and toward the east/east-southeast east of the divide. Horizontal hydraulic gradients are relatively shallow west of the divide and steeper east of the divide.

Vertical hydraulic gradients were calculated for the overburden/bedrock monitoring well pairs located in the investigation area and are presented in **Appendix A** (RIR Table 3-1). The vertical hydraulic gradients during April and July 2014 were determined to be upward at MW-02A/02B, MW-03A/03B, MW-07A/07B, and MW-12A/12B and downward at MW-08A/08B and MW-11A/11B.

Using the low-flow well development data presented in the RIR for four overburden wells screened within the glacial deposits (MW-10, MW-11A, MW-12A, and MW-1), the estimated overburden hydraulic conductivities ranged between $2.5x10^{-3}$ cm/s and $6.4x10^{-2}$ cm/s. Bedrock hydraulic conductivities were also calculated using the low-flow well development data presented in the RI for four bedrock wells (MW-02B, MW-03B, MW-11B, and MW-12B). The estimated bedrock hydraulic conductivities range between $5.4x10^{-4}$ and $2.0x10^{-3}$ cm/s, suggesting a narrower range in hydraulic conductivity for the underlying Site bedrock. A copy of hydraulic conductivity calculations supporting these estimates are included in **Appendix B**.

1.8 Nature and Extent of MGP Impacts

The results of the RI indicated that subsurface soil and groundwater contain concentrations of benzene, toluene, ethylbenzene and xylenes (BTEX), a subset of volatile organic compounds (VOCs); a more general class of organic compounds called polycyclic aromatic hydrocarbons (PAHs) and cyanide. PAHs are a subgroup of semi-volatile organic compounds (SVOCs) that consists of

approximately 17 commonly recognized multi-ringed, aromatic compounds. These compounds are typically associated with coal tar NAPL from former MGP operations (USEPA 1988b).

In general, the primary MGP-related byproduct responsible for most of the impacts at a former MGP Site is coal tar, which generally appears as a dense nonaqueous phase liquid (DNAPL). DNAPLs are heavier than water and tend to sink below the water table if released in sufficient quantities. Depending on the type of gas manufacturing processes employed, coal tar DNAPL may be only slightly denser (and slightly more viscous) than water, to coal tars that were solid when exposed to ambient air and highly viscous (USEPA 1988b). Because the former MGP operations at this Site included both coal carbonization as well as carbureted water gas methods, the coal tar physical characteristics may vary across the Site.

Coal tar is comprised of many organic compounds, which includes BTEX and PAHs that are regulated by the NYSDEC. These two groups of compounds, in addition to NAPLs, are useful in characterizing the nature and extent of contamination on-Site related to former MGP operations (hereafter referred to as MGP-related impacts or MGP impacts). Visual characterization of Site soil, and laboratory analysis of environmental samples for BTEX and PAHs are appropriate methods used to identify the nature and extent of environmental media affected by coal tar. Therefore, soils containing visual indications of coal tar as well as groundwater and subsurface soils (deeper than 5 ft-bgs) containing BTEX and PAHs above NYSDEC standards, criteria, and guidelines (SCGs) have been identified in this AAR as the constituents of concern (COCs) for the Site.

The following subsections present a summary of the nature and extent of MGP-related environmental concerns identified for the Site based on these COCs and the presence of NAPL.

1.8.1 NAPL Distribution and Characterization

NAPLs observed in the ground beneath the Site, is primarily coal tar DNAPL. In addition, petroleum-related NAPLs (predominately a light NAPL or LNAPL) may be present at the Site and in conjunction with the automotive repair shop operations. For the purposes of this AAR, coal tar DNAPLs are responsible for most of the environmental concerns resulting from the former MGP. As indicated by **Figure 1-4**, DNAPL has generally been observed in disconnected locations within overburden materials at depths between 17 and 35 ft-bgs. Coal tar DNAPL was primarily observed adjacent to or downgradient of the former north and south gas holders.

The results of the RIR described the presence of "NAPL-saturated" soil in a sample collected from a soil boring SB-12/MW-07B, located immediately above the bedrock interface between 17 and 19 ft-bgs. This soil boring was located adjacent to the former north gas holder to the west. The soil boring log for boring SB-16 noted the presence of "NAPL tar" at a depth of 19-ft bgs, which was at the location of refusal (presumably the top of weathered bedrock).

NAPL observations (in the form of blebs) were also reported as observed in drilling return water during the bedrock coring activities at monitoring well MW-11B, located downgradient of the south gas holder. The NAPL blebs were observed in drilling return water generated between the depths of 30 and 35 ft-bgs (which was approximately 20 feet below the top of the weathered bedrock and within the bedrock unit).

Downgradient of the former north gas holder, coal tar NAPL was observed as free product within a single bedrock fracture in a rock core collected from the boring for monitoring well MW-03B. The depth of the bedrock fracture was 33.2 ft-bgs.

The RIR also noted that NAPL was observed at locations within, adjacent to, or downgradient of the former west and south gas holders, although to lesser extents than observed within or near the former north gas holder. Along Cedar Street, near the former west gas holder and former meter house, a "NAPL sheen" was observed in a thin sand seem between 13.8 and 14 ft-bgs in soil borings SB-21. Within the former south gas holder, "NAPL sheens" were observed in soil borings SB-27 and SB-28 between 17 and 25 ft-bgs.

Based on the results presented in the RIR, the distribution of NAPL appears to be limited in extent and quantity across the Site. Based on the depth of NAPL observations below the top of groundwater, as reported in the RIR, the NAPL associated with the former MGP operations is presumed to be predominately a DNAPL and referred to as such in this AAR hereafter.

As mentioned above, the majority of DNAPL beneath the Site has been observed within or near the former north gas holder. Additionally, DNAPL was not observed during the RI groundwater level gauging events.

1.8.1.1 Conceptual Site Model for DNAPL

Based on the limited observations of DNAPLs in overburden soil borings installed during the RI and prior investigations, historical coal tar releases from the former MGP are not readily identifiable. However, based on the Site's geology and an understanding of the typical nature of coal tar DNAPL, if DNAPL was released from the below-grade holders into the overburden, the DNAPL would have spread laterally in the direction of groundwater flow and continued to move downward until it encountered lower permeability lenses within the glacial deposits or the top of bedrock. Upon reaching the lower permeability lenses or bedrock surface, the DNAPL would have spread laterally and followed the lower permeability lenses or bedrock surface topography, pooling in low areas (i.e., trough, bowls) in the top of the unit and into bedrock fractures. Similarly, if DNAPL were released from the bottom of the below-grade holders and into the weathered bedrock (see RIR Figures 3-3 and 3-5), the DNAPL would have migrated downward via bedrock fractures and fissures. The observation of DNAPL in the fracture of the core collected from MW-03B is consistent with this conceptual model.

1.8.1.2 Three-Dimensional NAPL Model

Using the soil boring data, a 3D environmental visualization system (Earth Volumetric Studio [EVS]) model was developed by Anchor QEA to evaluate the distribution of the geologic and NAPL data gathered during the Site Characterization Study and RI phases. Use of a 3D model can provide an effective method to identify likely source areas (if present) in all three dimensions at one time. Images from the 3D model are included in **Appendix C.** As shown on the attached images, areas where NAPL was observed in overburden appears coincident within the mapped depressions in the top of bedrock surface, which is consistent with the conceptual site model for DNAPL transport presented in the prior section.

1.8.2 Soil Quality

The extent of soil exhibiting the presence of COCs related to historical MGP operations at the Site has a strong correlation to the observed DNAPL distribution as discussed below. The soil data tables presented in the RIR (RIR Tables 4-3 to 4-6C) are included for reference in **Appendix A**. Consistent with the current site use and zoning, the soil data described in this section were compared to Restricted Use Commercial soil cleanup objectives (SCOs) as presented in Table 375-6.8(b) of SCOs Part 376-6 of Chapter of the NYCRR (6 NYCRR 375-6).

1.8.2.1 Surface Soils

As discussed in the RIR, there are limited surface soils—soils between 0 and 0.5 ft-bgs—present at the site. Per the RIR, the surface soils are imported soil used for current landscaping and are not related to historical MPG operations. As previously described, most of the Site surfaces consist of paved roadways, parking areas, sidewalks, and buildings.

1.8.2.2 Shallow Subsurface Soils (Up to 5 ft-bgs)

Although most soil samples were collected at depths greater than 5 ft-bgs, soil samples collected at shallow depths (i.e., less than 5 ft-bgs) did not contain BTEX at concentrations greater than 6 NYCRR Part 375-6 restricted use commercial SCOs. Certain PAHs (mainly benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene) were detected in shallow subsurface soil samples at concentrations slightly (e.g., within the same order of magnitude) above restricted use commercial SCOs in most samples. The absence of BTEX or indications of NAPL releases in this area coupled with the documentation of historic fill materials encountered during the prior Site investigation activities indicates that the PAHs detected in the shallow subsurface soils are more likely attributed to anthropogenic fill materials rather than MGP operations.

1.8.2.3 Deep Subsurface Soils (Greater than 5 ft-bgs)

In subsurface soil samples collected from depths greater than 5 ft-bgs, concentrations of individual BTEX constituents exceeding the 6 NYCRR Part 375-6 restricted use commercial SCOs were only

detected in three samples collected during the Site Characterization Study—one from SB-03 (13 ft-bgs) and two samples from SB-15 (13 to 15 ft-bgs; 15 to 17 ft-bgs). SB-03 and SB-15 are located within the footprint of the former north gas holder. BTEX constituents did not exceed their respective restricted use commercial SCOs in any subsurface samples collected during the RI.

PAHs have been detected above the restricted use commercial SCOs across the Site at multiple depths, the highest concentrations of PAHs (greater than 1,000 milligrams per kilogram) were found in the following areas:

- Fill within the former north and west gas holders (SB-15 13-15 and 15-17 ft-bgs; SB-03 13 ft-bgs; and SB-23 13.5-14 ft-bgs);
- Fill outside the former north gas holder in SB-18 (3-3.5 ft-bgs)
- In the glacial deposits (sand and silt layer) below the former purifier locations (SB-25 7.2-8.2 ft-bgs and SB-21 9-10 ft-bgs), and the purifier house and former gas holder locations (MW-02 7-9 ft-bgs; SB-07 11-13 ft-bgs; and SB-18 8.5-10 and 15.8-16.8 ft-bgs).

Metals were detected in all samples across the Site; however, concentrations exceeding the Restricted Use Commercial SCOs were limited to 11 of 139 total soil samples, all but one of which were collected from the historic fill unit. As described in the RIR, metals are common constituents in historic fill materials, and detected concentrations likely reflect the nature of historic fill found across the Site. The one exceedance for a sample collected from the glacial deposits was for nickel at a depth of 21.6 to 22.7 ft-bgs at SB-19 located within Cedar Street near the northwest corner of the Site.

Total cyanide only exceeded restricted use commercial SCOs in SB-17 (4 to 4.5 ft-bgs) which was collected from within a fill layer between the former west and north gas holders. As previously discussed, based on the concentrations of cyanide reported in the RI, cyanide is not considered a COC for this Site.

Figure 1-7 shows the distribution of subsurface soil exceedances above restricted use Commercial SCOs for individual BTEX compounds, PAH compounds, and cyanide across the Site.

1.8.2.4 Forensic Analytical Results

As part of the Site characterization activities, soil samples visually observed as coated with a NAPL were collected from the soil borings and sent to META Environmental Inc. for environmental forensic analyses, which included hydrocarbon fingerprinting and extended mono aromatic hydrocarbon and PAH analyses. As detailed in the RIR, most of the samples analyzed were classified as a mixture of pyrogenic and petrogenic materials. The tentative source identification was generally coal tar, likely from a carbureted water gas manufacturing process mixed with lower levels of weathered fuel products (e.g., gasoline). The mixture of coal tar and fuel products in soil samples indicates multiple

sources of contamination (i.e., MGP-related and petroleum-related) are commingled and contribute to the existing nature and extent of observed constituents, likely over a long period of time. The petroleum-related constituents are consistent with the more recent uses at the Site, including automobile service facilities with underground storage tanks.

1.8.3 Groundwater Quality

Groundwater samples collected during the Site Characterization Study and RI contained select VOCs and SVOCs at concentrations above Class GA criteria. Based on the most recent groundwater monitoring results (data collected in 2014), the groundwater exceedances above Class GA criteria appear to be limited to localized zones within the overburden at locations MW-07A (adjacent to the former north gas holder) and GWSB-23 (installed within the former west gas holder); and in the bedrock at location MW-03B. No other 2014 groundwater samples exceeded the Class GA criteria for VOCs or SVOCs.

During the Site Characterization Study phase, VOCs and SVOCs were previously detected in MW-02, and metals were detected in MW-01. The VOCs and SVOCs detected during the Site Characterization Study phase were not detected at concentrations above the laboratory detection limit during the RI.

Metals were detected in most of the groundwater samples analyzed, including the upgradient and side-gradient groundwater monitoring wells, at concentrations close to the Class GA criteria. As described in the approved RIR and summarized above, the detection of metals in groundwater are not considered attributable to former MGP operations and are not COCs for the Site.

1.8.4 Soil Vapor and Indoor Air Quality

To assess the potential for vapor intrusion by MGP-related compounds, ambient (outdoor) air and soil vapor samples were collected during the RI. The soil vapor samples were collected from outside of the on-Site building, and indoor air and sub-slab soil vapor samples were collected from inside the on-Site building.

Analytical results for indoor air and sub-slab soil vapor samples collected during the RI indicated that a mixture of compounds unrelated to historical MGP operations were detected[4]; specifically, chlorofluorocarbons (CFCs; 1,1,2-trichloro-1,2,2-trifluoroethane; dichlorodifluoromethane-methane; and trichlorofluoromethane), compounds used in manufacturing processes (1,4-dichlorobenzene, styrene, and vinyl acetate), chlorinated VOCs and other solvents. In addition, select hydrocarbons (such as naphthalene and trimethylbenzene isomers) were detected within select indoor samples. These detected hydrocarbons may be associated with MGP, gasoline, or middle distillate fuels (such

[4] NYSDOH's *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* lists indicator compounds for various site uses, including gasoline, middle distillate fuels, MGP, natural gas, and solvent-using industries.

as fuel oil)[5]. The maximum indoor air concentrations detected for the petroleum, fuel oil or MGP indicator compounds were primarily detected in the autobody shop and were co-mingled with compounds attributed to industrial solvent usage rather than MGP operations. In addition, the maximum detected hydrocarbons in indoor air were located in the vicinity of the active automotive maintenance shop. Based on review of the RIR data, the detections of hydrocarbons in indoor air are most likely associated with more recent automotive maintenance activities rather than historical MGP operations.

As discussed within the RIR, sub-slab soil vapor and indoor air analytical results were compared to guidance values presented in the New York State Department of Health's (NYSDOH's) Soil Vapor/Indoor Air Decision Matrices provided in the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH 2008). The detected concentrations of chlorinated VOCs, specifically tetrachloroethene (PCE) and trichloroethene (TCE), indicate indoor air quality is being affected by the presence of these compounds.

The RIR concluded the showroom/office space portion of the building and the automotive service area had indoor air sample results with PCE and TCE detected at concentrations sufficiently high enough to warrant identifying the source of PCE and TCE, reducing exposure, and monitoring, along with mitigation (as needed). As noted by NYSDEC in correspondence addressed to Impact Environmental (the Toyota Dealership property owner's environmental consultant) the presence of chlorinated solvents is most likely associated with more recent uses in the vicinity of the Site:

> The Department is involved in over two hundred MGP sites around New York State and has never encountered CVOCs at former MGP sites which can be attributed to MGP activities. The presence of CVOCs is consistently attributable to other contemporary or historical sources. (NYSDEC 2017)

Based on the RIR results, and as confirmed by NYSDEC in their letter to Impact Environmental, the chlorinated compounds detected in indoor air samples are not attributed to historical MGP.

[5] MGP Indicator compounds, as identified by NYSDOH are: trimethylbenzene isomers, tetramethylbenzene isomers, thiopenes, indene, indane, and naphthalene.

2 Identification of Standards, Criteria, and Guidelines

2.1 General

This AAR was prepared in general conformance with the applicable guidelines, criteria, and considerations set forth in the following NYSDEC guidance, criteria, and regulations:

- DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010
- 6 NYCRR Part 375–Environmental Remedial Programs, effective December 14, 2006

This section presents the SCGs that have been identified for the Site.

2.2 Definition of Standards, Criteria, and Guidelines

"Standards and criteria" are cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance.

"Guidelines" are non-promulgated criteria, advisories and/or guidance that are not legal requirements and do not have the same status as "standards and criteria." However, remedial programs should be designed with consideration given to guidance documents that, based on professional judgment, are determined to be applicable to the project (6 NYCRR 375-1.8[f][2][ii]).

SCGs will be applied so the selected remedy will conform to officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate, unless good cause (as defined in 6 NYCRR 375-1.8 [f][2][i]) exists as to why conformity should be dispensed with. Examples of good cause include the following:

- Conformity to a standard or criterion will result in greater risk to the public health and the environment.
- Conformity to a standard or criterion is technically impracticable from an engineering or scientific perspective.
- The program or project will attain a level of performance that is equivalent to that required by the standard or criterion through the use of another method or approach.

2.3 Types of Standards, Criteria, and Guidelines

NYSDEC has provided guidance on applying the SCG concept to the RI/AAR process. In accordance with NYSDEC guidance, SCGs are to be progressively identified and applied on a site-specific basis as

the RI/AAR proceeds. The SCGs considered for the potential remedial alternatives identified in this AAR were categorized into the following classifications:

- Chemical-Specific SCG–These SCGs are health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, result in the establishment of numerical values for each COC. These values establish the acceptable amount or concentration of chemical constituents that may be found in, or discharged to, the ambient environment.
- Action-Specific SCGs–These SCGs are technology- or activity-based requirements or limitations on actions taken with respect to hazardous waste management and remediation of the Site.
- Location-Specific SCGs–These SCGs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they occur in specific locations.

2.4 Standards, Criteria, and Guidelines

The SCGs identified for the evaluation of remedial alternatives are presented below.

2.4.1 Chemical-Specific Standards, Criteria, and Guidelines

The potential chemical-specific SCGs for the Site are summarized in attached Table 2-1.

The SCOs presented in 6 NYCRR Part 375-6 are chemical-specific SCGs that are relevant and appropriate to the Site. Specifically, the SCOs for the protection of human health based on a commercial future use are applicable based on the current Site use and zoning. Commissioner Policy-51 (CP-51) provides a uniform and consistent process for the selection of soil cleanup levels appropriate for remedial programs under the NYSDEC's jurisdiction and is intended to be used in conjunction with applicable regulations.

Chemical-specific SCGs that potentially apply to the waste materials generated during remedial activities are the Resource Conservation and Recovery Act (RCRA) and NYS regulations regarding identifying and listing hazardous wastes outlined in 40 CFR Part 261 and 6 NYCRR Part 371, respectively. Included in these regulations are the regulated levels for the Toxicity Characteristic Leaching Procedure constituents. The Toxicity Characteristic Leaching Procedure constituent levels are a set of numerical criteria at which solid waste is considered a hazardous waste by the characteristic of toxicity. In addition, the hazardous characteristics of ignitability, reactivity, and corrosivity may also apply, depending on the results of waste characterization activities.

Another set of chemical-specific SCGs that may apply to waste materials generated at the Site (e.g., soil that is excavated and determined to be a hazardous waste) are the USEPA Universal Treatment Standards (UTSs) and Land Disposal Restrictions (LDRs), as listed in 40 CFR Part 268. These standards and restrictions identify hazardous wastes for which land disposal is restricted and define

acceptable treatment technologies or concentration limits for those hazardous wastes on the basis of their waste code characteristics. The UTSs/LDRs also provide a set of numerical criteria at which a hazardous waste is restricted from land disposal, based on the concentration of select constituents present. In addition, the UTSs/LDRs define hazardous waste soil and hazardous waste debris and specify alternative treatment standards and treatment methods required to treat or destroy hazardous constituents on or in hazardous waste debris.

Groundwater beneath the Site is classified as Class GA and, as such, the NYS Groundwater Quality Standards (6 NYCRR Parts 700-705) and ambient water quality standards presented in the NYSDEC's *Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 2004) are potentially applicable chemical-specific standards even though groundwater at the Site is not currently, and will not likely in the future, be used as a potable water supply. These standards identify acceptable levels of constituents in groundwater based on potable use.

The *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH 2006; updated May 2017) provides guidance on identifying and addressing current and potential human exposures to vapors associated with known or suspected volatile chemical contamination. Although vapor intrusion may also occur with "naturally occurring" subsurface gases (e.g., radon, methane, and hydrogen sulfide), the guidance discusses soil vapor intrusion in terms of environmental contamination only. The guidance is applicable anywhere a soil vapor intrusion investigation is warranted in NYS. As previously discussed, the soil vapor intrusion investigations conducted at the Site indicated indoor air quality within the buildings located on Site appeared to be primarily affected by subsurface vapor intrusion or from sources not related to historical MGP operations.

2.4.2 Action-Specific Standards, Criteria, and Guidelines

Potential action-specific SCGs for this Site are summarized in **Table 2-2**. Action-specific SCGs include general health and safety requirements, and general requirements regarding handling and disposal of waste materials (including transportation and disposal, permitting, manifesting, disposal, and treatment facilities), discharge of water generated during implementation of remedial alternatives, and air monitoring requirements for Site activities (including permitting requirements for on-Site treatment systems and monitoring requirements during remedial activities).

The NYSDEC Division of Air Resources policy document *DAR-1 Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212* (NYSDEC 2016) incorporates applicable federal and NYS regulations and requirements pertaining to air emissions, which may be applicable for soil or groundwater remedial design elements that result in certain air emissions.

New York Air Quality Standards provides requirements for air emissions (6 NYCRR Part 257) that are a result of remedial design elements. Emissions from remedial design elements will meet the air quality standards based on the air quality class set forth in the NYS Air Quality Classification System (6 NYCRR Part 256) and the permit requirements in New York Permits and Certificates (6 NYCRR Part 201).

Air emissions that are the result of remedial activities will be governed by a Site-specific health and safety plan (HASP) to monitor for volatile organic compounds (VOC), dusts and odors generated for the protection of on-Site workers. Additionally, during remedial activities community air monitoring will be required in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) included in Appendix 1A of DER-10.

One set of potential action-specific SCGs for the Site consists of the LDRs, which regulate land disposal of hazardous wastes. LDRs are applicable to alternatives involving the disposal of hazardous waste (if any). Because MGP wastes resulted from historical operations that ended before the passage of RCRA, material containing MGP-related impacts is only considered a hazardous waste in New York if it is removed (generated) and it exhibits a characteristic of a hazardous waste. However, if the removed material only exhibits the hazardous characteristic of toxicity for benzene (waste code D018), it is conditionally exempt from the hazardous waste management requirements (6 NYCRR Parts 370 through 374 and 376) when destined for thermal treatment. Specific to management of waste containing coal tar, NYSDEC has issued an MGP program policy guidance document (Technical and Administrative Guidance Memorandum [TAGM] 4061 (NYSDEC 1990, 1997)), which states that coal tar waste and soils and sediment that have been contaminated with coal tar waste from former MGPs only exhibiting the toxicity characteristic for benzene (D018) may be conditionally excluded from the requirements of 6 NYCRR Parts 370-374 and 376 when they are destined for permanent thermal treatment.

The NYSDEC will no longer allow amendment of soil at MGP sites with lime kiln dust and quick lime containing greater than 50% calcium/magnesium oxide due to vapor issues associated with free oxides. Guidance issued in the form of a letter from the NYSDEC to the NYS utility companies[6] indicated that lime kiln dust/quick lime will not be permitted for use during future remedial activities.

The U.S. Department of Transportation (USDOT) and NYS rules for the transport of hazardous materials are provided in 49 CFR Parts 107 and 171.1 through 172.558 and 6 NYCRR 372.3. These rules include procedures for packaging, labeling, manifesting, and transporting hazardous materials and are potentially applicable to the transport of hazardous materials under any remedial alternative. NYS requirements for waste transporter permits are included in 6 NYCRR Part 364, along with

[6] Letter from Robert W. Schick, NYSDEC Director – Remedial Bureau C, Division of Environmental Remediation to Con Edison, Orange and Rockland Utilities, Central Hudson Gas and Electric, NYS Electric and Gas, and National Grid regarding: Use of Quicklime and Other Materials, dated May 20, 2008.

standards for collection, transport, and delivery of regulated wastes within New York. Contractors transporting waste materials off Site during the selected remedial alternative must be properly permitted.

Remedial alternatives conducted within the Site must comply with applicable requirements outlined under the Occupational Safety and Health Administration (OSHA). General industry standards are outlined under OSHA (29 CFR 1910) that specify time-weighted average concentrations for worker exposure to various compounds and training requirements for workers involved with hazardous waste operations. The types of safety equipment and procedures to be followed during Site remediation are specified under 29 CFR 1926, and record-keeping and reporting-related regulations are outlined under 29 CFR 1904.

In addition to OSHA requirements, the RCRA (40 CFR Part 264) preparedness and prevention procedures, contingency plan, and emergency procedures are potentially relevant and appropriate to those remedial alternatives that include generation, treatment, or storage of hazardous wastes.

2.4.3 Location-Specific Standards, Criteria, and Guidelines

Potential location-specific SCGs for the Site are summarized in the attached **Table 2-3**. Examples of potential location-specific SCGs include regulations and federal acts concerning activities conducted in floodplains, wetlands, and historical areas and activities affecting navigable waters and endangered/threatened or rare species. Based on the Westchester County Geographic Information System, the Site is not located within the limits of a 100-year floodplain.

Location-specific SCGs also include local requirements, such as local building permit conditions for permanent or semi-permanent facilities constructed during the remedial activities (if any), New Rochelle street work permits, road and/or side walk closure permits, and influent/pre-treatment requirements for discharging water to the publicly owned treatment works (POTW).

3 Development of Remedial Action Objectives

3.1 General

This section presents the RAOs for soil and groundwater at the Site. These RAOs represent medium-specific goals that are protective of public health and the environment (NYSDEC 2010a). These RAOs were developed by considering the results of the Site investigation activities (specifically the Risk Assessment conducted as part of the RI) and with reference to potential SCGs as well as current and foreseeable future anticipated uses of the Site. RAOs are developed to specify the COCs within a site and to assist in developing goals for cleanup of COCs in each medium that may require remediation.

3.2 Risk Assessment Summary

A Qualitative Human Health Exposure Assessment and Fish and Wildlife Resources Impact Analysis was conducted as part of the RI to evaluate potential exposure pathways. An exposure pathway is complete only if all the following are present:

- A source of COCs
- Transport of COCs from the source through any environmental medium (i.e., soil, groundwater, indoor air or soil vapor)
- A receptor (e.g., construction worker/utility worker, Site worker, or the public) who may potentially be exposed to the COCs
- A point of contact for COCs to be taken in by the receptor (e.g., through dermal contact, ingestion, and/or inhalation)

Potential sources of COCs include NAPL, soil, groundwater, and soil vapor which contain COCs. Exposure pathways are based on current use of the Site and the anticipated future use of the Site (which is assumed to be consistent with the current commercial use). The following are potential receptors:

- Current (or future) Site workers who are (or will be) present at the Site on a routine basis
- Construction workers who could be exposed on a short-term basis such as during construction activities
- General populations located near the Site

Table 3-1 (below) presents the results of the Qualitative Human Health Exposure Assessment.

Table 3-1
Human Health Exposure Assessment Results for MGP-Related Compounds

Media	Construction/Utility Worker			Site Occupant/Visitor		
	Dermal	Ingestion	Inhalation	Dermal	Ingestion	Inhalation
Subsurface Soil	P	P	P	I	I	I
Groundwater	P	P	P	I	I	I
Surface Water	I	I	I	I	I	I
Soil Vapor	P	P	P	I	I	I
Indoor Air1	I	I	I	I	I	I

Notes: Results summarized from RIR
1. Considers MGP-related compounds only
I: Incomplete Exposure Pathway
NA: not applicable
P: Potentially Complete Exposure Pathway

3.3 Remedial Action Objectives

RAOs are medium-specific goals that, if met, would be protective of public health and the environment relative to the environmental concerns identified at the Site. Potential Site-wide remedial alternatives will be evaluated relative to their ability to meet the RAOs and be protective of public health and the environment. The RAOs for the Site, in consideration of COCs and MGP-related waste materials (i.e., DNAPL), exposure pathways, and receptors, are presented in **Table 3-2.**

Table 3-2
Remedial Action Objectives

Remedial Action Objectives for Soil
Public Health Protection 1. Prevent, to the extent practicable, ingestion or direct contact with MGP-related NAPL, PAHs, or BTEX at concentrations greater than the Site-specific background concentrations. 2. Prevent, to the extent practicable, inhalation exposure to COCs volatilizing from subsurface soil containing MGP-residual volatile compounds (such as BTEX). *Environmental Protection* 1. Prevent migration of COCs that would result in soils or groundwater exceeding SCGs
RAOs for Groundwater
Public Health Protection 1. Prevent ingestion of groundwater containing MGP-related COCs at concentrations exceeding NYSDEC SCGs, to the extent practicable. 2. Prevent contact with, or inhalation of, volatiles from groundwater containing MGP-related COCs at concentrations exceeding NYSDEC SCGs, to the extent practicable. *Environmental Protection* 1. Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable. 2. Remove the source of COCs to groundwater, to the extent practicable.

4 Technology Screening and Development of Remedial Alternatives

4.1 General

The objective of the technology screening is to identify general response actions (GRAs), associated remedial technology types, and technology process options, and then narrow the universe of process options to those with documented success at achieving similar RAOs at former MGP sites to identify options that are implementable and potentially effective at addressing soils and groundwater which exceed RAOs at the Site. Based on this screening, remedial technology types and technology process options were eliminated or retained and subsequently combined into potential Site-wide remedial alternatives for further, more detailed evaluation. This approach is consistent with the screening and selection process provided in DER-10.

This section identifies potential remedial alternatives to address soils and groundwater at the Site that have MGP-related DNAPL and or COCs at concentrations above SCGs. As an initial step, GRAs potentially capable of addressing soils and groundwater were identified. GRAs are medium-specific and may include various non-technology-specific actions such as treatment, containment, institutional controls (ICs), and excavation, or any combination of such actions. Based on the GRAs, potential remedial technology types and process options were identified and screened to determine the technologies and associated process options that were the most appropriate for the Site. Technologies and process options that were retained through the screening were used to develop potential remedial alternatives. Detailed evaluations of these assembled remedial alternatives are presented in Section 5.

According to DER-10, the term "technology type" refers to a general category of technologies appropriate to site-specific conditions and COCs such as chemical treatment, immobilization, biodegradation, and capping. The term "technology process option" refers to a specific process within a technology type. For each GRA identified, several technology types and associated technology process options were identified. In accordance with DER-10, each remedial technology type and its associated technology process options are briefly described and screened, on a medium-specific basis, to identify those that are technically implementable and potentially effective given site-specific conditions. This approach was used to determine if the application of a particular remedial technology type and technology process option would be applicable given site-specific conditions for remediation of soil and groundwater.

4.2 Identification of Remedial Technologies

Remedial technology types that are potentially applicable for addressing soil and groundwater were identified through a variety of sources, including vendor information, engineering experience, and review of available literature that included the following documents:

- *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA 1988a)
- *DER-31/Green Remediation* (NYSDEC 2011)
- *DER-33/Institutional Controls: A Guide to Drafting and Recording Institutional Controls* (NYSDEC 2010b)
- *Technology Screening Guide for Treatment of CERCLA Soils and Sludges* (USEPA 1988c)
- *Remediation Technologies Screening Matrix and Reference Guide* (USEPA 2002)
- Management of MGP Sites (GRI 1996)

According to USEPA guidance (USEPA 1988a) and DER-10, remedial technology types and process options can be identified by drawing on a variety of sources, including regulatory references and standard engineering texts not specifically directed toward environmental remediation sites. Although each former MGP site offers its own unique site characteristics, the evaluation of remedial technology types and process options that are applicable to MGP-related COCs, or have been implemented at other MGP sites, is well documented. This collective knowledge and experience, and regulatory acceptance of previous feasibility studies performed on MGP-related sites with similar impacts, were used to reduce the universe of potentially applicable process options for the Site to those with documented success in achieving similar RAOs.

Chapter 4 of DER-10 also notes that technology types and process options should be identified based on site-specific conditions (including contamination). The Site's current configuration and use as an active business in the City of New Rochelle will be considered when identifying appropriate technology types and process options.

4.3 General Response Actions

Based on the RAOs identified in Section 3, the following GRAs have been established for soil and groundwater:

- No Action
- ICs
- Engineering Controls
- In Situ Containment/Control
- In Situ Treatment
- Removal

- On-Site Ex-Situ Treatment
- Off-Site Treatment and/or Disposal

4.4 Remedial Technology Screening Criteria

Potentially applicable remedial technology types and technology process options were identified for each of the GRAs and were subjected to preliminary and secondary screening to retain the technology types and process options that could be implemented and would potentially be effective at achieving the RAOs established for the Site. As presented above, for the purposes of the screening evaluations, remedial technology type refers to a general category of technologies, such as capping or immobilization, while the technology process option (e.g., asphalt cap, clay/soil cap, jet-grouting, shallow soil mixing) is a specific process within each remedial technology type.

Screening was conducted to identify potential technologies and technology processes to address soil and groundwater. RAOs have been developed for soil and groundwater and subsequently include remedial objectives for DNAPL within these media. Criteria used to complete the preliminary and secondary screening are presented in the following subsections.

For this AAR, the various alternatives for off-Site treatment or disposal of impacted media (e.g., subsurface soil) that may be removed from the Site (if a removal remedy is selected) were not evaluated. This was purposely done to avoid committing Con Edison to a specific process option at this time, and to allow for an evaluation of costs of potential off-Site disposal/treatment facilities at the time that the preferred alternative is implemented. Disposal/treatment facility costs may fluctuate significantly based on season, market conditions and facility capacity, along with the actual methods of off-Site disposal. For alternative evaluation purposes, this AAR does, however, include an estimated unit cost for off-Site low temperature thermal desorption (LTTD) of materials, where appropriate.

4.4.1 Preliminary Screening

Preliminary screening was performed to reduce the number of potentially applicable technology types based on technical implementability and effectiveness (long- and short-term). Technical implementability was determined using existing Site conditions (including physical above-grade obstructions posed by an active business) as well as Site characterization data to screen out remedial technology types and technology process options that could not reasonably or practicably be implemented. The effectiveness of a technology is measured by its ability to meet the established RAOs.

Table 4-1 presents the results of the preliminary screening and the following subsections summarize the results of the preliminary screening.

4.4.1.1 Subsurface Soils

As presented in **Table 4-1**, the following remedial technology types were identified to address the GRAs identified for subsurface soil:

- *No Action* – No active remedial activities would be implemented to address the subsurface soil containing MGP impacts.
- *Institutional Controls* – Remedial technology types associated with this GRA consist of non-intrusive administrative controls focused on minimizing potential contact with MGP impacts. Typical IC mechanisms include placement of a deed restriction or environmental easement on the affected Site. However, deed restrictions/environmental easements are not applicable to off-Site properties, including roadways or publicly-owned land. For properties that are off-Site, including roadways, types of ICs that can be implemented include zoning restrictions, environmental notice, or public health advisories.
- *Engineering Controls* – The existing surface cover would be maintained to provide continued protection against potential exposure to subsurface soil containing COCs.
- *In-Situ Containment/Controls* – Remedial technology types associated with this GRA involve addressing the mobility and/or exposure to impacted subsurface soil without removing or otherwise treating them. Remedial technology types evaluated under the preliminary screening process consisted of capping and containment.
- *In-Situ Treatment* – Remedial technology types associated with this GRA involve addressing the subsurface soil without removing the materials but treating them to remove or otherwise alter the MGP impacts to achieve the established RAOs. Remedial technology types evaluated for the Site included immobilization, biological treatment and chemical treatment.
- *Removal* – Remedial technology types associated with this GRA involve removal of subsurface soil containing COCs above SCGs to achieve the established RAOs. Soil excavation was the technology type evaluated for this GRA.
- *Ex-Situ On-Site Treatment* – Remedial technology types associated with this GRA consider the treatment of materials after they have been removed from the ground. Ex-situ on-Site remedial treatment technology types evaluated under the preliminary screening evaluation consist of stabilization (to address free liquids in excavated soils), immobilization, and extraction (thermal desorption).
- *Off-Site Treatment and/or Disposal* – Potential remedial technology types associated with this GRA consider the off-Site treatment of subsurface soil containing COCs after it has been removed from the ground. As stated above, the ultimate off-Site treatment or disposal technology type was not evaluated. However, a list of potentially acceptable treatment or disposal technologies is included in **Table 4-1** for future consideration. These remedial treatment technologies consist of extraction (thermal desorption) and disposal.

4.4.1.2 Groundwater

As presented in **Table 4-2**, the following remedial technology types were identified to address the GRAs identified for groundwater:

- *No Action* – No active remedial activities would be implemented to address the COC-impacted groundwater.
- *Institutional Controls* – Remedial technology types associated with this GRA generally consist of non-intrusive administrative controls and information notices focused on minimizing potential contact or use of the groundwater. ICs evaluated under the preliminary screening consisted of groundwater use restrictions in the form of governmental and/or proprietary controls, enforcement, permit controls and/or environmental notices.
- *In-Situ Treatment* – Remedial technology types associated with this GRA involve addressing the COC-impacted groundwater without extracting the groundwater. These remedial technology types would remove or otherwise alter the MGP residuals in groundwater to achieve the RAOs for the Site. Remedial technology types evaluated included biological treatment and chemical treatment.
- *In-Situ Containment/Controls* – Remedial technology types associated with this GRA involve addressing the COC-impacted groundwater without removing or otherwise treating the groundwater. Remedial technology types evaluated under the preliminary screening process consisted of hydraulic control and groundwater and/or DNAPL extraction.
- *Removal* - For this technology type, four technology process options were evaluated for groundwater and/or DNAPL extraction, including active pumping using vertical wells, horizontal wells and/or collection trenches and passive DNAPL removal using vertical wells and collection trenches. Inefficiencies associated with pump and treat technologies exist, including large volumes of water that require recovery and treatment, potential lack of long-term access to areas that require wells (i.e., implementability issues) and the space required for pumping equipment. The active removal technology options will not be retained for further evaluation as a stand-alone process option; however, pumping and treatment of water may be considered, if it enhances the effectiveness or implementability of other technologies (i.e., dewatering during excavation).
- *Ex-Situ On-Site Treatment* – Remedial technology types associated with this GRA consider the treatment of COC-impacted groundwater after the groundwater has been removed. Ex-situ on-Site remedial treatment technologies evaluated to address the extracted groundwater under the preliminary screening evaluation consisted of chemical treatment and physical treatment.
- *Off-Site Treatment and/or Disposal* – Remedial technology types associated with this GRA consider the off-Site disposal of Site groundwater that has been removed. Disposal technology process options evaluated to address COC-impacted groundwater consisted of discharge to a publicly owned treatment works.

4.4.2 Secondary Screening

The technology process options retained through preliminary screening were subjected to a secondary screening to further evaluate potential means to address soils, groundwater and DNAPL at the Site and choose, when possible, one representative remedial technology process option for each retained remedial technology type to simplify the subsequent development and evaluation of the remedial alternatives. Technology process options were evaluated in relative terms to other technology process options of the same remedial technology type using the following criteria:

- Effectiveness–This criterion is used to evaluate each technology process option relative to other process options within the same remedial technology type. This evaluation focused on the following process options:
  - Ability to meet and continue to meet the RAOs in the future
  - Impacts to public health and the environment during the construction and implementation phase
  - Reliability with respect to the nature and extent of impacts and Site conditions
- Implementability–This criterion encompasses the technical and administrative feasibility of implementing a process option. Because technical implementability was considered during the preliminary screening, this subsequent, more detailed evaluation places more emphasis on the institutional aspects of implementability (e.g., the ability to obtain necessary permits for off-Site actions and the availability of treatment, storage, and disposal services). This criterion also evaluates the ability to construct and reliably operate the technology process option as well as the availability of specific equipment and technical specialists to design, install, and operate and maintain the remedy.
- Relative Cost–This criterion evaluates the overall relative cost required to implement the remedial technology. As a screening tool, relative capital and operation and maintenance (O&M) costs are used rather than detailed cost estimates. For each technology process option, relative costs are presented as low, moderate, or high. Costs are estimated based on engineering judgment and industry experience.

The results of the secondary screening of technology types and process options are also presented in **Table 4-1** and **Table 4-2**. The technology processes that were not retained have been shaded in these tables.

Based on the results of the secondary screening, the remedial technology types and process options that were retained for further evaluation are discussed below. The basis of selection for each representative subsurface soil and groundwater remedial technology type and process option is briefly presented.

For each medium, all ex-situ on-Site treatment technologies were eliminated from further consideration. These technologies were eliminated due to considerations of the current and future anticipated uses of Site, as well as space limitations. Specifically, potential issues associated with ex-situ on-Site treatment included:

- time required to achieve the RAOs
- public acceptance of an on-Site treatment system
- adequate area within the Site for treatment system construction, operation and soil/groundwater handling

4.4.2.1 Subsurface Soil

The following remedial technology process options were evaluated under the secondary screening for subsurface soil.

4.4.2.1.1 No Action

Consistent with the NCP and USEPA guidance for conducting feasibility studies, the No Action alternative must be developed and examined as a baseline to which other remedial alternatives will be compared. Although this technology does not include any active remedial activity, it will be retained for further consideration. It is not anticipated that this technology, however, would receive regulatory approval. Through time, natural attenuation processes would reduce the toxicity, mobility and volume of impacts to the environment.

4.4.2.1.2 Institutional Controls

Per DER-33 (NYSDEC 2010b), ICs are any non-physical means of enforcing a restriction on the use of real property that limits human or environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of site management activities at or pertaining to a remedial site. ICs accomplish their goal by limiting land or resource use and/or by providing information that helps modify or guide human behavior at the Site.

- Technology process options screened under this remedial technology type include
  - The Property: Deed restrictions, environmental land use restrictions, enforcement and permit controls
  - Cedar Street (publicly owned land): Zoning restrictions, deed notices, and public health advisories (including but not limited to notification via Dig-Safely, New York, Inc.)

ICs would be utilized to inform or limit permissible future Site uses as well as establish health and safety requirements to be followed during subsurface activities that could result in a construction worker exposure to subsurface soils with COCs exceeding Restricted Use Commercial SCOs.

ICs alone will not achieve soil RAOs as stand-alone processes because these measures would not treat, contain, or remove subsurface soil. However, this process option was retained because ICs can be readily implemented in conjunction with other remedial technologies to reduce the potential for exposure to subsurface soils with COCs exceeding Restricted Use Commercial SCOs. By combining with other remedial technologies, ICs can limit potential exposure to impacted Site media that was not addressed through treatment technologies.

4.4.2.1.3 Engineering Controls

Surface controls were retained for further consideration. The existing cover materials would be maintained to provide continued protection against potential exposure to subsurface soil containing COCs.

4.4.2.1.4 In-Situ Containment/Controls

Capping and containment were identified as potentially suitable remedial technology types for in-situ containment/controls. The capping options reviewed as part of the secondary screening included clay/soil, asphalt and multimedia caps. Containment options included sheet piles and slurry walls. All capping options are easily implemented, and their relative costs are comparable (moderate to high). Due to the continued use of the Site (following completion of remedial activities) as a parking area and/or storage area for equipment, the clay/soil cap and multimedia cap technology processes were not retained because these types are not suitable for use in high-traffic areas. The asphalt cap was not retained because the existing cover materials have been shown to be protective of human health and will be retained in each Site-wide alternative as a surface control.

Containment process options (such as slurry walls or sheet pile walls) were not retained for secondary screening due to nature of subsurface materials at the Site (specifically, the absence of a competent confining layer in the areas with downward hydraulic gradients) as well as the presence of upward hydraulic gradients in certain areas at the Site. Installation of any low-permeability containment wall would likely cause changes in local groundwater flow patterns, including raising the groundwater table elevation in Site areas with upward hydraulic gradients.

4.4.2.1.5 In-Situ Treatment

The in-situ remedial treatment technologies identified for subsurface soil were immobilization, chemical treatment and biological treatment. Solidification/stabilization is considered effective for immobilizing MGP coal tars within soils. This technology is potentially implementable with moderate to high capital and O&M costs. The presence of an active business and urban roadway, along with underground utilities, structures and obstructions would affect the implementability of solidification/stabilization; therefore, removal of any subsurface structures and temporary closure of the current business and the Cedar Street ROW would be required. Solidification/stabilization was retained for further evaluation.

The chemical treatment option considered was chemical oxidation. Based on the non-homogeneous nature of the subsurface geology and potential exposure issues during treatment, this technology would likely be very inefficient to implement and operate. A pilot test would be required. Chemical oxidation would not be appropriate for the Site based on the presence of DNAPL within the fractured bedrock. Successful chemical oxidation treatment requires contact with the source. As the DNAPL at this Site is located within the fractured bedrock, oxidant contact would be very difficult to achieve. Based on these concerns, chemical oxidation was not retained for further evaluation.

Biological treatment options include biodegradation, enhanced biodegradation and biosparging. These options would be less effective than other options, especially for the heavier, more condensed PAHs found in coal tar DNAPL, and would not achieve the remediation objectives for soil in a reasonable timeframe. Therefore, the biological treatment options were not retained for further consideration.

4.4.2.1.6 Removal

Soil excavation was the technology process option evaluated for secondary screening. Soil excavation is a proven technology to address impacted material and could achieve several RAOs. When combined with proper handling of the material, this technology process would be effective at minimizing potential risks to current and future on-Site workers and residents. Excavation could be implemented. However, due to the active operations on the Property and the presence of an active high-use roadway (Cedar Street), Site-wide soil excavation would be challenging to implement without substantially interrupting current Site operations and area traffic. Additionally, extensive soil excavations below roadways and existing buildings located at the Site are considered impracticable based on the presence of extensive subsurface utilities, including natural gas pipelines, electrical, fiber optic, potable water, sanitary and storm sewers). Targeted soil excavations (e.g., parking lot area where the former north gas holder existed) may be more implementable; however, targeted soil excavations that do not address the source materials would be of limited effectiveness and would be highly disruptive to the Site occupants and surrounding community. Soil excavation would not effectively address the presence of DNAPL in fractured bedrock at the Site.

4.4.2.1.7 Ex-Situ On-Site Treatment

Remedial technology types and process options retained for evaluation consisted of stabilization (to address the presence of free liquids in excavated soils) and LTTD. These methods may be effective to support treatment prior to off-Site disposal but are not considered effective to support on-Site reuse of the treated soils as a fill material following treatment. Stabilization to address the presence of free liquids prior to transport for off-Site disposal was retained for detailed evaluation.

4.4.2.1.8 Off-Site Treatment and/or Disposal

Remedial technology types and process options retained for evaluation consisted of LTTD, and off-Site disposal. Both of these technologies were retained due to the relative implementability and effectiveness of the technologies. As stated above, these process options were included in the screening tables for potential consideration; however, the ultimate off-Site treatment or disposal of materials that may be removed from the Site was not evaluated to avoid committing to a specific option at this time. In addition, multiple off-Site treatment technologies could be utilized to treat or dispose of media with different concentrations of impacts.

4.4.2.2 Groundwater

The following remedial technology process options were evaluated under the secondary screening for groundwater.

4.4.2.2.1 No Action

Consistent with NCP and USEPA guidance for conducting feasibility studies, the No Action alternative must be developed and examined as a baseline to which other remedial alternatives will be compared. Although this technology does not include any active remedial activity, it will be retained for further consideration. This technology is not anticipated to receive regulatory approval. Through time, natural attenuation processes would reduce the toxicity, mobility and volume of impacts to the environment.

4.4.2.2.2 Institutional Controls

ICs for groundwater use restrictions (in the form of governmental, proprietary, enforcement or permit controls and/or environmental notices and notification requirements) were retained for further evaluation. Because ICs would not treat, contain or remove any constituents of interest in the Site groundwater, ICs alone will not achieve the RAOs established for the Site. However, ICs may partly achieve the RAO of reducing, to the extent practicable, potential future human exposure to groundwater containing COCs. ICs could enhance the effectiveness or implementability of other technologies/technology process options.

4.4.2.2.3 In-Situ Treatment

The in-situ remedial treatment technologies considered for groundwater consisted of biological treatment (such as monitored natural attenuation [MNA] and enhanced biodegradation using air or oxygen to increase in-situ microbial degradation) and chemical treatment (using chemical oxidation).

Other than MNA, the biological treatment process options were not retained due to the ease of implementation and low to moderate relative costs, although some options may require treatability studies to verify reliability and effectiveness, as well as the length of time necessary to achieve the RAOs.

Chemical oxidation was not retained for further evaluation consistent with the reasoning presented in the prior soils section.

4.4.2.2.4 In-Situ Containment/Controls

The in-situ containment/control remedial treatment technologies considered for groundwater consisted of hydraulic control (groundwater extraction using recovery wells) and physical containment using sheetpile and slurry walls. Neither containment/control process option was retained due to effectiveness, implementability, long-term operation and maintenance requirements, on-Site space and operator requirements associated with operating a long-term groundwater extraction and treatment system and high relative costs. Note, the hydraulic control option could be used temporarily to dewater excavation areas (that extend below the vadose zone) as part of a soil removal remedy.

4.4.2.2.5 Removal

For this technology type, three technology process options were evaluated for groundwater and/or DNAPL extraction, including active pumping using vertical or horizontal wells, collection trenches and passive DNAPL removal using vertical wells. Inefficiencies associated with pump and treat technologies exist, including large volumes of water that require recovery and treatment, potential lack of long-term access to areas that require wells (i.e., implementability issues) and the space required for pumping equipment and the associated groundwater treatment system. The active removal technology options will not be retained for further evaluation as a stand-alone process option.

Active and passive DNAPL removal are effective means to reduce the volume and mobility of a DNAPL source. They can be implemented in conjunction with other remedial technologies to achieve RAOs and reduce the potential for exposure to MGP-related impacts. These technologies involve the utilization of DNAPL recovery wells that actively (i.e., via automated pumps) or passively (via bottom-loading bailers or manually operated pumps) remove DNAPL from the subsurface. Due to the limited space available to operate an active DNAPL pumping system (including the need to provide an above-ground storage area for recovered DNAPL) and the lack of recoverable DNAPL observed within existing on-Site monitoring wells during the RI, active DNAPL recovery was not retained for additional evaluation. Passive DNAPL recovery is implementable on the Site, can be installed and operated with limited disruption to the current Site occupants, and has been retained for more detailed remedial evaluation.

4.4.2.2.6 Ex-Situ On-Site Groundwater Treatment

Ex-situ on-Site groundwater treatment process options evaluated included chemical treatment (ultraviolet oxidation and chemical oxidation) and physical treatment (filtering and settlement). While

none of the ex-situ treatment alternatives were retained as part of a long-term remedial alternative, the physical treatment process option was retained to support the soil removal alternative.

4.4.2.2.7 Disposal

Technology process options evaluated for groundwater disposal consisted of discharge to a POTW. These technology process options would be used as, or part of, a treatment regimen for extracted groundwater resulting from dewatering during excavation.

4.5 Summary of Retained Remedial Technologies

Results of the remedial technology screening process for soil and groundwater are presented in **Tables 4-1** and **4-2**. Remedial technologies retained for soil, groundwater, and NAPL are summarized in **Tables 4-3** and **4-4** below.

Table 4-3
Retained Soil Technologies

GRA	Technology Type	Technology Process Option
No Action	• No action	• No action
Institutional Controls	• Institutional controls	• Deed restrictions, environmental land use restrictions, enforcement and permit controls, environmental notices
Engineering Controls	• Surface Cover	• Maintain existing surface covers on-Site
In Situ Treatment	• Immobilization	• Solidification/stabilization
Removal	• Soil excavation	• Targeted soil excavation
On-Site Ex-Situ Treatment	• Immobilization	• Stabilization for free liquids
Off-Site Treatment and/or Disposal	• Extraction disposal	• Low-temperature thermal desorption solid waste landfill

Table 4-4
Retained Groundwater Technologies

GRA	Technology Type	Technology Process Option
No Action	No action	• No action
Institutional Controls	Institutional controls	• Deed restrictions, groundwater use restrictions, enforcement and permit controls, environmental notices
In Situ Treatment	Biological treatment	• Monitored Natural Attenuation
Removal	DNAPL Removal	• Passive Removal of DNAPL Using Vertical Wells
Ex-Situ On-Site Treatment	Physical Treatment	• Adsorption, Setting and Filtration to treat extracted groundwater prior to off-Site disposal
Disposal	Discharge to a POTW	• Treated groundwater is discharged to POTW

4.6 Assembly of Site-Wide Remedial Alternatives

This section uses the retained technology types and process options presented in Section 4.5 to develop Site-wide remedial alternatives capable of addressing the Site-specific RAOs. DER-10 (NYSDEC 2010a) and the USEPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (1988a) both require an evaluation of the following alternatives:

- The "No-Action" alternative
- An alternative that would restore the Site to pre-disposal conditions

Based on the preliminary and secondary screening of GRAs and associated technologies, the following alternatives have been assembled and retained for detailed analysis:

- Alternative 1 – No Action
- Alternative 2 – DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls
- Alternative 3 – In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls
- Alternative 3 – Soil Removal to Achieve Pre-Disposal Conditions

Summary descriptions of the remedial alternatives that have been assembled and developed for addressing the impacted media are presented below. Detailed technical descriptions of the remedial alternatives are presented in Section 5 as part of the detailed remedial alternative evaluations.

4.6.1 Alternative 1 – No Action

No remedial activities would be completed under this alternative.

4.6.2 Alternative 2 – NAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Under this alternative, potentially mobile DNAPL on the Site would be collected and recovered via the installation of DNAPL collection points. DNAPL collection points could include wells, trenches, or other subsurface structures that would collect and contain mobile DNAPL and facilitate DNAPL recovery for off-Site treatment/disposal. To develop this alternative, DNAPL collection is assumed to be conducted using DNAPL collection wells placed at low points in the top of bedrock surface. The exact number, location, and construction details of the DNAPL collection points would be determined during the design of this remedial alternative. DNAPL recovery activities would be conducted passively via periodically gauging and manually bailing collection wells that contain DNAPL.

In addition, this alternative would include maintaining the existing surface covers (asphalt parking area, buildings, sidewalks, roadways, and landscaped areas) to provide a physical barrier between impacted subsurface soils and Site occupants.

Alternative 2 would also include conducting annual groundwater monitoring to document the extent of dissolved phase MGP-related hydrocarbons and the potential trends in COC concentrations. New groundwater monitoring wells would be installed to replace damaged/destroyed wells and establish an appropriate downgradient groundwater monitoring network.

ICs would be established at the Site as part of this alternative to limit the use of Site groundwater as well as provide a Site Management Plan (SMP) to address future invasive (i.e., subsurface soil disturbance) activities at the Site.

4.6.3 Alternative 3 – In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Alternative 3 would include the same DNAPL recovery, surface cover maintenance, groundwater monitoring, and IC components as Alternative 2. Alternative 3 would also include in situ stabilization (ISS) activities to address DNAPL contained in materials within the former 30,000 cubic foot below-grade gas holder located in the northwest corner of the Site. The ISS activities would extend from the ground surface to the bottom of the former gas holder, located on the top of the weathered bedrock.

4.6.4 Alternative 4 – Removal of Soil to Achieve 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives, Groundwater Monitoring, and Institutional Controls

Alternative 4 would include excavation and off-Site disposal of all soils and associated MGP structures (or their remnants) on-Site that contain MGP-related COCs at concentrations above the NYS unrestricted residential SCOs. Following excavation activities, the Site would be backfilled, and new groundwater monitoring wells would be installed to monitor groundwater conditions and demonstrate the effectiveness of remedy in achieving soil and groundwater RAOs. ICs would be established to prohibit the use of groundwater at the Site.

5 Detailed Evaluation of Remedial Alternatives

5.1 General

This section presents detailed descriptions of the remedial alternatives developed to address Site impacts. Each of the retained remedial alternatives is evaluated with respect to the criteria presented in 6 NYCRR Part 375 and DER-10. The results of the detailed evaluation of remedial alternatives are used to aid in the recommendation of a preferred remedial alternative for addressing impacted Site media.

5.2 Description of Evaluation Criteria

The detailed evaluation of remedial alternatives presented in this section consists of an evaluation of each assembled alternative (presented in Section 4.6) against the following criteria:

- Short-Term Impacts and Effectiveness
- Long-Term Effectiveness and Permanence
- Land Use
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Implementability
- Compliance with SCGs
- Overall Protection of Public Health and the Environment
- Cost Effectiveness
- Community Acceptance

These evaluation criteria encompass statutory requirements and include other gauges such as overall feasibility. Descriptions of the evaluation criteria are presented in the following sections. Additional criteria, including community acceptance, will be addressed following submittal of this AAR.

Per DER-10, sustainability and green remediation will also be considered in the remedial evaluation with the goal of improving the sustainability of the selected remedy. The evaluation will consider the alternative's ability to minimize energy use; reduce greenhouse gas and other emissions; maximize reuse/recycling of materials; and preserve, enhance, or create natural habitats. Sustainability and green remediation will be discussed under the short-term impacts and effectiveness criterion.

5.2.1 Short-Term Impacts and Effectiveness

The short-term effectiveness is evaluated relative to its potential effect on public health and the environment during remedial alternative implementation. The evaluation of each alternative with respect to its short-term effectiveness will consider the following elements:

- Potential short-term adverse impacts and nuisances to which the public and environment may be exposed during implementation of the alternative

- Potential impacts to workers during implementation of the remedial actions and the effectiveness and reliability of protective measures
- The sustainability and use of green remediation practices used during implementation of the remedy
- Amount of time required until protection of public health and the environment is achieved

5.2.2 Long-Term Effectiveness and Permanence

The evaluation of each remedial alternative relative to its long-term effectiveness and permanence is made by considering the risks that may remain following completion of the remedial alternative. The following factors will be assessed in the evaluation of the alternative's long-term effectiveness and permanence:

- Potential impacts to public health and the environment from untreated waste or treatment residuals remaining at the completion of the remedial alternative
- The adequacy and reliability of controls (if any) that will be used to manage treatment residuals or remaining untreated impacted media

5.2.3 Land Use

This criterion evaluates the current, intended, and reasonably anticipated future use of the Site and its surroundings, as it relates to an alternative or remedy, when unrestricted levels would not be achieved. This evaluation considers local zoning laws, proximity to residential property, accessibility to infrastructure, and proximity to natural resources, including groundwater drinking supplies.

5.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment

This criterion evaluates the ability of an alternative or remedy to reduce the toxicity, mobility, and volume of Site contamination. Preference should be given to remedies that permanently or significantly reduce the toxicity, mobility, or volume of the COCs at the Site. The evaluation will consider the following factors:

- The treatment process and the amount of materials to be treated
- The anticipated ability of the treatment process to reduce the toxicity, mobility, or volume of Site impacts
- The nature and quantity of treatment residuals that will remain after treatment
- The degree to which the treatment is irreversible

5.2.5 Implementability

This criterion addresses the technical and administrative feasibility of implementing the remedial alternative, including the availability of the various services and materials required for implementation. The following factors will be considered during the implementability evaluation:

- Technical Feasibility–This factor refers to the relative ease of implementing or completing the remedial alternative based on Site-specific constraints. In addition, the remedial alternative's constructability and operational reliability are also considered as well as the ability to monitor the effectiveness of the remedial alternative.
- Administrative Feasibility–This factor refers to the availability of necessary personnel and material along with potential difficulties in obtaining approvals for long-term operation of treatment systems, access agreements for construction, and acquiring necessary approvals and permits for remedial construction.

5.2.6 Compliance with Standards, Criteria, and Guidelines

This criterion evaluates the remedial alternative's ability to comply with SCGs that were identified in Section 2. Compliance with the following items are considered during evaluation of the remedial alternative:

- Chemical-specific SCGs
- Action-specific SCGs
- Location-specific SCGs

Applicable chemical-, action-, and location-specific SCGs are presented in **Tables 2-1**, **2-2**, and **2-3**, respectively.

5.2.7 Overall Protection of Public Health and the Environment

This criterion evaluates whether the remedial alternative provides adequate protection of public health and the environment. This evaluation assesses how exposure pathways are eliminated, reduced, or controlled through removal, treatment, engineering controls, or ICs. This evaluation also considers the ability of the remedial alternative to meet the RAOs.

5.2.8 Cost Effectiveness

This criterion evaluates the overall cost of the alternative relative to the effectiveness of the alternative or remedy. The estimated total cost to implement the remedial alternative is based on a present worth analysis of the sum of the direct capital costs (e.g., materials, equipment, and labor), indirect capital costs (e.g., engineering, licenses/permits, and contingency allowances), and O&M costs. O&M costs may include operating labor, energy, chemicals, and sampling and analysis. These costs will be estimated with an anticipated accuracy between -30% to +50% in accordance with

NYSDEC guidance. A 20% contingency factor is included to cover unforeseen costs incurred during implementation of the remedial alternative. Present-worth costs are calculated for alternatives expected to last more than 2 years. A 4% discount rate (before taxes and after inflation) is used to determine the present-worth factor.

5.2.9 Community Acceptance

This criterion is evaluated, after the public review of the remedy selection process, as part of the final NYSDEC selection/approval of a remedy for a Site.

5.3 Detailed Evaluation of Site-Wide Remedial Alternatives

This section presents the detailed analysis of each of the Site-wide alternatives that were assembled in Section 4:

- Alternative 1 – No Action
- Alternative 2 – DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls
- Alternative 3 – In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls
- Alternative 4 – Removal of Soil to Achieve 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives, Groundwater Monitoring, and ICs

Each alternative is evaluated against the evaluation criteria described above (public acceptance will be evaluated following submittal of this AAR).

5.3.1 Alternative 1 – No Action

The "No Action" alternative was retained for evaluation at the Site as required by DER-10. The "No Action" alternative serves as the baseline for comparison of the overall effectiveness of the other remedial alternatives. The "No Action" alternative would not involve implementation of any remedial activities to address the COCs in the environmental media. The Site would be allowed to remain in its current condition and no effort would be made to change or monitor the current Site conditions.

5.3.1.1 Short-Term Impacts and Effectiveness

No remedial actions would be implemented for the impacted environmental media. Therefore, there would be no short-term environmental impacts or risks associated with remedial activities posed to the community.

5.3.1.2 Long-Term Effectiveness and Permanence

Under the "No Action" alternative, the COCs in Site media or the potential for on-going releases and/or migration of impacts would not be addressed. As a result, this alternative is not considered effective on a long-term basis.

5.3.1.3 Land Use

The current and foreseeable future use of the Site is a mixed commercial/residential urban setting. The current zoning for the area is DO-4, River Street Commercial District. The following are allowable uses:

- Mixed Use (residential or hotel units prohibited on first floor)
- Retail
- Offices
- Entertainment

Based on the current and foreseeable future land use of the Site, the potential for exposure to MGP-related residual materials or soil containing MGP-related COCs is minimal. The majority of the Site is covered with asphalt, concrete, buildings, or vegetated soil, and there is little to no need to conduct subsurface activities. Additionally, drinking water is currently and will continue to be provided via a public supply. Therefore, groundwater containing MGP-related COCs is not and will not be used for potable (or other) purposes.

No remedial actions would be completed under this alternative, and the Site would remain in its current condition. As routine Site activities do not include exposure to MGP-related impacts in soil and groundwater, the "No Action" alternative would not alter the anticipated future intended use of the Site.

5.3.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Under the "No Action" alternative, environmental media would not be treated (other than by natural processes), recycled, or destroyed. Therefore, the toxicity, mobility, and volume of the COCs in the impacted environmental media would not be reduced.

5.3.1.5 Implementability

The "No Action" alternative does not require implementation of any remedial activities, and therefore is technically and administratively implementable.

5.3.1.6 Compliance with Standards, Criteria, and Guidelines

5.3.1.6.1 Chemical-Specific Standards, Criteria, and Guidelines

Because removal or treatment is not included as part of this alternative, the chemical-specific SCGs would not be met by this alternative.

5.3.1.6.2 Action-Specific Standards, Criteria, and Guidelines

This alternative does not involve implementation of any remedial activities; therefore, the action-specific SCGs are not applicable.

5.3.1.6.3 Location-Specific Standards, Criteria, and Guidelines

Because no remedial activities would be conducted under this alternative, the location-specific SCGs are not applicable.

5.3.1.7 Overall Protection of Public Health and the Environment

The "No Action" alternative does not address the toxicity, mobility, or volume of impacted environmental media and is not effective on a long-term basis for eliminating potential migration or potential exposure to impacts. Therefore, the "No Action" alternative would be ineffective and would not meet the RAOs established for the Site.

5.3.1.8 Cost Effectiveness

The "No Action" alternative does not involve implementation of any active remedial activities or monitoring of conditions; therefore, there are no costs associated with this alternative.

5.3.2 Alternative 2 – DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls

Alternative 2 includes the following major components:

- Establishing ICs
- Maintaining existing surface cover
- Installing recovery wells and performing DNAPL recovery
- Conducting long-term groundwater monitoring
- Developing an SMP

This alternative would address the potential for exposure to subsurface soil and groundwater containing MGP-related COCs through the implementation of ICs and maintaining the existing surface cover. Under this alternative, ICs would be established for the Site in the form of deed restrictions and environmental easements to control intrusive (i.e., subsurface) activities that could result in potential exposures to subsurface soil and groundwater containing MGP-related impacts at concentrations greater than applicable SCGs. For the portion of the Site that occupies land area

owned by the municipality or State (e.g. the Cedar Street right of way), public health advisories will be the IC used.

The ICs would also establish requirements for additional investigation activities (e.g., subsurface soil sampling) and/or remedial actions (e.g., excavation) if the existing structures on the Property were to be demolished. Future Site use would be restricted to the allowable uses within a Commercial District (consistent with current zoning, no residential housing would be permitted at the ground level). In addition, the ICs would require the maintenance of the existing surface covers. Although potable water is provided by a municipal supply, the ICs would also prohibit the use of non-treated groundwater. An annual report would be submitted to NYSDEC to document that ICs are maintained and remain effective.

This alternative would include preparation of an SMP to document the following information:

- The ICs that have been established and will be maintained for the Site
- Requirements for notifications of the presence of MGP-related impacts in soil and groundwater that would be provided to those requesting utility clearance for intrusive activities at the Site
- Requirements for notifications if the existing surface cover system will be disturbed
- Known locations of soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 for commercial SCOs
- Protocols (including health and safety requirements) for conducting invasive (i.e., subsurface) activities and managing potentially impacted material encountered during these activities
- Protocols and requirements for conducting DNAPL monitoring, Site inspections, and groundwater monitoring
- Protocols for addressing significant changes in COC concentrations in groundwater based on the results of the annual monitoring activities
- Requirements for future investigation activities if the Site structures are demolished

Alternative 2 also includes DNAPL collection/recovery to facilitate the removal of mobile DNAPL from the subsurface. Inaccessible immobile DNAPL would remain in subsurface soil and would not be directly addressed by this remedial alternative. Based on the current Site use, DNAPL collection points would likely consist of large (6-inch-diameter) wells installed at accessible locations throughout the Site. The actual well locations would be determined during the remedial design phase and would be selected based on multiple factors, including, but not limited to:

- Soil and groundwater data collected during the RI, specifically data points that indicated the presence of potentially mobile DNAPL
- Presence of DNAPL in existing monitoring wells (as part of a pre-design investigation [PDI], the existing wells would be gauged)
- Location of historical gas holders

- Low points within the existing top of bedrock (based on RI data)
- Areas that can be safely accessed by necessary equipment both during initial recovery well installation as well as subsequent NAPL recovery.

Additional soil borings may be installed, or additional geophysical surveys performed to refine the mapped top of bedrock surface as part of a PDI. The PDI may also include field activities to further assess the presence of recoverable, mobile DNAPL. These activities would include:

- If no existing wells contain DNAPL, additional test borings and temporary piezometers may be installed to evaluate DNAPL recoverability. A piezometer (using typical, 2-inch schedule 40 PVC well materials and a sump) can be installed where DNAPL has been observed in the soils. The piezometer can then be monitored for DNAPL accumulation; DNAPL that accumulates would be manually bailed and the DNAPL recovery monitored as a test for recoverability. Final DNAPL recovery wells can be installed during remedial construction by over-drilling to remove the piezometer and then installing the DNAPL recovery well to screen the same subsurface interval.
- Optical imaging profiling using a green diode and GeoProbe system (commercially available from TarGost and GeoProbe) may be used to identify depth intervals with coal tar DNAPL. This information can then be used to optimize DNAPL recovery well locations.
- Recoverable DNAPL, if found, may be sampled and sent to a laboratory for analysis of physical properties to evaluate optimal recovery methods (e.g., viscosity to evaluate recovery pump options).
- If recoverable DNAPL is not located as part of this alternative's PDI or recovery well installation phase, when the Property is redeveloped and the above-grade surface obstructions are removed, additional DNAPL assessment and installation of additional recovery wells or excavation of source materials could be attempted as a contingency plan.

The DNAPL recovery wells would be constructed to contain and facilitate DNAPL recovery (e.g., via a sump). The final number, location, type, and construction of the DNAPL collection points would be determined during the remedial design of this alternative. For the purpose of developing a cost estimate for this alternative, it has been assumed up to eight DNAPL collection wells would be installed. The collection wells would be installed at locations and to depths (i.e., within the overburden) where significant observations of DNAPL were noted during the completion of soil borings during the RI. **Figure 5-1** presents potential locations for DNAPL recovery wells.

To develop this alternative for detailed evaluation, the DNAPL collection wells are assumed to consist of 6-inch-diameter stainless-steel wells, equipped with a 5-foot-long sump, installed to an average depth of 20 ft-bgs. Following installation of the collection wells, DNAPL recovery may be conducted passively by periodic manual bailing or by periodically pumping (with a portable pump) DNAPL from the collection wells.

The DNAPL recovery activities are assumed to consist of passive DNAPL collection with manual recovery conducted for 30 years. If no recoverable quantities of DNAPL are observed during multiple consecutive DNAPL monitoring events, Con Edison may request to conduct DNAPL monitoring/recovery less frequently or cease DNAPL monitoring altogether.

As indicated in Section 1, groundwater samples collected from select monitoring wells during the RI were reported to contain BTEX and PAHs at concentrations greater than NYSDEC Class GA groundwater standards and guidance values. Although there are no current users of groundwater or exposures to impacted groundwater, this alternative would also include conducting groundwater monitoring to document potential changes in Site groundwater conditions. Groundwater samples would be submitted for laboratory analysis for Site COCs. Analytical results would be used to document the extent of dissolved phase MGP-related hydrocarbons and potential trends in COC concentrations. The results of the groundwater monitoring would be presented to NYSDEC in summary report. Based on the results of the monitoring activities, Con Edison may request to modify the quantity of wells sampled or the frequency of sampling events. However, in developing a cost estimate for this alternative, annual groundwater monitoring activities were assumed to be conducted for 30 years.

5.3.2.1 Short-Term Impacts and Effectiveness

Implementation of this alternative could result in short-term exposure to the surrounding community and field personnel. Potential short-term exposures to impacted soil, groundwater, and/or DNAPL could occur during installation of the DNAPL recovery wells that would be installed throughout the Site or during DNAPL recovery activities. Potential exposure mechanisms would include ingestion of or dermal contact with impacted soil, groundwater, and DNAPL and/or inhalation of volatile organic vapors.

Potential exposures to field personnel would be minimized through use of proper training and personal protective equipment (PPE), as specified in a Site-specific HASP that would be developed as part of the remedial design for this alternative. Air monitoring would be performed during well installation and DNAPL recovery activities to confirm that volatile organic vapors are within acceptable levels. Potentially impacted soil and groundwater generated during well installation activities would be properly managed to minimize potential exposures to the surrounding community. Potential risks to the community could occur during periodic DNAPL recovery activities via exposure to DNAPL. Potential exposures to the community would be minimized by following appropriate procedures and protocols that would be described in the SMP.

Although this alternative does not employ specific green remediation practices, implementation of this alternative would use minimal non-renewable resources and would limit generation of waste materials. In addition, this remedy allows for the Site to maintain its current use and role in the

community. As compared to Alternative 4, Alternative 2 is not anticipated to negatively impact the environment (i.e., consume substantial non-renewable resources and energy). The relative carbon footprint of Alternative 2 (compared to Alternatives 3 and 4) is considered minimal. The greatest contribution to greenhouse gases would occur because of equipment used during well installation activities.

DNAPL recovery well installation activities could be completed in approximately 2 months, and monitoring would be conducted throughout an assumed 30-year period.

5.3.2.2 Long-Term Effectiveness and Permanence

Under Alternative 2, DNAPL recovery would permanently reduce the volume of potentially mobile DNAPL at the Site. Groundwater monitoring would also be performed to evaluate and document the extent of dissolved phase MGP-related hydrocarbons and long-term trends in groundwater COC concentrations.

A majority of the surface cover at the Site consists of paved roadways/parking areas and buildings, which provide a physical barrier to subsurface impacts. The ICs would include a requirement to maintain the existing surface covers and an annual surface cover inspection program.

As discussed in Section 1, DNAPL and impacted soil are generally encountered at depths greater than 10 ft-bgs. Based on the current and foreseeable future use of the Site and surrounding properties as a commercial/restricted residential zone, Site workers, occupants, and nearby residents would not routinely conduct activities that could potentially result in exposure to impacted Site media.

If intrusive activities were to be conducted at the Site, the ICs would include requirements for notifications to NYSDEC, Con Edison, and NYSDOH regarding the proposed soil disturbance. In addition, the deed restrictions included within the ICs would require the Site owner/occupant to notify parties performing the intrusive activities of the presence of soil and groundwater containing MGP-related impacts. Disturbance of subsurface soils would be conducted in accordance with the procedures to be described in the SMP to minimize the potential for exposures to impacted Site media. The ICs would include a prohibition of the use of non-treated Site groundwater. Annual verification of the ICs would be completed to document that the controls are maintained and remain effective.

5.3.2.3 Land Use

The current Commercial District zoning for the area limits future Site use to mixed use (residential and hotel units are prohibited on the first floor), retail, offices, or entertainment venues.

Based on the current land use of the Site, the potential for exposure to MGP-related residual materials or soil containing MGP-related COCs is minimal. The majority of the Site is covered with asphalt, concrete, buildings, or vegetated soil and the frequency of intrusive activities that disturb subsurface soils in anticipated to be minimal. Additionally, drinking water is currently and will continue to be provided via a public supply. Therefore, groundwater containing MGP-related COCs is not and will not be used for potable (or other) purposes.

Alternative 2 would be consistent with the current land use at the Site and would not interfere with future redevelopment of the Site under the current zoning. Deed restrictions would be placed on the Site limiting certain activities such as gardening or use of the Site groundwater. Based on the proposed long-term groundwater monitoring and DNAPL monitoring/recovery components of this remedy, future Site redevelopment would require coordination with the Property owner/developer to maintain the surface covers, DNAPL recovery, and groundwater monitoring wells or to make provisions to access/repair/reinstall the wells as needed.

5.3.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Through the DNAPL monitoring and recovery activities, the volume of mobile DNAPL present on-Site would be permanently reduced, thereby reducing the potential for future migration of mobile DNAPL. DNAPL removal would also reduce the volume of material that is serving as a source to dissolved phase groundwater impacts. This removal would reduce the flux of COCs from source material to groundwater, which would reduce the toxicity and volume of dissolved phase groundwater impacts. Alternative 2 also includes groundwater monitoring to document the extent and potential long-term reduction of dissolved phase groundwater impacts.

5.3.2.5 Implementability

This remedial alternative would be technically and administratively implementable. From a technical implementability aspect, equipment and personnel qualified to install DNAPL recovery wells and conduct groundwater and DNAPL monitoring activities are readily available. The groundwater monitoring wells and DNAPL recovery would be secured in lockable subsurface vaults to prevent access by unauthorized personnel. DNAPL collection and recovery methods would also be assessed during the design of this alternative.

Administratively, ICs would be established for the Site, which would require Con Edison to negotiate with the current property owners and require coordination with state agencies (i.e., NYSDEC and NYSDOH). Agreements would need to be secured by Con Edison to install recovery wells and conduct the periodic DNAPL recovery and groundwater monitoring activities and Site inspections.

5.3.2.6 Compliance with Standards, Criteria, and Guidelines

The compliance with SCGs comparison includes an evaluation of the alternative's ability to comply with applicable federal, state, and local criteria, advisories, and guidance.

5.3.2.6.1 Chemical-Specific Standards, Criteria, and Guidelines

Chemical-specific SCGs are presented in **Table 2-1**. Potentially applicable chemical-specific SCGs for soil include 6 NYCRR Part 375-6 SCOs and 40 CFR Part 261 and 6 NYCRR Part 371 regulations for the identification of hazardous materials. Potentially applicable chemical-specific SCGs for groundwater include the following NYSDEC Class GA standards and guidance values:

- Alternative 2 would not address soil containing COCs at concentrations greater than Restricted Use Commercial SCOs. Soil containing MGP-related COCs above Restricted Use Commercial SCOs would remain in place beneath the current Site cover. Process residuals generated during the implementation of this alternative (e.g., drilling waste and development/purge water from DNAPL recovery well installation) would be managed and characterized in accordance with 40 CFR 261 and 6 NYCRR Part 371 to determine off-Site treatment/disposal requirements.
- As indicated in Section 1, samples collected from select groundwater monitoring wells during the RI contained VOCs and SVOCs at concentrations greater than NYSDEC Class GA standards and guidance values. As this alternative does not include removal activities to address soil containing MGP-related impacts (i.e., a source of dissolved phase MGP-related hydrocarbons), this alternative would likely not achieve groundwater SCGs within a determinate period of time.

5.3.2.6.2 Action-Specific Standards, Criteria, and Guidelines

Action-specific SCGs are presented in the attached **Table 2-2**. Potentially applicable action-specific SCGs include the following:

- Health and safety requirements associated with handling impacted media: Work activities would be conducted in accordance with OSHA requirements that specify general industry standards, safety equipment and procedures, and record keeping and reporting regulations. Compliance with these action-specific SCGs would be accomplished by following a Site-specific HASP.
- Regulations associated with the management of process residuals would be subject to USDOT requirements for packaging, labeling, manifesting, and transporting hazardous or regulated materials. Compliance with these requirements would be achieved by following a NYSDEC-approved Remedial Design/Remedial Action Work Plan and using licensed waste transporters and permitted disposal facilities. If any of the materials are characterized as a hazardous waste, NYS LDRs could be applicable.

5.3.2.6.3 Location-Specific Standards, Criteria, and Guidelines

Location-specific SCGs are presented in the attached **Table 2-3**. Potentially applicable location-specific SCGs generally include obtaining local permits if DNAPL recovery wells are proposed to be installed within public ROWs.

5.3.2.7 Overall Protection of Public Health and the Environment

This alternative would prevent exposures (i.e., direct contact, ingestion, and inhalation) to MGP-related impacts in subsurface soil and groundwater (achieving the public health RAOs for soil and groundwater) through the implementation of ICs. The reduction of potential exposures under this alternative would only occur by adhering to the ICs and the procedures to be presented in the SMP.

Alternative 2 would partially address MGP-related COCs and material that could cause impacts to groundwater through the recovery of mobile DNAPL. Periodic monitoring would be completed to document the extent of dissolved phase MGP-related hydrocarbons and potential trends in COC concentrations. Although mobile DNAPL would be permanently removed under Alternative 2, soil containing DNAPL that is not recoverable would still remain as a potential source to dissolved phase MGP-related hydrocarbons; therefore, this alternative is not expected to restore groundwater to pre-disposal/pre-release conditions nor address all sources of groundwater impacts because potentially mobile DNAPL may remain in former MGP structures, and inaccessible and/or immobile DNAPL would remain in subsurface soil until such time that the Site undergoes redevelopment and future MGP structures and or MGP-impacted media are accessible for removal or in situ treatment.

5.3.2.8 Cost Effectiveness

The estimated costs associated with Alternative 2 are presented in the attached **Table 5-1**. The total estimated 30-year present worth cost for this alternative is approximately $3,100,000. The estimated capital cost, including costs for installing DNAPL collection wells and establishing ICs, is approximately $600,000. The estimated 30-year present worth cost of O&M activities associated with this alternative, including conducting semi-annual DNAPL monitoring and annual groundwater monitoring, is approximately $2,500,000.

5.3.3 Alternative 3 – In Situ Stabilization of North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Alternative 3 includes the following major components:

- ISS of the residual materials present within the footprint of the north gas holder.
- Establishing ICs
- Maintaining existing surface covers
- Installing and performing DNAPL recovery.

- Conducting long-term groundwater monitoring
- Developing an SMP

Similar to Alternative 2, this alternative would address the potential for exposure to subsurface soil and groundwater containing MGP-related COCs through the implementation of ICs and maintaining the existing surface cover. In addition, this alterative would target potentially mobile DNAPL located within the footprint of the former 30,000-cubic-foot subgrade former gas holder located in the north portion of the Site). **Figure 5-2** presents a conceptual drawing of Alternative 3.

In general, ISS involves the mixing of Portland cement or other pozzolanic material with soil and MGP-related impacts to provide a material with improved physical characteristics. The primary physical properties typically attributed to ISS-treated materials that are desired in DNAPL-impacted soils at a former MGP Site consist of the following:

- Reduced leaching/mobility
- Minimizing free liquids
- Reduced hydraulic conductivity (to 1x10-5 cm/sec or less)

ISS is typically performed by mixing a fluid cement grout into a column of soil without excavating or removing the soil targeted for treatment. The ISS treatment would reduce the volume (via reducing the pore space) and potential mobility of pore-filling liquids (e.g., water, DNAPL) in the treated area. There are several methods for implementing ISS, including use of a large diameter mixing auger and bucket mixing using an excavator. Based on the potential presence of cobbles and obstructions within the former north gas holder, as well as the estimated mixing depth of less than 20 ft-bgs, and for the purposes of developing this alternative, it was assumed that ISS would be performed using bucket mixing, and the depth of treatment would be a maximum depth of 20 ft-bgs and the surface area of treatment would be approximately 1,950 square feet. Specific design details, including a mix design, would be addressed as part of the remedial design.

Prior to conducting the ISS activities, the areas of soil to be stabilized would be pre-excavated to an approximate depth of 4 ft-bgs to remove near-surface obstructions and approximately 20% of the soil volume from the treatment area to account for expansion of stabilized soils following ISS activities.

For the purposes of developing this remedial alternative, it was assumed that approximately 1,000 cubic yards (cy) of MGP-impacted materials within the former north gas holder would be treated following pre-excavation.

The ISS process would stabilize impacted soil by solidifying the impacted materials within the holder into a solid mass (micro-encapsulation) and solidifying the soil around the DNAPL-impacted materials (macro-encapsulation), forming a containment barrier to prevent migration of the DNAPL

outside of the solidified shell and substantially limiting the potential contact between impacted material and groundwater. In addition, the curing process is an exothermic reaction, and the heat from the reaction could serve to volatilize a portion of the COCs associated with the DNAPL-impacted materials.

If present, separate phase (i.e., recoverable) DNAPL encountered during the ISS pre-excavation activities would be segregated and placed in appropriate USDOT-approved containers (i.e., 55-gallon drums) for disposal.

Site restoration, in the form of restoring the surface cover materials disturbed as a result of the ISS activities, would be implemented. The remaining alternative components (as previously discussed under Alternative 2) would also be implemented.

5.3.3.1 Short-Term Impacts and Effectiveness

Implementation of this alternative could result in short-term exposure to the surrounding community and field personnel. Potential short-term exposures to impacted soil, groundwater, and/or DNAPL could occur during ISS pre-excavation, ISS activities, installation of the DNAPL recovery wells, or DNAPL recovery activities. Potential exposure mechanisms would include ingestion of, or dermal contact with, impacted soil, groundwater, and DNAPL and/or inhalation of volatile organic vapors.

Potential exposures to field personnel would be minimized through use of proper training and PPE, as specified in a Site-specific HASP that would be developed as part of the remedial design for this alternative. Air monitoring would be performed during ISS activities, well installation, and DNAPL recovery activities to confirm that volatile organic vapors are within acceptable levels (to be specified in the Site-specific HASP). Potentially impacted soil and groundwater generated during well installation activities would be properly managed to minimize potential exposures to the surrounding community. Potential exposures to the community would be minimized by following appropriate procedures and protocols that would be described in the SMP.

Although this alternative does not employ specific green remediation practices, implementation of this alternative would use limited non-renewable resources (specifically the reagent materials associated with the ISS) and would limit generation of waste materials. In addition, this remedy allows for the Site to maintain its current use and role in the community. Alternative 3 is not anticipated to negatively impact the environment over the long-term (i.e., consume non-renewable resources and energy for multiple years. The relative carbon footprint of this alternative is higher than Alternative 2 but less than Alternative 4. The greatest contribution to greenhouse gases would occur during production of the reagent materials used to create the ISS grout (Portland cement and or ground blast furnace slag) and from the equipment used during ISS and well installation activities.

ISS activities would require approximately 2 months to complete. DNAPL recovery well installation activities could be completed in approximately 2 months, and monitoring would be conducted throughout an assumed 30-year period.

5.3.3.2 Long-Term Effectiveness and Permanence

Under Alternative 3, a portion of impacted Site soil (associated with the north gas holder) would be addressed. Treatment of impacted soils via ISS is a permanent and irreversible process. Installation of DNAPL recovery wells and a long-term DNAPL recovery program would reduce the volume of mobile DNAPL at the Site, and the removal of DNAPL would be permanent. In addition, the performance of groundwater monitoring would document the extent of dissolved phase MGP-related hydrocarbons and long-term trends in groundwater COC concentrations.

A majority of the surface covers at the Site consists of paved roadways/parking areas and buildings, which provide a physical barrier to subsurface impacts. Disturbance of the surface covers during the ISS activities would be of a limited duration, and the surface covers would be restored following completion of the ISS activities.

As discussed in Section 1, DNAPL and impacted soil are generally encountered at depths greater than 10 ft-bgs. Based on the current and foreseeable future use of the Site and surrounding properties as a commercial/restricted residential zone, Site workers, occupants, and nearby residents would not routinely conduct activities that could potentially result in exposure to impacted Site media.

If intrusive activities were to be conducted at the Site, the ICs would include requirements for notifications to NYSDEC, Con Edison, and NYSDOH regarding the proposed soil disturbance. In addition, the deed restrictions included within the ICs would require the Site owner/occupant to notify parties performing the intrusive activities of the presence of soil and groundwater containing MGP-related impacts as well as Site areas that have been treated by ISS. Disturbance of subsurface soils (including soils treated via ISS) would be conducted in accordance with the procedures to be described in the SMP to minimize the potential for exposures to impacted Site media. The ICs would include a prohibition of the use of non-treated Site groundwater. Annual verification of the ICs would be completed to document that the controls are maintained and remain effective.

5.3.3.3 Land Use

The current Commercial District zoning for the area limits future Site use to mixed use (residential or hotel units are prohibited on the first floor); retail, offices, or entertainment.

Based on the current land use of the Site, the potential for exposure to MGP-related residual materials or soil containing MGP-related COCs is minimal. Most of the Site is covered with asphalt, concrete, buildings, or vegetated soil and the frequency of intrusive activities that disturb subsurface

soils in anticipated to be minimal. In addition, drinking water is currently and will continue to be provided via a public supply. Therefore, groundwater containing MGP-related COCs is not and will not be used for potable (or other) purposes.

Alternative 3 would be consistent with the current land use at the Site and would not interfere with future redevelopment of the Site under the current zoning. The presence of stabilized soils associated with the former north gas holder may limit certain future redevelopment activities. Deed restrictions would be placed on the Site limiting certain activities such as disturbance of the stabilized soils in the former north gas holder, gardening, or use of the Site groundwater. Based on the proposed long-term groundwater monitoring and DNAPL monitoring/recovery components of this remedy, future Site redevelopment would require coordination with the current (and future) property owner/developer to maintain the surface cover, DNAPL recovery, and groundwater monitoring wells or to make provisions to access, repair, and/or reinstall the wells as needed.

5.3.3.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 3 includes direct treatment of impacted materials within the north gas holder. ISS treatment would minimize the potential for future downgradient migration of potentially mobile DNAPL within the former north gas holder. In addition, the toxicity and volume of chemical constituents in groundwater downgradient of the north gas holder would be expected to be reduced because DNAPL-impacted holder materials would be stabilized, effectively minimizing the dissolution of COCs from the impacted material into the dissolved phase. Also, during ISS, the heat of the reaction would volatilize certain COCs from the impacted material, thus reducing the volume of COCs.

The remaining impacted media at the Site would not be actively treated. However, this alternative does include the installation of DNAPL recovery wells, periodic DNAPL monitoring, and passive recovery of mobile DNAPL that may collect in the wells. Through the DNAPL monitoring and recovery activities, the volume of mobile DNAPL would be permanently reduced, thereby reducing the potential for future migration of mobile DNAPL. DNAPL removal would also reduce the volume of material that is serving as a source to dissolved phase groundwater impacts. This removal would reduce the flux of COCs from source material to groundwater, which would reduce the toxicity and volume of dissolved phase groundwater impacts. Alternative 3 also includes groundwater monitoring to document the extent and potential long-term reduction of dissolved phase groundwater impacts.

5.3.3.5 Implementability

This remedial alternative would be technically and administratively implementable. From a technical implementability aspect, equipment and personnel qualified to perform the ISS activities, install DNAPL recovery wells and conduct groundwater and DNAPL monitoring activities are readily available.

Implementation challenges associated with the ISS activities include coordinating the delivery, set up, and installation of the equipment needed to support an ISS program at the Site. Based on the proximity of the north gas holder to the automotive service area would likely have to close temporarily to allow for the mixing operations to safely proceed. In addition, technical problems could result in schedule delays (e.g., equipment failure, treatment difficulties, traffic issues, coordination issues, the presence and removal of previously unmapped underground utilities or obstructions) but can be minimized with proper advanced planning and coordination of the remedial activities.

A treatability study and pre-design investigation would be conducted to better delineate the area to be treated via ISS and appropriately design the remedial action.

Prior to conducting ISS or installing the DNAPL recovery wells, subsurface utilities would be identified to ensure utilities are not damaged during remedial activities. Following completion of the remedial activities, the groundwater monitoring wells and DNAPL recovery wells would be secured in lockable subsurface vaults to prevent access by unauthorized personnel. DNAPL collection and recovery methods would also be assessed during the design of this alternative.

Administratively, ICs would be established for the Site, which would require Con Edison to negotiate with the current property owners and require coordination with state agencies (i.e., NYSDEC and NYSDOH). Agreements would need to be secured by Con Edison to install the recovery wells and conduct the periodic DNAPL recovery, groundwater monitoring activities and Site inspections at the Site.

5.3.3.6 Compliance with Standards, Criteria, and Guidelines

The alternative's ability to comply with applicable federal, state, and local criteria, advisories, and guidance in presented below.

5.3.3.6.1 Chemical-Specific Standards, Criteria, and Guidelines

Chemical-specific SCGs are presented in **Table 2-1**. Potentially applicable chemical-specific SCGs for soil include 6 NYCRR Part 375-6 SCOs and 40 CFR Part 261 and 6 NYCRR Part 371 regulations for the identification of hazardous materials. Potentially applicable chemical-specific SCGs for groundwater include the following NYSDEC Class GA standards and guidance values:

- Alternative 3 would not completely address soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 commercial SCOs. Soil containing MGP-related impacts would remain in place beneath the current Site cover. Process residuals generated during the implementation of this alternative (e.g., drilling waste and development or purge water from DNAPL recovery well installation) would be managed and characterized in accordance with 40 CFR 261 and 6 NYCRR Part 371 to determine off-Site treatment/disposal requirements.

- As indicated in Section 1, samples collected from select groundwater monitoring wells during the RI contained VOCs and SVOCs at concentrations greater than NYSDEC Class GA standards and guidance values. As this alternative does not include removal activities to address soil containing MGP-related impacts (i.e., a source of dissolved phase MGP-related hydrocarbons), this alternative would likely not achieve groundwater SCGs within a determinate period of time.

5.3.3.6.2 Action-Specific Standards, Criteria, and Guidelines

Action-specific SCGs are presented in the attached **Table 2-2**. Potentially applicable action-specific SCGs include the following:

- Health and safety requirements and regulations associated with handling impacted media: Work activities would be conducted in accordance with OSHA requirements that specify general industry standards, safety equipment and procedures, and record keeping and reporting regulations. Compliance with these action-specific SCGs would be accomplished by following a Site-specific HASP.
- Measures implemented to control levels of airborne particulate matter and or volatile organic vapors during pre-ISS soil excavation activities or during stabilization activities, in accordance with NYS Ambient Air Quality Standards: Compliance with these action-specific SCGs would be accomplished through work area monitoring and modifications to work methods to control generation of particulates or volatile vapors as specified in the CAMP.
- Process residuals would be subject to USDOT requirements for packaging, labeling, manifesting, and transporting hazardous or regulated materials. Compliance with these requirements would be achieved by following a NYSDEC-approved Remedial Design/Remedial Action Work Plan and using licensed waste transporters and permitted disposal facilities. If any of the materials are characterized as a hazardous waste, NYS LDRs could be applicable.

5.3.3.6.3 Location-Specific Standards, Criteria, and Guidelines

Location-specific SCGs are presented in the attached **Table 2-3**. Potentially applicable location-specific SCGs generally include local approvals to use the existing potable water supply for the ISS grout-mixing plant and local permits as needed to install DNAPL recovery wells within public ROWs.

5.3.3.7 Overall Protection of Public Health and the Environment

This alternative would prevent exposures (i.e., direct contact, ingestion, and inhalation) to MGP-related impacts in subsurface soil and groundwater (public health RAOs for soil and groundwater) through the implementation of ICs. The reduction of potential exposures under this alternative would only occur by adhering to the ICs and the procedures to be presented in the SMP.

Alternative 3 would partially address MGP-related COCs and material that could impact groundwater through treatment of DNAPL-impacted materials within the north gas holder and the recovery of mobile DNAPL. Periodic monitoring would be completed to document the extent of dissolved phase MGP-related hydrocarbons and potential trends in COC concentrations. Although mobile DNAPL would be permanently treated and removed under Alternative 3, impacted soil (a potential source of dissolved phase MGP-related hydrocarbons) would remain. Therefore, this alternative is not expected to restore groundwater to pre-disposal/pre-release conditions nor address all sources of groundwater impacts, as potentially mobile DNAPL may remain in former MGP structures, and inaccessible and/or immobile DNAPL would remain in subsurface soil until such time that the Site undergoes redevelopment and future MGP structures and or impacted media are accessible for removal of in situ treatment.

5.3.3.8 Cost Effectiveness

The estimated costs associated with Alternative 3 are presented in the attached **Table 5-2**. The total estimated 30-year present worth cost for this alternative is approximately $4,300,000. The estimated capital cost, including costs for installing DNAPL collection wells and establishing ICs, is approximately $1,800,000. The estimated 30-year present worth cost of O&M activities associated with this alternative, including conducting semi-annual DNAPL monitoring and annual groundwater monitoring, is approximately $2,500,000.

5.3.4 Alternative 4 - Removal of Soil to Achieve 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives, Groundwater Monitoring, and ICs

This remedial alternative consists of the following:

- Closing Cedar Street to all vehicles between Radisson Plaza and Spring Street
- Relocation of subsurface utilities located underneath the Cedar Street ROW for duration of excavation activities
- Over-drilling and removing the existing monitoring well network (17 monitoring wells)
- Demolition of the existing above-grade structures (assumed to be constructed as slab-on-grade buildings)
- Removing asphalt and concrete surface coverings over the majority of the Property and within the Cedar Street ROW
- Installing excavation support around the perimeter of the proposed soil removal area that will consist of a braced sheet pile system with H-piles socketed into the bedrock for added support
- Installing an excavation dewatering system
- Installing a groundwater treatment system to treat extracted groundwater prior to off-Site discharge to a permitted receiving facility

  - Up to approximately 15,000,000 gallons of groundwater is anticipated to be extracted during the excavation activities
  - Treatment system to consist of storage tanks, oil-water settling, and a tertiary filtration system.
  - Treated groundwater to be discharged to Westchester County POTW (presumed to be the New Rochelle wastewater treatment plant)
- Installation of a temporary structure around the proposed limits of excavation to contain vapors that may be generated during soil removal activities
- Removing former MGP structures, overburden soils and accessible weathered bedrock (up to 3 feet below the overburden soils) that contain COCs at concentrations greater than the unrestricted use soil cleanup objectives included in 6 NYCRR Part 375-6
  - The maximum excavation depth is assumed to be 20 ft-bgs
  - Total volume of removed materials, including surface materials is 67,400 cy
- Treating excavated soils to remove free liquids through additional of an amendment (Portland cement or another approved agent)
- Transporting off-Site for disposal approximately 108,000 tons of excavated materials along with other waste materials generated during the remedial activities
- Backfilling the excavation areas with general soil fill
- Restoring Cedar Street with asphalt and replacing disturbed sidewalks in kind
- Restoring Site cover on Toyota Dealership property
- Installing up to 8 groundwater monitoring wells to the top of bedrock
- Establishing ICs to prohibit the use of groundwater at the Site

As indicated in Section 1, groundwater samples collected from select monitoring wells during the RI were reported to contain BTEX and PAHs at concentrations greater than NYSDEC Class GA groundwater standards and guidance values. Although there are no current users of groundwater or exposures to impacted groundwater, this alternative would also include conducting groundwater monitoring to document potential changes in Site groundwater conditions. Groundwater samples would be submitted for laboratory analysis for Site COCs. Analytical results would be used to document the extent of dissolved phase MGP-related hydrocarbons and potential trends in COC concentrations. In developing a cost estimate for this alternative, annual groundwater monitoring activities were assumed to be conducted for 30 years.

The estimated extent of this remedy is shown in Figure 5-3.

5.3.4.1 Short-Term Impacts and Effectiveness

Implementation of this alternative could result in short-term exposure of the surrounding community and Site workers to Site-related COCs as a result of excavation, material handling, and off-Site transportation activities. Implementation of this alternative would cause significant disruption to the

surrounding community throughout a prolonged period of time based on the extent of the soil removal, the building demolition, quantity of waste materials to be generated and transported off Site, and the anticipated duration of the remedial construction. Additionally, field personnel may be exposed to impacted soil, groundwater, and/or NAPL during groundwater monitoring well and NAPL collection well installation activities. Potential exposure mechanisms would include ingestion and dermal contact with NAPL, impacted soil, and/or groundwater and inhalation of volatile organic vapors or dust containing COCs during remedial construction.

Potential exposure of remedial workers would be minimized through the use of appropriately trained field personnel and PPE, as specified in a Site-specific HASP that would be developed as part of the remedial design. A CAMP would be prepared, and community air monitoring would be performed during excavation and backfilling activities to evaluate the need for additional engineering controls (e.g., use of water sprays to suppress dust, and modify the rate of construction). Community access to excavation areas would be restricted by temporary security fencing and excavation enclosures. Cedar Street, between Radisson Plaza and Spring Street would be closed to through vehicles and pedestrian traffic for up to 18 months during remedial construction activities. Pedestrian and vehicle traffic would be re-routed to avoid the work area.

Additional worker safety concerns include locating and deactivating subsurface utilities, working with and around large construction equipment, noise generated from installing sheeting and operating construction equipment, and increased vehicle traffic associated with transportation of excavated material from the Site and delivery of fill materials. These concerns would be minimized by using engineering controls and appropriate health and safety practices. Off-Site transportation of excavated material and importation of clean fill materials would result in approximately 4,820 roundtrips by tri-axle trucks (assuming 14 cy per truck). Transportation activities would be managed to minimize en-route risks to the community.

Under this alternative, excavated material would not be used for Site backfill. The relative carbon footprint of Alternative 4 (as compared to the other alternatives) is considered significant. The greatest contributions to greenhouse gases would occur as a result of equipment operation during excavation, backfilling, transportation activities and off-Site treatment of soils using LTTD.

Implementation of this alternative would cause significant disruptions to the surrounding community (i.e., increased truck traffic, road closures, increased noise, and visual nuisances associated with the remedial construction), as well as a significant increase in the potential for exposures to impacted media for nearly 18 months. Although Alternative 4 consists of the greatest amount of removal, monitoring would still be conducted within the Site area throughout an assumed 30-year period based on the nature and extent of impacts that would remain in the fractured bedrock (and the upward hydraulic gradients) following remedial construction.

5.3.4.2 Long-Term Effectiveness and Permanence

The potential for future long-term impacts from and exposures to MGP-related COCs in Site media would be reduced through the implementation of this alternative. Under Alternative 4, soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 unrestricted use SCOs (including soil and former MGP structures located underneath the existing Toyota Dealership property and within the Cedar Street ROW) would be excavated to depths up to 20 ft-bgs (i.e., top of bedrock surface). Implementation of this alternative would pose a substantial disruption to the community in the vicinity of the construction area. Additionally, although this alternative would remove a substantial amount of DNAPL-impacted material (i.e., all DNAPL-impacted soil within the overburden), DNAPL would still be present within the fractured bedrock (and areas of weathered bedrock located deeper than 20 ft-bgs). Excavations would be backfilled with clean imported fill, thereby reducing the potential for exposures during future Site redevelopment activities. Excavated materials would be transported off-Site for treatment/disposal.

Alternative 4 also includes groundwater monitoring to document the presence of dissolved phase impacts and potential trends in COC concentrations. Through the removal of impacted soil, the concentrations and extent of dissolved phase impacts are expected to be reduced over time; however, the presence of DNAPL within fractured bedrock in areas of upward hydraulic gradients could serve as a long-term source of dissolved phase COCs. Potential exposures to field personnel and the community during long-term monitoring activities would be minimized by following appropriate procedures and protocols that would be established in the SMP to be prepared as part of this alternative.

Alternative 4 would include establishing institutional controls for the Site to prohibit the use of groundwater. Annual verification of the institutional controls would be completed to document that the controls are maintained and remain effective.

5.3.4.3 Land Use

The current Commercial District zoning for the area limits future Site use to mixed use (residential or hotel units are prohibited on the first floor); retail, offices, or entertainment.

Alternative 4 would be extremely disruptive to the businesses and land use within and nearby the area to be remediated. The total length of time required to implement this remedial alternative would be approximately 18 months, which could impact local businesses and the land use in this area for an extended amount of time following the completion of the remedial activities. Following implementation, the remediated area would be restored similar to the current condition, which should support the current land use and zoning. Deed restrictions would still be required for the Site to prohibit groundwater usage. Based on the proposed long-term groundwater monitoring component of this remedy, future use of properties that contain groundwater monitoring wells may

require coordination with the future Site owners to maintain the wells or to make provisions to access, repair, or re-install the wells as needed.

5.3.4.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 4 would include the off-Site treatment and/or disposal of approximately 67,400 cy of soil removed from the Site (including former MGP structures that may be present in over burden soils).

Through the excavation activities at the Site, the volume of MGP-impacted soils would be reduced, thereby reducing the potential for future migration of mobile NAPL at the Site. Additionally, removal of NAPL-impacted soils from the overburden and up to 3 feet of weathered bedrock would reduce the volume of material that is serving as a source to dissolved phase groundwater impacts in the overburden. This removal would reduce the flux of COCs from source material to groundwater, which would reduce the toxicity and volume of dissolved phase groundwater impacts. The presence of DNAPL in the fractured bedrock and upward hydraulic gradients could potentially remain as a source of dissolved phase groundwater impacts at the Site. Alternative 3 also includes annual groundwater monitoring to document the trends in dissolved phase groundwater impacts following soil removal activities.

5.3.4.5 Implementability

This remedial alternative has significant implementability challenges from a technical and administrative standpoint. From a technical implementability perspective, the extent of the excavation activities given the urban setting would cause a severe disruption to the surrounding community. Removal and off-Site disposal of soil is technically feasible, although conducting the extensive soil removal activities associated with this alternative in an urban public setting presents numerous logistical challenges. During the implementation of this remedial alternative, traffic patterns will be disrupted for extended durations on Cedar Street and the adjacent roadways.

The disruption of traffic could temporarily affect emergency vehicle routes through New Rochelle. Excavation enclosures would likely be used to minimize potential exposures to the surrounding community during remedial activities, however these enclosures can add implementation challenges to the excavation activities by requiring equipment operators to wear respiratory protection when working within the enclosure. Subsurface utilities located beneath Cedar Street (including natural gas, electric, water, sanitary, stormwater and telecommunication lines) would have to be re-routed, bypassed, and/or protected as appropriate during prior to the remedial construction activities. Additionally, multiple treatment/disposal facilities and borrow sources capable of handling more than 67,500 cy of impacted material and providing a similar amount of fill material would have to be identified prior to the implementation of this alternative. Based on the limits of the excavation, local traffic would have to be rerouted for up to 18 months, thereby causing significant disruptions to the surrounding community. Transportation planning would be conducted prior to the remedial

activities. Tractor trailers would likely not be used based on the larger turning radius required for 6-axle vehicles. Based on the extent of excavation activates, soil-loading conditions from nearby buildings and roadways would have to be evaluated as part of the remedial design.

Access agreements would have to be secured with the Property owner and City of New Rochelle to conduct the excavation activities. The proposed excavation activities that would be conducted under this alternative could cause a significant disruption to the City of New Rochelle. Implementation of this remedial alternative would likely require extended discussions with the City to obtain their approval and demonstrate the benefits of the alternative given the relatively low potential for exposure to the impacted material. If Alternative 4 were implemented, following the completion of the remedial activities, institutional controls would be established for Site to prohibit groundwater usage, which would require coordination with state agencies (i.e., NYSDEC and NYSDOH).

5.3.4.6 Compliance with Standards, Criteria, and Guidelines

The alternative's ability to comply with applicable federal, state, and local criteria, advisories, and guidance in presented below.

5.3.4.6.1 Chemical-Specific Standards, Criteria, and Guidelines

Chemical-specific SCGs are presented in **Table 2-1**. Potentially applicable chemical-specific SCGs for soil include 6 NYCRR Part 375-6 SCOs and 40 CFR Part 261 and 6 NYCRR Part 371 regulations for the identification of hazardous materials. Potentially applicable chemical-specific SCGs for groundwater include the following:

- NYSDEC Class GA standards and guidance values.
- Alternative 4 would include the removal of soil that contains COCs at concentrations greater than 6 NYCRR Part 375-6 unrestricted use SCOs at depths up to 20 ft-bgs. DNAPL would remain within weathered bedrock (at depths greater than 20 feet below grade) and within the fractured bedrock. However, these bedrock layers would be beneath 20 feet of clean imported fill material and non-impacted surface materials (i.e., pavement, concrete, buildings). Excavated materials and process residuals would be managed and characterized in accordance with 40 CFR Part 261 and 6 NYCRR Part 371 regulations to determine off-Site treatment/disposal requirements. NYS LDRs would apply to materials that are characterized as a hazardous waste.
- As indicated in Section 1, samples collected from select groundwater monitoring wells during the RI contained VOCs and SVOCs at concentrations greater than NYSDEC Class GA standards and guidance values. As this alternative does not include removal activities to address fractured bedrock containing DNAPL (i.e., a source of dissolved phase MGP-related impacts to groundwater), this alternative may not achieve groundwater SCGs in Site areas with upward hydraulic gradients within a determinate period of time.

5.3.4.6.2 Action-Specific Standards, Criteria, and Guidelines

Action-specific SCGs are presented in the attached **Table 2-2**. Potentially applicable action-specific SCGs include the following:

- Health and safety requirements and regulations associated with handling impacted media: Work activities would be conducted in accordance with OSHA requirements that specify general industry standards, safety equipment and procedures, and record keeping and reporting regulations. Compliance with these action-specific SCGs would be accomplished by following a Site-specific HASP.
- Measures implemented to control levels of airborne particulate matter and or volatile organic vapors during pre-ISS soil excavation activities or during stabilization activities, in accordance with NYS Ambient Air Quality Standards: Compliance with these action-specific SCGs would be accomplished through work area monitoring and modifications to work methods to control generation of particulates or volatile vapors as specified in the CAMP.
- Process residuals would be subject to USDOT requirements for packaging, labeling, manifesting, and transporting hazardous or regulated materials. Compliance with these requirements would be achieved by following a NYSDEC-approved Remedial Design/Remedial Action Work Plan and using licensed waste transporters and permitted disposal facilities. If any of the materials are characterized as a hazardous waste, NYS LDRs could be applicable.

5.3.4.6.3 Location-Specific Standards, Criteria, and Guidelines

Location-specific SCGs are presented in the attached **Table 2-3**. Potentially applicable location-specific SCGs generally include:

- City of New Rochelle building construction codes and ordinances
- NYS Department of Transportation approvals for traffic rerouting within interstate corridor
- Local and County approvals for street closures (including rerouting of emergency vehicles)
- Local permits for the relocation of subsurface utilities.

Implementation of Alternative 4 would require significant coordination with the City of New Rochelle and Westchester County Department of Public Works based on the prolonged disruption to surrounding community due to the extensive excavation activities.

5.3.4.7 Overall Protection of Public Health and the Environment

Alternative 4 would mitigate the potential for long-term exposures to impacted subsurface soil by physically removing soil containing MGP-related COCs at concentrations greater than 6 NYCRR Part 375-6 unrestricted use SCOs (including NAPL-impacted soil and former MGP structures), monitoring groundwater, and implementing institutional controls. This alternative addresses the most likely potential future exposures that could occur at the Site. The potential for future construction workers

to be exposed to MGP-related impacts while conducting subsurface work during the redevelopment of the Site would be significantly reduced through the removal of soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 unrestricted use SCOs to depths up to 20 feet below grade. Weathered and fractured bedrock containing DNAPL would remain at depths greater than 20 ft-bgs and would not be addressed through active containment, treatment, or removal.

This alternative would achieve the soil RAOs established for the Site. Groundwater RAOs may not be achieved if the presence of DNAPL within the fractured bedrock is located in an area of upward hydraulic gradients. The potential for DNAPL within fractured bedrock to serve as a long-term source would be monitored and assessed as part of the groundwater monitoring activities.

5.3.4.8 Cost Effectiveness

The estimated costs associated with Alternative 4 are presented in the attached **Table 5-2**. The total estimated 30-year present worth cost for this alternative is approximately $51,000,000. The estimated capital cost, including costs to reinstall groundwater monitoring wells and establishing ICs, is approximately $49,800,000. The estimated 30-year present worth cost of O&M activities associated with this alternative, including conducting semi-annual DNAPL monitoring and annual groundwater monitoring, is approximately $1,200,000.

6 Comparative Analysis of Alternatives

6.1 General

This section presents a comparative analysis of each remedial alternative using the evaluation criteria identified in Section 5.2. The comparative analysis identifies the advantages and disadvantages of each alternative relative to each other and with respect to the evaluation criteria.

6.2 Comparative Analysis of Site-Wide Remedial Alternatives

The following alternatives were evaluated in Section 5:

- Alternative 1 – No Action
- Alternative 2 – DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and ICs
- Alternative 3 – In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, Capping and Institutional Controls
- Alternative 4 – Removal of Soil to Achieve 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives, Groundwater Monitoring, and ICs

The comparative analysis of these alternatives is presented below.

6.2.1 Short-Term Impacts and Effectiveness

The short-term effectiveness criterion consists of an evaluation of potential impacts and nuisances to the public and environment and potential impacts to Site workers during implementation of the alternative, the effectiveness of measures used to mitigate the short-term impacts, the sustainability of the remedy, and the relative time frame for implementation.

Alternative 1 would not include any active remediation and subsequently would not present potential short-term impacts to remedial workers, the public, or the environment. Alternatives 2 and 3 each include installation of DNAPL recovery wells. Soil cuttings generated during DNAPL recovery well installation activities would be transported for off-Site treatment/disposal. Overall, Alternative 2 would pose minimal potential short-term risks and potential disturbances to remedial workers and the surrounding community.

Alternative 3 includes ISS of the north gas holder. This alternative would pose potential short-term risks to remedial workers and the public from potential exposure to impacted soil and DNAPL during ISS pre-excavation activities on-Site, and off-Site transportation of excavated material. Additionally, the excavation and ISS activities conducted under this alternative would pose short-term risks from the operation of construction equipment, work area safety concerns for Site workers and Site visitors.

Alternative 3 would cause disruption to the on-Site business for approximately 4 months, during which time the automotive service area may need to be temporarily closed.

Alternative 4 would cause substantial disruption for approximately 18 months to the Site occupants and surrounding community. Alternative 4 requires relocation of two active businesses as well as closure of a major roadway, and extensive utility rerouting and relocation.

As Alternatives 3 and 4 include progressively more excavation and treatment of a subsequently larger quantity of soil (when compared to soil cuttings generated under Alternative 2), both cause greater disruption to the surrounding community. Nuisances to the surrounding community would include of an increase in local truck traffic in New Rochelle from the importation of ISS reagent materials (for Alternative 3) or importation of fill materials (Alternative 4) and off-Site transportation of excavated materials (for both Alternatives 3 and 4).

Potential exposures during remedial construction of these alternatives would be mitigated, to the extent practicable, by using appropriate PPE, air and work space monitoring, implementation of dust control and noise mitigation measures (as appropriate and if necessary based on monitoring results), proper planning and training of remedial workers, and use of temporary security fencing. Mitigation measures for each alternative would be identified in the remedial design.

Compared to the other remedial alternatives, Alternative 4 would be the most disruptive to the surrounding community, has the greatest potential for exposures to remedial workers and the public, and would require the longest time to implement. Therefore, Alternative 4 has the lowest level of short-term effectiveness (i.e., the greatest potential for exposure during implementation).

6.2.2 Long-Term Effectiveness and Permanence

The long-term effectiveness and permanence comparison includes an evaluation of the risks remaining at the Site following implementation of the remedy as well as the effectiveness of the controls implemented to manage the remaining risks (if any).

A majority of the surface cover on the Site consists of paved roadways/parking areas and buildings, which provide a physical barrier to impacted subsurface soil and groundwater. Additionally, soil containing visual coal tar is encountered at depths greater than 10 feet bgs. Site groundwater is encountered at depth as shallow as approximately 4.5 ft-bgs. Based on the current and foreseeable future use of the Site as a commercial property, Site workers, patrons, and nearby residents do not routinely conduct activities that would potentially result in exposure to impacted Site media. Additionally, drinking water is currently and will continue to be provided via a public supply.

Alternative 1 would not include the implementation of any remedial activities and therefore, would not address potential long-term exposures to or impacts from Site media that contain MGP-related

impacts. Based on the limited potential for exposures to impacted Site media, the periodic groundwater monitoring, IC, and SMP components of Alternative 2 could be considered an effective means to reduce the potential for future exposures.

Alternatives 2 and 3 would include DNAPL recovery to reduce the volume of mobile DNAPL present at the Site and groundwater monitoring to evaluate and document the extent of dissolved phase MGP-related hydrocarbons and potential trends in COC concentrations. As indicated in Section 5, DNAPL recovery followed by off-Site disposal is permanent. Alternative 4 also permanently removes DNAPL from the overburden soils by excavating all soils containing COCs at concentrations greater than the unrestricted use SCOs.

Under Alternatives 2 and 3, the greatest potential for exposure to soil and groundwater containing MGP-related impacts following remediation would occur during subsurface work that would be conducted during future Site improvement or redevelopment activities. Based on the depth to groundwater (i.e., approximately 4.5 feet below grade), future construction workers may be exposed to groundwater containing MGP-related COCs at concentrations greater than SCGs

Alternative 3 would also address potential exposures to impacted soil in the former north gas holder location but would not address other soils or groundwater containing COCs greater than SCGs or soils or groundwater containing MGP-related DNAPL.

Alternative 4 includes the excavation of substantial quantities of soil to reduce the potential for encountering impacted materials during future Site work and to eliminate the need to implement an SMP. Because Alternative 4 will not address the potential for long-term dissolved phase MGP COCs in groundwater (due to the presence of DNAPL in fractured bedrock combined with upward hydraulic gradients in select areas on-Site), this alternative may not achieve additional protectiveness to groundwater exposure (when compared to Alternatives 2 and 3). Therefore, Alternatives 2 and 3 are considered equally effective at protecting human health from potential long-term risks associated with MGP-impacted groundwater when compared to Alternative 4.

6.2.3 Land Use

This criterion evaluates the current and intended future land use of the Site relative to the degree to which the remedial alternative addresses Site impacts when unrestricted use cleanup levels would not be achieved.

Each of the alternatives would be consistent with current land use at the Site and should not limit the future redevelopment of area under current zoning. Alternatives 2 and 3 would create a relatively short-term disruption to current business-related operations on the Property, as well as potential disruption to pedestrian and/or vehicle access on Cedar Street. Alternative 3 would likely require temporary shutdown of the automotive repair shop and would be disruptive to the surrounding

community and Site businesses for approximately 4 months. Alternative 4 would cause a significant prolonged disruption to the surrounding community and access to the Site could be restricted for approximately 18 months.

Following implementation of any of the alternatives, disturbed surfaces would be restored in a manner consistent with existing Site conditions and land use should not change relative to the current zoning. Deed restrictions would be required for the Site as part of Alternatives 2, 3 and 4. Based on the proposed long-term groundwater monitoring and DNAPL monitoring/recovery (for Alternatives 2 and 3), the future use of the properties will require coordination with the current/future property owners to maintain the selected remedy.

6.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment

The comparative analysis for the reduction of toxicity, mobility, or volume consists of an evaluation of the ability of the remedial process to address the impacted material, the mass of material destroyed or treated, the irreversibility of the processes employed, and the nature of the residuals that would remain following implementation of the remedy.

Alternative 1 would not actively treat, remove, recycle, or destroy impacted Site media and therefore, is considered the least effective for this criterion. Alternatives 2 and 3 each include the installation of DNAPL collection points and conducting periodic DNAPL recovery to reduce the volume of mobile present within the subsurface and periodic groundwater monitoring to document the extent of dissolved phase MGP-related hydrocarbons and potential trends in dissolved phase COC concentrations. Alternative 3 would also address the presence of MGP residual materials within the north gas holder through ISS. Alternative 4 would remove the most amount of MGP-impacted overburden soils by targeting all soils containing COCs at concentrations greater than 6 NYCRR Part 375-6 unrestricted use SCOs at the Site, to a maximum depth of 20 ft-bgs. Therefore, a higher volume of MGP-impacted materials would be removed and treated under Alternative 4 relative to the other alternatives.

The total volume of soil and the volume of visually impacted soil treated under each alternative are summarized in **Table 6-1**.

Table 6-1
Soil Treatment Volumes

Alternative	Estimated Volume of MGP-Impacted Soil Treated (cy)	Total Volume of Soil Treated (cy)
Alternative 1	0	0
Alternative 2	0	0
Alternative 3	300	1,000
Alternative 4	6,450	64,500

Notes
1. Alternative 3 assumes, on average, the bottom 4 feet of the north gas holder will be visually impacted with coal-tar DNAPL
2. Alternative 4 assumes, on average, the bottom 2 feet of the entire excavation area will be visually impacted by MGP-related COCs

Although it is not certain that the DNAPL removal activities proposed under Alternatives 2 and 3, or the soil removal activities proposed under Alternative 4 would achieve NYSDEC groundwater standards, improvement in shallow groundwater quality downgradient of the Site would be anticipated based on the anticipated source material removal.

None of the alternatives would address DNAPL located within the fractured bedrock.

6.2.5 Implementability

The implementability comparison includes an evaluation of the technical and administrative feasibility of implementing the remedial alternative.

Alternative 1 would not include the implementation of any remedial activities and therefore, is considered the most implementable. Alternatives 2 and 3 include installation DNAPL collection wells, and groundwater monitoring, preparation of an SMP, and implementation of ICs. From a technical implementability standpoint, these activities do not require highly specialized equipment or personnel and could be easily implemented. Administratively, establishing ICs for the Site would require Con Edison to negotiate with the current property owner and would require coordination with state agencies (i.e., NYSDEC and NYSDOH). Access agreements would need to be secured by Con Edison to install new wells and conduct the periodic DNAPL and groundwater monitoring activities.

Alternative 3 also includes ISS of the north gas holder. ISS of the north gas holder is technically feasible, although conducting ISS activities in on an active business in an urban setting presents numerous logistical challenges. There is limited available space at the Site for material handling and staging and small construction equipment would be required to conduct the ISS activities. Implementation of Alternatives 3 could require temporary shutdown of the automotive service shop as well as other possible disruptions to business activities.

Alternative 4 poses much greater implementability challenges due to the extent of the proposed excavations, space limitations, and existing underground utilities and infrastructure that would need to be rerouted. Under this alternative, the community could be directly disrupted by active operation for approximately 18 months. Alternative 4 would have the potential for the most significant disruptions based on the duration and extent of the remedial construction activities.

Transportation planning would be conducted prior to implementing Alternative 4. Tractor trailers would likely not be used based on the larger turning radius required from 6-axle vehicles. Additionally, soil removal activities would have to be conducted in a manner as to not jeopardize the health and safety of or cause a nuisance to the building occupants located on the west side of Cedar Street. Soil-loading conditions from nearby buildings and roadways would have to be evaluated as part of the remedial design. Underground utilities (i.e., electric, gas, water, and telecommunication) are located along underneath Cedar Street. All utilities would have to be bypassed, and/or protected as appropriate prior to implementation of the remedial construction activities under Alternative 4. Additionally, multiple treatment/disposal facilities and borrow sources capable of handling more than 67,400 cy of impacted material and providing a comparable volume of fill material would have to be identified prior to the implementation of Alternative 4. Conducting excavation activities to depths of 20 would be challenging given the urban setting. Administratively, access agreements would have to be secured with the Property owner to conduct the ISS or soil removal activities. The business may have to consider an alternative location for storage and temporarily cease other business activities.

As indicated above, Alternatives 1 and 2 are considered the most implementable. Alternatives 3 and 4 both contain implementability challenges due to the Site setting and presence active businesses. Alternative 4 is considered the least implementable, when compared to the other alternatives, based on the disruption to the on-Site businesses and surrounding community, and the administrative approvals that would be required to implement the alternative.

6.2.6 Compliance with Standards, Criteria, and Guidelines

The compliance with SCGs comparison includes an evaluation of the alternative's ability to comply with applicable federal, state, and local criteria, advisories, and guidance.

6.2.6.1 Chemical-Specific Standards, Criteria, and Guidelines

Chemical-specific SCGs are presented in the attached **Table 2-1**. Only Alternative 4 would address all soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 Restricted Commercial Use or Unrestricted Use SCOs as the other alternatives would leave behind soil containing DNAPL and impacted media. Under each alternative, excavated material and process residuals generated during implementation of the alternatives would be characterized in accordance with 40 CFR Part 261 and 6NYCRR Part 371 to determine appropriate off-Site treatment/disposal requirements.

Site groundwater contains VOCs and SVOCs at concentrations greater than NYSDEC Class GA standards and guidance values. Although Alternatives 2 and 3 both include DNAPL recovery to reduce the volume of DNAPL within the subsurface and Alternative 4 includes removal of overburden soils, these alternatives are not expected to reduce COC concentrations in Site groundwater to NYSDEC Class GA standards and guidance values. None of the alternatives would include the removal of NAPL-containing bedrock and therefore, none of the alternatives are anticipated to achieve groundwater SCGs within a foreseeable timeframe.

6.2.6.2 Action-Specific Standards, Criteria, and Guidelines

Action-specific SCGs are presented in the attached **Table 2-2**.

Under each of the alternatives, excavated soil and process residuals generated for each alternative would be subject to USDOT requirements for packaging, labeling, manifesting, and transporting hazardous or regulated materials. Compliance with these requirements would be achieved by following a NYSDEC-approved Remedial Design/Remedial Action Work Plan and using licensed waste transporters and permitted disposal facilities. Per DER-4 (NYSDEC 2002), waste soils generated from a former MGP site that is characteristically hazardous for benzene only is conditionally exempt from hazardous waste management requirements when destined for thermal treatment (i.e., LTTD). All excavated (or otherwise generated) material and process residuals would be disposed of in accordance with applicable NYS LDRs. Alternatives 2, 3 and 4 would be equally effective at meeting the action-specific SCGs, assuming proper project planning and implementation of appropriate controls.

6.2.6.3 Location-Specific Standards, Criteria, and Guidelines

Location-specific SCGs are presented in the attached **Table 2-3**. Potentially applicable location-specific SCGs generally include local approvals to use the existing potable water supply for the ISS grout-mixing plant and local permits as needed to install DNAPL recovery wells within public ROWs. Alternatives 2, 3, and 4 would be equally effective at meeting the location-specific SCGs, assuming proper project planning and implementation of appropriate controls.

6.2.7 Overall Protection of Public Health and the Environment

This criterion evaluates the ability of each alternative to protect public health and the environment, and the ability of each alternative to achieve the RAOs.

The greatest potential for exposure to soil and groundwater containing MGP-related impacts would occur during subsurface work that could be conducted during future redevelopment or maintenance activities at the Site. As Alternative 1 does not include any active remedial measures or administrative controls, Alternative 1 is not considered protective of human health and the environment. Alternatives 2, 3 and 4 would each prevent exposures (i.e., direct contact, ingestion, and inhalation)

to MGP-related impacts in subsurface soil and groundwater. Alternatives 2 and 3 would rely on the implementation of ICs, surface cover maintenance and adherence to procedures set forth in an SMP. Alternative 4 would remove the overburden soils.

Alternatives 2, 3 and 4 would each work toward addressing MGP-related COCs and materials that could cause impacts to groundwater. Alternative 2 would solely rely on DNAPL recovery; Alternative 3 would also treat the MGP-impacted materials within the north gas holder; and Alternative 4 would remove the MGP-impacted materials in the overburden soils. Each of these alternatives would include periodic groundwater monitoring to document the extent of dissolved phase MGP-related hydrocarbons and potential decreasing trends in COC concentrations.

None of the alternatives are expected to address bedrock containing DNAPL and none of the alternatives are expected to restore groundwater to pre-disposal/pre-release conditions or address all MGP-related sources of groundwater impacts.

Although Alternative 4 would address the greatest amount of MGP-impacted materials through soil removal, Alternatives 2 and 3 are both considered as effective in achieving the protection of human health RAOs that have been established for the Site. Additionally, Alternative 2 would be the least disruptive to the current Site occupants and the surrounding community. As Alternative 2 achieves the Site-specific RAOs, the limited added benefit to long-term effectiveness and the reduction of toxicity, mobility, and volume from implementing Alternatives 3 and 4 do not outweigh the significantly greater short-term impacts and implementability concerns associated with these alternatives when compared to Alternative 2.

6.2.8 Cost Effectiveness

Table 6-2 summarizes the estimated costs associated with implementing each of the remedial alternatives.

Table 6-2
Estimated Costs

Alternative	Estimated Capital Cost	Estimated Present Worth of O&M Cost*	Total Estimated Cost
Alternative 1	$0	$0	$0
Alternative 2	$600,000	$2,500,000	$3,100,000
Alternative 3	$1,700,000	$2,500,000	$4,200,000
Alternative 4	$49,800,000	$1,200,000	$51,000,000

Note:
* = Estimated present worth of O&M cost is over an assumed 30-year period.

6.3 Comparative Analysis Summary

Table 6-3 provides a summary of the remedial alternatives abilities to meet the RAOs as well as their relative short-term impacts and estimated cost.

Table 6-3
Comparative Analysis Summary

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Soil RAOs				
1. Prevent, to the extent practicable, ingestion or direct contact with MGP-related NAPL, PAHs, or BTEX at concentrations greater than the Site-specific background concentrations.	No	Yes	Yes	Yes
2. Prevent, to the extent practicable, inhalation exposure to COCs volatilizing from subsurface soil containing MGP-residual volatile compounds (such as BTEX).	No	Yes	Yes	Yes
3. Prevent migration of COCs that would result in soils or groundwater exceeding SCGs	No	Limited	Limited	Yes
Groundwater RAOs				
1. Prevent ingestion of groundwater containing MGP-related COCs at concentrations exceeding NYSDEC SCGs, to the extent practicable.	No	Yes	Yes	Yes
2. Prevent contact with, or inhalation of, volatiles from groundwater containing MGP-related COCs at concentrations exceeding NYSDEC SCGs, to the extent practicable.	No	Yes	Yes	Yes
3. Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.	No	No	No	No
4. Remove the source of COCs to groundwater, to the extent practicable.	No	Limited	Limited	Limited
Disruption to Community?	None	Low	Low - Moderate	High
Length of Disruption?	None	1 Month	4 Months	18 Months
Total Cost	$0	$3,100,000	$4,200,000	$51,0000

7 Preferred Remedial Alternative

7.1 General

The results of the comparative analysis were used as a basis for recommending a remedial alternative for the Site. The components of the preferred remedial alternative for the Site are presented below.

7.2 Summary of Preferred Remedial Alternative

Based on the comparative analysis of the remedial alternatives presented in Section 6, Alternative 2 is the preferred remedial alternative for the Site. This alternative would cost-effectively achieve the best balance of the NYSDEC evaluation criteria. The preferred remedial alternative reduces the potential for exposure to impacted media in the area most likely to be accessed to conduct future subsurface work.

As described in Section 5, the following is a summary of the primary components of the preferred remedial alternative:

- Installation of a DNAPL collection system (assumed to be passive collection wells for the purposes of this AAR) to facilitate recovery of potentially mobile DNAPL
- Establishing ICs in the form of deed restrictions, environmental easements, and public health advisories to inform and/or control intrusive (i.e., subsurface) activities that could result in potential exposures to subsurface soil and groundwater containing MGP-related impacts at concentrations greater than applicable standards and guidance values
- Maintaining existing surface covers
- Preparing an SMP to document the following information:
  - The ICs that have been established and will be maintained for the Site
  - Requirements for notifications of the presence of MGP-related impacts in soil and groundwater that would be provided to those requesting utility clearance for intrusive activities at the Site
  - Requirements for notifications if the existing surface cover system will be disturbed
  - Known locations of soil containing COCs at concentrations greater than 6 NYCRR Part 375-6 for commercial SCOs
  - Protocols (including health and safety requirements) for conducting invasive (i.e., subsurface) activities and managing potentially impacted material encountered during these activities
  - Protocols and requirements for conducting DNAPL monitoring and recovery, Site inspections, and groundwater monitoring
  - Protocols for addressing significant changes in COC concentrations in groundwater based on the results of the annual monitoring activities
  - Requirements for future investigation activities if the Site buildings are demolished

DNAPL recovery combined with ICs and maintaining the surface covers on-Site are the primary components of the preferred alternative. Each of these technologies and processes has been successfully implemented at other MGP sites and are considered technically and administratively implementable.

Implementation challenges associated with Alternative 2 would primarily be related to installing and maintaining DNAPL recovery wells, on property not owned by Con Edison. Given the active business at the Site, there is little available space for material handling and staging during DNAPL recovery well installation or operations. These challenges would be addressed during the remedial design of the alternative and the negotiation of access agreements by Con Edison.

Potential short-term impacts to the surrounding community and Site occupants would include potential exposures to soil and groundwater containing MGP-related COCs during DNAPL recovery well installation, material handling, and off-Site transportation activities. The potential for exposures would be minimized through the use of appropriate field personnel, PPE, and by conducting work activities and air monitoring in accordance with a Site-specific HASP and CAMP that would be prepared as part of the remedial design.

Alternative 2 would be protective of human health and the environment and effective over the long-term. Alternative 2 would prevent exposures (i.e., direct contact, ingestion, and inhalation) to MGP-related impacts in subsurface soil and groundwater through the implementation of ICs and maintenance of existing surface covers. In addition, should the Site be redeveloped in the future, the SMP will include provisions for additional investigation and remediation activities once subsurface soils are more readily accessible.

Alternative 2 is less disruptive to the surrounding community. Soil containing visual MGP-related impacts is encountered at depths greater than 10 feet below grade. The Site is covered with asphalt pavement, concrete, buildings, and vegetated soil. Site workers, patrons, and nearby residents do not routinely conduct activities that would potentially result in exposure to impacted Site media. Potential future exposures to impacted Site media (as a result of intrusive subsurface activities) would be addressed through ICs and the SMP that would be prepared as part of Alternative 3.

7.3 Estimated Cost of Preferred Remedial Alternative

The total estimated cost associated with implementation of the preferred remedial alternative is summarized in **Table 7-1**.

Table 7-1
Cost Estimate for Alternative 2

Alternative	Estimated Capital Cost	Estimated Present Worth of O&M Cost*	Total Estimated Cost
Alternative 2 – NAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring and Institutional Controls	$600,000	$2,500,000	$3,100,000

Note:
* = Estimated present worth of O&M cost is over an assumed 30-year period.

8 References

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Tables

Table 2-1
Potential Chemical-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Federal				
National Primary Drinking Water Standards	40 CFR Part 141	S	Establishes maximum contaminant levels (MCLs), which are health-based standards for public water supply systems.	These standards are potentially applicable if an action involves future use of ground water as a public supply source.
RCRA–Hazardous Waste Characterization	40 CFR Part 261	S	Specifies the regulated levels for Toxic Characteristics Leaching Procedure (TCLP) Constituents for identification of hazardous wastes that exhibit the characteristic of toxicity.	Waste materials generated during remedial activities may be sampled and analyzed for TCLP constituents prior to disposal to determine if the materials are hazardous based on the characteristic of toxicity.
Universal Treatment Standards/Land Disposal Restrictions (UTS/LDRs)	40 CFR Part 268	S	Identifies hazardous wastes for which land disposal is restricted and provides a set of numerical constituent concentration criteria at which hazardous waste is restricted from land disposal (without treatment).	Applicable if waste is determined to be hazardous and for remedial alternatives involving off-site land disposal.
New York State				
New York State (NYS) Environmental Conservation Law and Associated Regulations	Title 6 of the New York Code of Rules and Regulations (NYCRR) Part 375-6 (6 NYCRR Part 375-6)	S	Provides soil cleanup objectives for remedial programs.	These values are to be considered as appropriate in evaluating soil quality.
NYS Department of Environmental Conservation (NYSDEC) Guidance on the Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants (MGPs)	Technical and Administrative Guidance Memorandum (TAGM) 4061	G	Outlines the criteria for conditionally excluding coal tar waste and impacted soil from former MGPs that exhibit the hazardous characteristic of toxicity for benzene (D018) from the hazardous waste requirements of 6 NYCRR Parts 370-374 and 376 when destined for thermal treatment.	This guidance will be used as appropriate in the management of MGP-impacted soil and coal tar waste generated during the remedial activities.

Table 2-1
Potential Chemical-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
NYSDEC Ambient Water Quality Standards and Guidance Values	Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 (6/98)	G	Provides a compilation of ambient water quality standards and guidance values for toxic and non-conventional pollutants for use in the NYSDEC programs.	These standards are to be considered in evaluating groundwater and surface water quality.
NYSDEC Soil Cleanup Guidance	CP-51	G	Provides the framework and policies for the selection of soil cleanup levels.	Guidance would be used to develop site-specific soil cleanup objectives (SCOs).
NYSDEC Ambient Water Quality Standards and Guidance Values	Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 (6/98)	S	Provides a compilation of ambient water quality standards and guidance values for toxic and non-conventional pollutants for use in the NYSDEC programs.	These standards are to be considered in evaluating groundwater and surface water quality.
Identification and Listing of Hazardous Wastes	6 NYCRR 371	S	Provides hazardous waste determinations.	Waste materials generated during remedial activities may be sampled and analyzed for TCLP constituents prior to disposal to determine if the materials are hazardous based on the characteristic of toxicity.
Land Disposal Restrictions	6 NYCRR 376	S	Identifies hazardous waste restricted from land disposal and defines land disposal.	Applicable if waste is determined to be hazardous and for remedial alternatives involving off-site land disposal.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Federal				
Occupational Safety and Health Act (OSHA) –General Industry Standards	29 Code of Federal Regulations (CFR) Part 1910	S	Specifies the 8-hour time-weighted average concentration for worker exposure to various compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1910.120.	Proper respiratory equipment will be worn if it is not possible to maintain the work atmosphere below required concentrations. Appropriate training requirements will be met for remedial workers.
OSHA–Safety and Health Standards	29 CFR Part 1926	S	Specifies the type of safety equipment and procedures to be followed during site remediation.	Appropriate safety equipment will be on-site and appropriate procedures will be followed during remedial activities.
OSHA–Recordkeeping, Reporting and Related Regulations	29 CFR Part 1904	S	Outlines recordkeeping and reporting requirements for an employer under OSHA.	These regulations apply to the company(s) contracted to install, operate, and maintain remedial actions at hazardous waste sites.
RCRA–Preparedness and Prevention	40 CFR Part 264.30-264.31	S	Outlines requirements for safety equipment and spill control when treating, handling, and/or storing hazardous wastes.	Safety and communication equipment will be installed at the site as necessary. Local authorities will be familiarized with the site.
RCRA–Contingency Plan and Emergency Procedures	40 CFR Part 264.50-264.56	S	Provides requirements for outlining emergency procedures to be used following explosions, fires, etc. when storing hazardous wastes.	Plans will be developed and implemented during remedial design. Copies of the plan will be kept on- site.
CWA–Discharge to Waters of the U.S. and Section 404	40 CFR Parts 403, and 230 Section 404 (b) (1); 33 USC 1344	S	Establishes site-specific pollutant limitations and performance standards that are designed to protect surface water quality. Types of discharges regulated under CWA include: indirect discharge to a Publicly Operated Treatment Work (POTW), and discharge of dredged or fill material into U.S. waters.	Does not appear to be applicable as no surface water is in the vicinity of the site.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
CWA Section 401	33 U.S. Code (USC) 1341	S	Requires that CWA 401 Water Quality Certification permit be provided to federal permitting agency (U.S. Army Corps of Engineers) for any activity including, the construction or operation of facilities that may result in any discharge into jurisdictional waters of the U.S. and/or state.	Does not appear to be applicable because no surface water is in the vicinity of the site.
90-Day Accumulation Rule for Hazardous Waste	40 CFR Part 262.34	S	Allows generators of hazardous waste to store and treat hazardous waste at the generation site for up to 90 days in tanks, containers, and containment buildings without having to obtain a RCRA hazardous waste permit.	Potentially applicable to remedial alternatives that involve the storing or treating of hazardous materials on site.
Rivers and Harbors Act, Sections 9 & 10	33 USC 401 and 403; 33 CFR Parts 320-330	S	Prohibits unauthorized obstruction or alteration of navigable waters of the U.S. (dredging, fill, cofferdams, piers, etc.). Requirements for permits affecting navigable waters of the U.S.	Does not appear to be applicable because no rivers or harbors are in the vicinity of the site.
Land Disposal Facility Notice in Deed	40 CFR Parts 264 and 265 Sections 116-119(b)(1)	S	Establishes provisions for a deed notation for closed hazardous waste disposal units, to prevent land disturbance by future owners.	The regulations are potentially applicable because Site areas with MGP materials left in place may be similar to closed RCRA units.
RCRA–General Standards	40 CFR Part 264.111	S	Provides general performance standards requiring minimization of need for further maintenance and control; minimization or elimination of post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products. Also requires	Decontamination actions and facilities will be constructed for remedial activities and disassembled after completion.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
			decontamination or disposal of contaminated equipment, structures, and soils.	
Standards Applicable to Transporters of Applicable Hazardous Waste– Resource Conservation and Recovery Act (RCRA) Section 3003	40 CFR Parts 170-179, 262, and 263	S	Establishes the responsibility of off-site transporters of hazardous waste in the handling, transportation and management of the waste. Requires manifesting, recordkeeping, and immediate action in the event of a discharge.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.
U.S. Department of Transportation (USDOT) Rules for Transportation of Hazardous Materials	49 CFR Parts 107 and 171.1-172.558	S	Outlines procedures for the packaging, labeling, manifesting, and transporting of hazardous materials.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.
Clean Air Act-National Ambient Air Quality Standards	40 CFR Part 60	S	Establishes ambient air quality standards for protection of public health.	Remedial operations will be performed in a manner that minimizes the production of benzene and particulate matter.
U.S. Environmental Protection Agency (USEPA)-Administered Permit Program: The Hazardous Waste Permit Program	RCRA Section 3005; 40 CFR Part 270.124	S	Covers the basic permitting, application, monitoring, and reporting requirements for off-site hazardous waste management facilities.	Any off-site facility accepting hazardous waste from the site must be properly permitted. Implementation of the site remedy will include consideration of these requirements.
Land Disposal Restrictions (LDRs)	40 CFR Part 368	S	Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes Universal Treatment Standards (UTSs) to which hazardous waste must be treated prior to land disposal.	Excavated soils that display the characteristic of hazardous waste or that are decharacterized after generation must be treated to 90% constituent concentration reduction capped at 10 times the UTS.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
RCRA Subtitle C	40 USC Section 6901 et seq.; 40 CFR Part 268	S	Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes UTSs to which hazardous wastes must be treated prior to land disposal.	Potentially applicable to remedial activities that include the disposal of soil from the site.
New York State				
Use and Protection of Waters Program	6 New York Codes Rules and Regulations (NYCRR) Part 608	S	Provides protection of waters permit program regulates: 1) any disturbance of the bed or banks of a protected stream or water course; 2) construction and maintenance of dams; and 3) excavation or fill in navigable waters of the State.	Does not appear to be applicable because no surface water is in the vicinity of the site.
Discharges to Public Waters	New York State Environmental Conservation (NYSDEC) Law, Section 71-3503	S	Provides that a person who deposits gas tar, or the refuse of a gas house or gas factory, or offal, refuse, or any other noxious, offensive, or poisonous substances into any public waters, or into any sewer or stream running or entering into such public waters, is guilty of a misdemeanor.	During the remedial activities, MGP-impacted materials will not be deposited into public waters or sewers.
New York Hazardous Waste Management System–General	6 NYCRR Part 370	S	Provides definitions of terms and general instructions for the Part 370 series of hazardous waste management.	Hazardous waste is to be managed according to this regulation.
Identification and Listing of Hazardous Wastes	6 NYCRR Part 371	S	Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 6 NYCRR Parts 371-376.	Applicable for determining if soil generated during implementation of remedial activities are hazardous wastes. These regulations do not set cleanup standards, but they are considered when developing remedial alternatives.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities	6 NYCRR Part 372	S	Provides guidelines relating to the use of the manifest system and its recordkeeping requirements. Applies to generators, transporters, and facilities in New York State.	This regulation will be applicable to any company(s) contracted to do treatment work at the site or to transport or manage hazardous material generated at the site.
New York Regulations for Transportation of Hazardous Waste	6 NYCRR Part 372.3 a-d	S	Outlines procedures for the packaging, labeling, manifesting, and transporting of hazardous waste.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.
Waste Transporter Permits	6 NYCRR Part 364	S	Governs the collection, transport, and delivery of regulated waste within New York State.	Properly permitted haulers will be used if any waste materials are transported off site.
NYSDEC Technical and Administrative Guidance Memorandums (TAGMs)	NYSDEC TAGMs	G	Provides guidance that is to be considered during the remedial process.	Appropriate TAGMs will be considered during the remedial process.
New York Regulations for Hazardous Waste Management Facilities	6 NYCRR Part 373.1.1-373.1.8	S	Provides requirements and procedures for obtaining a permit to operate a hazardous waste treatment, storage, and disposal facility. Also lists contents and conditions of permits.	Any off-site facility accepting waste from the site must be properly permitted.
Management of Soil and Sediment Contaminated with Coal Tar from Former Manufactured Gas Plants (MGPs)	NYSDEC Program Policy	G	Provides guidance to facilitate the permanent treatment of soil contaminated with coal tar from the sites of former MGPs.	Policy will be considered for D018 hazardous and non-hazardous soil removed during removal activities.
Land Disposal of a Hazardous Waste	6 NYCRR Part 376	S	Restricts land disposal of hazardous wastes that exceed specific criteria.	New York defers to USEPA for UTS/LDR regulations.

Table 2-2
Potential Action-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
NYSDEC Guidance on the Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants	TAGM 4061(2002)	G	Outlines the criteria for conditionally excluding coal tar waste and impacted soils from former MGPs that exhibit the hazardous characteristic of toxicity for benzene (D018) from the hazardous waste requirements of 6 NYCRR Parts 370-374 and 376 when destined for thermal treatment.	This guidance will be used as appropriate in the management of MGP-impacted soil and coal tar waste generated during the remedial activities.
National Pollutant Discharge Elimination System (NPDES) Program Requirements, Administered Under New York State Pollution Discharge Elimination System (SPDES)	40 CFR Parts 122 Subpart B, 125, 301, 303, and 307 (Administered under 6 NYCRR 750-758)	S	Establishes permitting requirements for point source discharges. Regulates discharge of water into navigable waters, including the quantity and quality of discharge.	Does not appear to be applicable because no navigable water is in the vicinity of the site.

Table 2-3
Potential Location-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Federal				
National Environmental Policy Act Executive Orders 11988 and 11990	40 Code of Federal Regulations (CFR) 6.302; 40 CFR Part 6, Appendix A	S	Requires federal agencies, where possible, to avoid or minimize adverse impact of federal actions upon wetlands/floodplains and enhance natural values of such. Establishes the "no-net-loss" of waters/wetland area and/or function policy.	To be considered if remedial activities are conducted within the floodplain or wetlands. Does not appear to be applicable because no surface water or wetlands are located near the site.
Clean Water Act (CWA) Section 404	33 U.S. Code (USC) 1344, Section 404; 33 CFR Parts 320-330; 40 CFR Part 230	S	Ensures discharges of dredge or fill materials into waters of the U.S., including wetlands, are regulated by the USACE.	Does not appear to be applicable because no surface water or wetlands are in the vicinity of the site.
Fish and Wildlife Coordination Act	16 USC 661; 40 CFR 6.302	S	Ensures actions must be taken to protect fish or wildlife when diverting, channeling or otherwise modifying a stream or river.	Does not appear to be applicable because no streams or rivers are in the vicinity of the site.
Historical and Archaeological Data Preservation Act	16 USC 469a-1	S	Provides for the preservation of historical and archaeological data that might otherwise be lost as the result of alteration of the terrain.	The National Register of Historic Places website indicated no records present for historical sites in the immediate vicinity of the site.
National Historic and Historical Preservation Act	16 USC 470; 36 CFR Part 65; 36 CFR Part 800	S	Provides requirements for the preservation of historic properties.	The National Register of Historic Places website indicated no records present for historical sites in the immediate vicinity of the manufactured gas plant (MGP) site.
Rivers and Harbors Act	33 USC 401/403	S	Prohibits unauthorized obstruction or alteration of navigable waters of the U.S. (dredging, fill, cofferdams, piers, etc.). Requirement for permits affecting navigable waters of the U.S.	Does not appear to be applicable because no navigable water is in the vicinity of the site.

Table 2-3
Potential Location-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Hazardous Waste Facility Located on a Floodplain	40 CFR Part 264.18(b)	S	Requirements for a treatment, storage, and disposal (TSD) facility built within a 100-year floodplain.	Hazardous waste TSD activities (if any) will be designed to comply with applicable requirements cited in this regulation.
New York State				
New York State Floodplain Management Development Permits	6 New York Codes Rules and Regulations (NYCRR) Part 500	S	Provides conditions necessitating NYSDEC permits and provides definitions and procedures for activities conducted within floodplains.	Does not appear to be applicable because the site is not located within a 100-year floodplain.
New York State Freshwater Wetlands Act	Environmental Conservation Law Articles 24 and 71; 6 NYCRR Parts 662-665	S	Ensures activities in wetlands areas are conducted to preserve and protect wetlands.	Does not appear to be applicable because the site is not located in a wetlands area.
New York State Parks, Recreation, and Historic Preservation Law	New York Executive Law Article 14;	S	Provides requirements for the preservation of historic properties.	The National Register of Historic Places website indicated no records present for historical sites in the immediate vicinity of the MGP site.
Use and Protection of Waters Program	6 NYCRR Part 608	S	Provides protection of waters permit program regulates: 1) any disturbance of the bed or banks of a protected stream or water course; 2) construction and maintenance of dams; and 3) excavation or fill in navigable waters of the state.	Does not appear to be applicable because no surface water is in the vicinity of the site.
Endangered & Threatened Species of Fish and Wildlife	6 NYCRR Part 182	S	Identifies endangered and threatened species of fish and wildlife in New York.	Does not appear to be applicable because no endangered species were identified during the Fish and Wildlife Resource Impact Analysis.

Table 2-3
Potential Location-Specific SCGs

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
New York Preservation of Historic Structures or Artifacts	New York State Historic Preservation Act, Section 14.09	S	Provides requirements for preservation of historical/ archeological artifacts.	The National Register of Historic Places website indicated no records present for historical sites in the immediate vicinity of the MGP site.
Floodplain Management Criteria for State Projects	6 NYCRR Part 502	S	Establishes floodplain management practices for projects involving state-owned and state-financed facilities.	Does not appear to be applicable because the site is not located within a 100-year floodplain.
Local				
Local Building Permits	N/A	S	States that local authorities may require a building permit for any permanent or semi-permanent structure, such as an on-site water treatment system building or a retaining wall.	Substantive provisions are potentially applicable to remedial activities that require construction of permanent or semi-permanent structures.
Local water usage permits	N/A	S	States that local authorities may require a permit for the connection to a public potable water supply.	Permits or other local approvals may be required to access the public water supply for use in select remedial activities (such as in situ solidification and stabilization).

Table 4-1
Summary of Soil Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria			Retained for Further Analysis?
				Implementability	Effectiveness	Relative Cost	
No Action	No Action	No Action	**No Action**–No remedial activities would be completed to address site-related impacts. The "No Action" alternative serves as the baseline for comparison of the overall effectiveness of the other remedial alternatives.	Implementable. Because this alternative does not require implementation of any remedial activities, the alternative is technically and administratively implementable.	Not effective. This alternative does not address toxicity, mobility, or volume of manufactured gas plant (MGP)-related soil impacts and would not meet the Remedial Action Objectives (RAOs) established for the site.	Low	Yes
Institutional Controls	Institutional Controls	Governmental Controls, Proprietary Controls, Enforcement and Permit Controls	**Institutional Controls (ICs)**–This alternative would include deed restrictions, environmental land use restrictions, enforcement and permit controls, and annual monitoring of site conditions. ICs would be summarized in a Site Management Plan and would be used to limit permissible future site uses, as well as establish health and safety requirements to be followed during subsurface activities that could result in construction worker exposure to impacted soil.	Implementable. Requires negotiation and agreement with the property owner, site occupants and municipality.	Effective. This alternative can achieve RAOs when implemented in combination with other technology types.	Low	Yes
Engineering Controls	Surface Controls	Maintain Existing Surface Cover Materials	**Maintain Surface Covers**–The existing surface cover would be maintained to achieve the RAO of providing continued protection against potential exposure to subsurface soils containing constituents of concern (COCs).	Easily implementable. Resources to maintain the existing surface covers are readily available.	Current and future use of site is anticipated to be for parking or high-traffic storage area; therefore, considered effective when combined with other technology types such as ICs.	Low	Yes
In Situ Containment/ Controls	Capping	Clay/Soil Cap/Multi-Media Cap	Placing and compacting clay material or soil material over impacted soil. Multi-media cap variation includes application of a combination of clay/soils and synthetic membrane(s) over impacted soil.	Not Readily Implementable. Equipment and materials necessary to construct the cap are readily available. However, existing site usage includes high traffic areas and movement of vehicles, which would impede installation and maintenance, and could substantially disrupt current operations.	May reduce the mobility of COCs by reducing infiltration, however enhanced effectiveness (as compared with existing surface covers) is unlikely. Would not reduce toxicity or volume of impacts or prevent off-site migration of nonaqueous phase liquids (NAPLs). Current and future use of site is a parking lot or high- traffic storage area; therefore, long-term effectiveness is diminished.	Moderate capital and operation and maintenance (O&M) costs	No
		Asphalt/Concrete Cap	Application of a layer of asphalt or concrete over impacted soils.	Implementable. Equipment and materials necessary to construct the cap are readily available. However, existing site usage includes high traffic areas and movement of vehicles, which would impede installation and could substantially disrupt current operations.		Moderate capital and O&M costs	No
	Containment	Sheetpile	Steel sheetpiles are driven into the subsurface to contain impacted soils and NAPLs. The sheetpile wall is typically keyed into a confining unit and could be permeable or impermeable to groundwater flow.	Implementable. Equipment and materials necessary to install sheetpile walls are readily available. Presence of subsurface utilities and historic fill materials would hinder technology use and may require pre-drilling or pre-trenching to install. Sheetpiles would be not be installed through the weathered bedrock layer or into the bedrock layer. Installation would substantially disrupt current site businesses (including potentially temporary closure of the on-site businesses, closure of Cedar Street, as well as rerouting of subsurface utilities).	Because the potential for NAPL migration would not be addressed within the weathered bedrock or bedrock zones, this technology option would not achieve the Soil RAO for Environmental Protection. Presence of upward hydraulic gradients at the site could result in impacted groundwater and or NAPL upwelling into subsurface structures, which would not achieve the Soil RAO for Protection of Human Health.	High capital and O&M costs	No

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-1
Summary of Soil Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria			Retained for Further Analysis?
				Implementability	Effectiveness	Relative Cost	
In Situ Containment/ Controls (Continued)	Containment (Continued)	Slurry Walls	Involves excavating a trench and adding a slurry (e.g., soil/cement-bentonite mixture) to control migration of subsurface soils, groundwater, and NAPL from an area. Slurry walls are typically keyed into a low-permeability unit (e.g., an underlying silt/clay layer).	Potentially implementable. Underground utilities and historic fill material would hinder installation. While this technology could be installed through the weathered bedrock and bedrock, the equipment capable of penetrating into the bedrock layer are not readily available. Based on the size of the equipment as well as the support equipment (grout mix plant, water supply, filtration equipment), implementation of this remedy would likely require temporary shut down of the site businesses, temporary closure of Cedar Street, and relocation of the subsurface utilities.	Because the potential for NAPL migration would not be addressed within the weathered bedrock or bedrock zones, this technology option would not achieve the Soil RAO for Environmental Protection. Presence of upward hydraulic gradients at the site could result in impacted groundwater and or NAPL upwelling into subsurface structures, which would not achieve the Soil RAO for Protection of Human Health.	High capital and O&M costs	No
In Situ Treatment	Immobilization	Solidification/Stabilization	Addition of material to the impacted soil that limits the solubility or mobility of COCs and NAPL present within treated area. Involves treating soil to produce a stable, non-leachable material that physically or chemically locks the constituents within the solidified matrix.	Potentially implementable. Solidification/ stabilization materials are readily available. Underground structures would hinder technology use. Technology may alter groundwater patterns and affect current conditions of the dissolved plume and NAPL migration. Would not be implementable across the entire Site but could be implemented in targeted locations.	Overall effectiveness of this process would need to be evaluated during a bench-scale treatability study. Underground structures and obstructions would need to be removed. Would not be effective in addressing COCs or NAPL within weathered bedrock or bedrock zones. May be effective when combined with other technology types	Moderate capital and low O&M costs	Yes
	Chemical Treatment	Chemical Oxidation	Oxidizing agents are added to oxidize and reduce the mass of organic constituents. In situ chemical oxidation involves the introduction of chemicals such as ozone, hydrogen peroxide, magnesium peroxide, sodium persulfate, or potassium permanganate. A pilot study would be required to evaluate/determine oxidant application requirements. Large amounts of oxidizing agents would be needed to oxidize NAPL.	Implementable. Equipment and materials necessary to inject/apply oxidizing agents are readily available. May require special provisions for storage of process chemicals and long-term access to inject oxidant which could impede business operations at the Site.	Not effective for addressing NAPL within the overburden soils, or for addressing COCs or NAPL within weather bedrock or bedrock layers. Would require multiple treatments of chemicals to reduce constituents. May not be a cost-effective means to achieve the RAOs. Time requirements may not be acceptable for site owner.	High capital and O&M costs	No
	Biological Treatment	Biodegradation	Natural biological and physical processes that, under favorable conditions, act without human intervention to reduce the mass, volume, concentration, toxicity, and/or mobility of COCs. This process relies on long-term monitoring to demonstrate the reduction of impacts.	Implementable. Would require long-time access to monitoring wells.	Less effective for heavier, more condensed PAHs and not effective for NAPLs. Would not achieve RAOs in an acceptable timeframe.	Low Capital and Moderate O&M costs	No
		Enhanced Biodegradation	Addition of amendments (e.g., oxygen, nutrients) and controls to the subsurface to enhance indigenous microbial populations to improve the rate of natural degradation.	Implementable. Equipment and materials necessary to inject amendments are readily available. Requires long-term access to injection points.	Less effective for heavier, more condensed PAHs. Not effective for addressing NAPL within the overburden soils, or for addressing COCs or NAPL within weather bedrock or bedrock layers.	Low Capital and Moderate O&M costs	No

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-1
Summary of Soil Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria			Retained for Further Analysis?
				Implementability	Effectiveness	Relative Cost	
In Situ Treatment (Continued)	Biological Treatment (Continued)	Biosparging	Air/oxygen injection wells are installed within the impacted regions to enhance biodegradation of constituents by increasing oxygen availability. Low-flow injection technology may be incorporated. This technology requires long-term monitoring.	Implementable. Equipment capable of installing wells is readily available. Would require use of compressed air/oxygen or installation of a compressor to provide continuous air/oxygen supply. Access to areas that would require injection wells for this process option to be effective is limited as is space for locating air/oxygen canisters or a compressor.	Not effective for addressing NAPL within the overburden soils, or for addressing COCs or NAPL within weather bedrock or bedrock layers. Could help to reduce toxicity, mobility, and volume of dissolved constituents when combined with other process options. Would likely require many years or decades of treatment.	Low Capital and Moderate O&M costs	No
Removal	Excavation	Excavation	Physical removal of impacted soil. Typical excavation equipment would include backhoes, loaders, and/or dozers. Temporary structures and extraction wells may be used to lower the groundwater to create "dry" areas to allow use of typical excavation equipment to physically remove soil.	Implementable. Equipment capable of excavating the soil is readily available.	Proven process for effectively removing impacted soil.	High capital cost and low O&M costs	Yes
On-Site Ex Situ Treatment	Immobilization	Solidification/Stabilization	Addition of material to the removed soil that limits the solubility or mobility of the COCs present. Involves treating soil to produce a stable, non-leachable material that physically or chemically locks the constituents within the solidified matrix. May also include addition of amendments (e.g., Portland cement) to remove free liquids from excavated soils,	Implementable. Solidification/stabilization materials are readily available. On-site space to perform treatment technology is limited and would impede existing business operations at the site.	Proven process for effectively reducing mobility and toxicity of organic and select inorganic constituents. Overall effectiveness of this process would need to be evaluated during a bench-scale treatability study. Timeline requirements associated with on-site treatment may not be feasible. While not retained as a standalone treatment method, this method may be used in combination with soil removal alternatives to address free liquids prior to off-site transport for off-site treatment and or disposal.	Moderate capital and O&M costs	Yes
	Extraction	Low-Temperature Thermal Desorption (LTTD)	Process by which soils containing organics with boiling point temperatures less than 800° Fahrenheit are excavated, conditioned, and heated. The organic compounds are desorbed from the soils into an induced airflow. The resulting gas is treated either by condensation and filtration or by thermal destruction. Treated soils are returned to the subsurface as fill.	Implementable. Treatment facilities are available. Space to perform treatment technology is limited and could impede existing business operations at the Site. Permitting for a temporary treatment system would pose additional implementability challenge. Unlikely that the surrounding community would accept operation of a LTTD facility at the Site.	Proven process for effectively addressing organic constituents. The efficiency of the system and rate of removal of organic constituents would require evaluation during bench-scale and/or pilot-scale testing. Timeline requirements associated with on-site treatment may limit feasibility of process. This treatment method would not address the presence of inorganics within the excavated materials and is assumed to not meet on-site reuse criteria.	High capital and O&M costs	No

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-1
Summary of Soil Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria			Retained for Further Analysis?
				Implementability	Effectiveness	Relative Cost	
Off-Site Treatment and/or Disposal	Extraction	Low-Temperature Thermal Desorption	Process by which soils containing organics with boiling point temperatures less than 800° Fahrenheit are heated, and the organic compounds are desorbed from the soils into an induced airflow. The resulting gas is treated either by condensation and filtration or by thermal destruction.	Implementable. Treatment facilities are available.	Proven process for effectively addressing organic constituents.	Moderate capital costs	Yes
	Disposal	Solid Waste Landfill	Disposal of impacted soil in an existing permitted non-hazardous waste landfill.	Implementable. Non-hazardous waste landfill facilities are available.	Proven process that can effectively achieve the RAOs for non-hazardous solid waste.	Moderate capital costs	Yes
	Disposal	Resource Conservation and Recovery Act (RCRA) Landfill	Disposal of impacted soil in an existing RCRA-permitted landfill facility.	Implementable.	Proven process that can effectively achieve the RAOs for hazardous waste.	Moderate to high capital costs	Yes

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-2
Summary of Groundwater Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria		Relative Cost	Retained for Further Analysis?
				Implementability	Effectiveness		
No Action	No Action	No Action	This alternative would not include any active remedial action. A No Action alternative serves as a baseline for comparison of the overall effectiveness of other remedial alternatives. Consideration of a No Action alternative is required by the National Contingency Plan and U.S. Environmental Protection Agency.	Implementable. Because this alternative does not require implementation of any remedial activities, the alternative is technically and administratively implementable.	Not effective. This alternative does not address toxicity, mobility, or volume of manufactured gas plant (MGP)-related groundwater impacts and would not meet the Remedial Action Objectives (RAOs) established for the site.	Low	Yes
Institutional Controls	Institutional Controls	Governmental Controls, Proprietary Controls, Environmental Notices, Enforcement and Permit Controls	Institutional controls would include legal and/or administrative controls that mitigate the potential for exposure to impacted materials and/or jeopardize the integrity of an installed remedy. Examples of potential institutional controls include creating environmental notices, establishing land use restrictions, health and safety requirements for subsurface activities, and restrictions on groundwater use and/or extraction.	Implementable. Requires negotiation and agreement with the property owner and municipality.	Effective. This alternative can achieve RAOs when implemented in combination with other technology options.	Low	Yes
In Situ Treatment	Biological Treatment	Monitored Natural Attenuation (MNA)	MNA would include natural biological, chemical, and physical processes that, under favorable conditions, act without human intervention to reduce the mass, volume, concentration, toxicity, and mobility of chemical constituents. This process relies on long-term monitoring to demonstrate the reduction of impacts caused by chemical constituents.	Easily implemented. Would require long-term access to monitoring wells to demonstrate reduction of impacts.	Limited effectiveness. The presence of dense nonaqueous phase liquid (DNAPL) would continue to generate dissolved phase constituents of concern (COCs) for an extended period.	Low capital and operation and maintenance (O&M) costs	Yes
		Oxygen Enhancement	This option involves addition of amendments (e.g., nutrients, oxygen) to the subsurface to enhance indigenous microbial populations to improve the rate of natural biodegradation.	Implementable. Would require long-term monitoring and repeated addition of amendments, which may impede current site operations and businesses.	Not effective for addressing source of dissolved phase COCs in groundwater (DNAPL). Could help to reduce toxicity, mobility, and volume of dissolved phase COCs when combined with other process options. Presence of DNAPL within weathered and fractured bedrock would not be treated and would serve as a long-term source of dissolved phase COCs in groundwater.	Low capital and moderate O&M costs	No
		Biosparging	Air/oxygen injection wells are installed within the dissolved plume to enhance biodegradation of COCs by increasing oxygen availability to enhance indigenous microbial populations and improve the rate of natural biodegradation. Low-flow injection technology may be incorporated. This technology requires long-term monitoring.	Implementable. Equipment capable of installing wells is readily available. Would require use of compressed air/oxygen or installation of a compressor to provide continuous air/oxygen supply. Access to areas that would require injection wells for this process option to be effective is limited as is space for locating air/oxygen canisters or a compressor.		Low capital and moderate O&M costs	No
	Chemical Treatment	Chemical Oxidation	Oxidizing agents are added to oxidize and reduce the mass of organic COCs. In situ chemical oxidation involves the introduction of chemicals such as ozone, hydrogen peroxide, magnesium peroxide, sodium persulfate, or potassium permanganate. A bench-scale treatability study would be required to evaluate and estimate the amount of oxidizing agent. Large amounts of oxidizing agents are needed to oxidize DNAPL.	Implementable. Equipment and materials necessary to inject/apply oxidizing agents are readily available. May require special provisions for storage of process chemicals and long-term access to inject oxidant which could impede business operations at the Site.	Not effective for addressing source of dissolved phase COCs in groundwater (DNAPL) unless targeted repeated contact is made with between the oxidant and the DNAPL. Would require several treatments of chemicals over several years to reduce COCs. Presence of DNAPL within weathered and fractured bedrock would not be treated and would serve as a long-term source of dissolved phase COCs in groundwater.	High capital and O&M costs	No

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-2
Summary of Groundwater Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria		Relative Cost	Retained for Further Analysis?
				Implementability	Effectiveness		
In Situ Containment	Hydraulic Containment	Groundwater Extraction Using Recovery Wells	This option provides hydraulic control across a dissolved plume by pumping and treating groundwater and DNAPL from wells and drains. Monitoring wells are also used to determine whether required hydraulic controls have been obtained. This option typically requires extensive design and testing to determine required hydraulic gradients and feasibility of achieving those gradients.	Not implementable as a standalone remedy. Materials and equipment required to install extraction wells are readily available. Access for well installation and space to perform water treatment is limited. May be implemented in connection with a removal remedy to provide groundwater control during soil excavation.	Proven process for effectively containing dissolved groundwater plume; however, plume appears to be stabilized. Access to locations for installation of recovery wells is limited. Would require pumping and treating large quantities of water over long periods of time. Stability of DNAPL plume is unknown; however, hydraulic control unlikely to affect DNAPL migration in weathered or fractured bedrock, therefore may not be effective.	High capital and O&M costs	Yes
	Physical Containment	Sheetpile	Steel sheetpiles are driven into the subsurface to contain to contain and control migration of impacted groundwater and DNAPL from an area. The sheetpile wall is typically keyed into a confining unit and would be designed as impermeable to groundwater flow.	Implementable. Equipment and materials necessary to install sheetpile walls are readily available. Presence of subsurface utilities and historic fill materials would hinder technology use and may require pre-drilling or pre-trenching to install. Sheetpiles would be not be installed through the weathered bedrock layer or into the bedrock layer. Installation would substantially disrupt current site businesses (including potentially temporary closure of the on-site businesses, closure of Cedar Street, as well as rerouting of subsurface utilities.	Because the potential for DNAPL migration or dissolved COC groundwater migration would not be addressed within the weathered bedrock or bedrock zones, this technology option would not achieve the Groundwater RAOs for Environmental Protection. Presence of upward hydraulic gradients at the site could result in impacted groundwater and or DNAPL upwelling into subsurface structures, which would not achieve the Groundwater RAOs for Public Health Protection.	High capital and O&M costs	No
		Slurry Walls	Involves excavating a trench and adding a slurry (e.g., soil/cement-bentonite mixture) to contain and control migration of groundwater, and DNAPL from an area. Slurry walls are typically keyed into a low-permeability unit (e.g., an underlying silt/clay layer).	Potentially implementable. Underground utilities and historic fill material would hinder installation. While this technology could be installed through the weathered bedrock and bedrock, the equipment capable of penetrating into the bedrock layer are not readily available. Based on the size of the equipment as well as the support equipment (grout mix plant, water supply, filtration equipment), implementation of this remedy would likely require temporary shutdown of the site businesses, temporary closure of Cedar Street, and relocation of the subsurface utilities.	Because the potential for DNAPL or dissolved COC groundwater migration would not be addressed within the weathered bedrock or bedrock zones, this technology option would not achieve the Groundwater RAO for Environmental Protection. The presence of upward hydraulic gradients at the site could result in impacted groundwater and or DNAPL upwelling into subsurface structures, which would not achieve the Groundwater RAOs for Public Health Protection.		
Removal	Groundwater and/or DNAPL Extraction	Pump and Treatment using Vertical or Horizontal Wells	Wells are installed to recover groundwater and DNAPL for treatment/disposal.	Not implementable. Would require installation of supporting infrastructure (such as pumps and temporary holding tanks for extracted water and DNAPL). Footprint of extraction system and associated treatment system (discussed below) ongoing operation of an extraction system would substantially impede on-site businesses.	Effective, but inefficient for recovery/treatment of dissolved plume and DNAPL within fractured or weathered bedrock. Presence of upward hydraulic gradients combined with DNAPL in weathered bedrock and bedrock layers would continue to serve a source of dissolved phase COCs to the overburden soils. Access to locations for installation of recovery wells and supporting infrastructure is limited. Would require pumping and treating large quantities of water over long periods of time.	Moderate capital and high O&M costs	No
		Collection Trenches	A zone of higher permeability material is installed within the desired capture area with a perforated collection pipe laterally placed along the base to direct groundwater to a collection area for on-site treatment and/or disposal.				

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 4-2
Summary of Groundwater Remedial Alternatives Retained for Detailed Analysis

General Response Action	Technology Type	Technology Process Option	Description of Option	Evaluation Criteria		Relative Cost	Retained for Further Analysis?
				Implementability	Effectiveness		
Removal (Continued)	Groundwater and/or DNAPL Extraction (Continued)	Passive DNAPL Removal	DNAPL is passively collected in vertical wells and removed.	Implementable. Space to place the vertical wells is limited to areas outside existing structures on-site and outside of public right of ways.	Potentially effective for recovering DNAPL for treatment/disposal. Locations of DNAPL recovery wells would need to be selected to optimize recovery.	Low capital and O&M costs	Yes
Ex Situ On-Site Treatment	Chemical Treatment	Ultraviolet Light/Oxidation	This option involves extraction of groundwater and treatment using oxidation by subjecting groundwater to ultraviolet light and ozone.	Not implementable due to site configuration and use as an active business. Space to store extracted water, perform water treatment and store treated water is limited. Would require a full-time on-site operator to perform the treatment activities. In addition to addressing dissolved phase COCs, the water treatment system would require separation of extracted DNAPL or other oils that may be present in extracted groundwater (and unrelated to the MGP operations). May require special provisions for storage of process chemicals. Solids generated from treatment facility would require off-site disposal.	Proven process for effectively treating organic compounds. Use of this process combined with groundwater removal could achieve RAOs. A bench-scale treatability study may be required to evaluate the efficiency of this process and to make project-specific adjustments to the process. May require special provisions for the storage of process chemicals.	High capital and O&M costs.	No
		Chemical Oxidation	This option involves extraction of groundwater and treatment using oxidizing agents. Oxidizing agents are injected into the groundwater treatment train to oxidize and reduce the mass of dissolved organic COCs. Chemical oxidation involves the introduction of chemicals such as ozone, hydrogen peroxide, magnesium peroxide, sodium persulfate, or potassium permanganate. Large amounts of oxidizing agents are needed to oxidize DNAPL.				
	Physical Treatment	Adsorption	Extracted groundwater is treated for discharge (to a POTW) by carbon adsorption, which is a process that adsorbs organic COCs to the adsorption media as groundwater is passed through the media. Typical media effective for treatment of MGP-related COCs are activated carbon and organoclay.	Not implementable due to site configuration and use as an active business. Space to store extracted water, perform water treatment and store treated water is limited. Would require a full-time on-site operator to perform the treatment activities. In addition to addressing dissolved phase COCs, the water treatment system would require separation of extracted DNAPL or other oils that may be present in extracted groundwater (and unrelated to the MGP operations). May require special provisions for storage of process chemicals. Solids generated from treatment facility would require off-site disposal.	Effective at removing organic COCs. Use of this treatment process may effectively achieve the RAOs when combined with groundwater extraction. While not effective as a standalone remedy, may be used to support a soil removal remedy through treatment of extracted groundwater prior to discharge to a POTW.	Moderate capital and O&M costs	Yes
		Settling and Filtration	Extracted groundwater is treated for discharge using settling and filtration. Settling includes removal of free product through oil-water separation systems and removal of particulates via flocculation. Filtration is a process by which the groundwater is passed through granular media or filtration fabrics to remove suspended solids and associated contaminants by interception and straining within the filter.				
Disposal	Groundwater Disposal	Discharge to a local Publicly Owned Treatment Works (POTW)	Treated water is discharged to a sanitary sewer and treated at a local POTW facility.	Implementable. Equipment and materials necessary to extract, pretreat (if necessary), and discharge the water to the sewer system are readily available. Discharges to the sewer will require a POTW-issued discharge permit. Space to perform water treatment is limited.	Proven process for effectively disposing of groundwater following on-site treatment. Typically requires the least amount of pretreatment because the discharged water will be subjected to additional treatment at the POTW.	Moderate capital costs	Yes

Note: Shading indicates that technology process has not been retained for development of a remedial alternative.

Table 5-1

Cost Estimate for Alternative 2

DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
Capital Costs					
1	Permitting/Access Agreements	1	LS	$25,000	$25,000
2	Mobilization/Demobilization	1	LS	$6,000	$6,000
3	Construct and Remove Decontamination Pad	1	LS	$5,000	$5,000
4	Utility Mark Out and Clearance	3	DAY	$4,000	$12,000
5	Install DNAPL Recovery Wells	200	VLF	$700	$140,000
6	Waste Disposal – Well Installation	1	LS	$45,000	$45,000
7	Site Management Plan	1	LS	$50,000	$50,000
8	Establish Institutional Controls	1	LS	$100,000	$100,000
				Subtotal Capital Cost	$383,000
9				Administration & Engineering (15%)	$57,450
				Construction Management (15%)	$57,450
				Contingency (20%)	$76,600
				Total Capital Cost	$574,500
Operation and Maintenance (O&M) Costs					
10	Annual Permitting/Access Agreements	1	LS	$15,000	$15,000
11	Annual Verification of Institutional Controls	1	LS	$10,000	$10,000
12	Semi-Annual DNAPL Monitoring and Passive Recovery	2	EVENT	$15,000	$30,000
13	Annual Groundwater Monitoring	1	EVENT	$25,000	$25,000
14	Laboratory Analysis of Groundwater Samples	28	EACH	$740	$20,720
15	Waste Disposal	8	DRUM	$750	$6,000
16	Annual Summary Report	1	LS	$30,000	$30,000
				Subtotal O&M Cost	$136,720
				Contingency (20%)	$27,344
				Total Annual O&M Cost	$164,064
17				30-Year Total Present Worth Cost of O&M	$2,522,066
				Total Estimated Cost:	**$3,096,566**
				Rounded To:	**$3,100,000**

Table 5-1
Cost Estimate for Alternative 2
DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Notes:

Cost estimate is based on Anchor QEA past experience and vendor estimates using 2018 dollars.

This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the Site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended.

All costs assume construction field work to be conducted by non-unionized labor.

1. Permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to install new groundwater monitoring wells and new DNAPL collection wells.

2. Mobilization/demobilization cost estimate includes mobilization and demobilization of labor, equipment, and materials necessary to install eight DNAPL collection wells to an average depth of 25 feet below ground surface. Cost estimate is based on driller cost quotation for similar projects in New York State.

3. Construct and remove decontamination pad cost estimate includes labor, equipment, and materials necessary to construct, maintain, and remove a decontamination pad and appurtenances for decontamination of drilling equipment during DNAPL recovery well installation.

4. Utility markout and clearance cost estimate includes labor, equipment, and materials necessary to identify, markout, and clear (via hand-digging) any underground utilities at the locations of the new groundwater monitoring and DNAPL recovery wells. Cost assumes that utility location and markout would be conducted by a private utility locating company.

5. Install DNAPL recovery wells cost estimate includes labor, equipment, and materials necessary to install up to eight DNAPL recovery wells in the overburden with a 5-foot-long sump installed into the weathered bedrock zone. Estimate assumes each well (with sump) will be installed as a 6-inch-diameter stainless steel well to an average depth of 25 feet below ground surface. Cost estimate includes oversight by a geologist and a drill rig and crew. Cost estimate assumes no work stoppages during field work due to weather or other potential delays. Cost estimate assumes wells will not be installed within roadways or public sidewalks, and local vehicle traffic patterns will not be affected by well installation activities.

6. Waste disposal - well installation cost estimate includes labor, equipment, and materials necessary to transport and dispose of soil cuttings generated during well installation. Cost assumes all the soil cuttings will be loaded into 55-gallon drums and transported off site daily for treatment/disposal via LTTD. Cost estimate assumes that approximately 64 55-gallon drums of material will be generated during installation of the DNAPL recovery wells. Cost estimate includes collection and laboratory analysis of four waste characterization samples. Cost estimate includes disposal fee; transportation fuel surcharge; and environmental, transportation, and spotting fees.

7. Site management plan cost estimate includes labor necessary to prepare a site management plan to document the institutional controls that have been established and will be maintained for the site as described in Section 5.3.2 of the Alternatives Analysis Report (Anchor QEA 2018).

8. Establish institutional controls cost estimate includes all legal expenses to institute environmental easements and deed restrictions for the Site to control intrusive activities that could result in exposure to impacted soil and groundwater and restrict groundwater use. Institutional controls would also establish requirements for additional investigation activities and/or remedial actions if the Toyota Dealership and/or automotive service shop were demolished or the property/building use changes. Such institutional controls may include governmental controls, proprietary controls, enforcement tools, and/or informational devices.

9. Administration and engineering and construction management costs are based on an assumed 15% of the total capital costs.

10. Annual permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to conduct groundwater monitoring and DNAPL recovery activities.

11. Annual verification of institutional controls cost estimate includes administrative costs for confirming institutional controls are being implemented. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

Table 5-1
Cost Estimate for Alternative 2
DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

12. Semi-annual DNAPL monitoring and passive recovery cost estimate includes labor, equipment, and materials necessary to conduct semi-annual DNAPL monitoring at up to eight wells. Cost estimate includes passive DNAPL recovery via manual bailing or a portable peristaltic pump. Cost estimate assumes two workers will require 1 day to complete monitoring and recovery per event. Estimate includes field vehicle and equipment.
13, Annual groundwater monitoring cost estimate includes labor, equipment, and materials necessary to conduct annual groundwater sampling activities. Cost estimate assumes groundwater samples will be collected from up to 14 groundwater monitoring wells using low-flow sampling procedures. Cost estimate assumes two workers will require 7 days to complete the sampling activities. Estimate includes labor, field vehicle, lodging, subsistence, and equipment rental.
14. Laboratory analysis of groundwater samples cost estimate includes the analysis of groundwater samples for BTEX, PAHs, and cyanide. Estimate assumes laboratory analysis of groundwater samples from up to 22 groundwater monitoring wells and up to six QA/QC samples per sampling event.
15. Waste disposal cost estimate includes off-site disposal of drummed PPE, disposable sampling equipment, purge water, and DNAPL generated/collected during semi-annual DNAPL and annual groundwater monitoring activities.
16. Annual summary report cost estimate includes labor necessary to prepare an annual report summarizing semi-annual DNAPL and annual groundwater monitoring activities and results. Annual report will be submitted to NYSDEC.
17. Present worth is estimated based on a 4% beginning-of-year discount rate (adjusted for inflation). It is assumed that "year zero" is 2018.

BTEX: benzene, toluene, ethylbenzene, and xylenes

DNAPL: dense nonaqueous phase liquid

LS: lump sum

LTTD: low-temperature thermal desorption

MGP: manufactured gas plant

NAPL: nonaqueous phase liquid

NYSDEC: New York State Department of Environmental Conservation

O&M: operation and maintenance

PAH: polycyclic aromatic hydrocarbon

PPE: personal protective equipment

QA/QC: quality assurance/quality control

VLF: vertical linear foot

Table 5-2

Cost Estimate for Alternative 3

In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
Capital Costs					
DNAPL Recovery Wells and ICs					
1	Permitting/Access Agreements	1	LS	$25,000	$25,000
2	Mobilization/Demobilization	1	LS	$6,000	$6,000
3	Construct and Remove Decontamination Pad	1	LS	$5,000	$5,000
4	Utility Mark Out and Clearance	2	DAY	$4,000	$8,000
5	Install DNAPL Recovery Wells	200	VLF	$700	$140,000
6	Waste Disposal – Well Installation	1	LS	$45,000	$45,000
7	Site Management Plan	1	LS	$50,000	$50,000
8	Establish Institutional Controls	1	LS	$100,000	$100,000
In Situ Stabilization of North Gas Holder					
9	Pre-Design Investigation and Treatability Study	1	LS	$50,000	$50,000
10	Permitting/Access Agreements	1	LS	$75,000	$75,000
11	Mobilization/Demobilization of ISS-Related Equipment	1	LS	$125,000	$125,000
12	Temporary Site Fencing	500	LF	$50	$25,000
13	Erosion and Sedimentation Control	1	LS	$15,000	$15,000
14	Construct and Remove Decontamination Pad	1	LS	$15,000	$15,000
15	Utility Mark Out and Clearance	1	DAY	$4,000	$4,000
16	Saw Cut Asphalt	250	LF	$7	$1,750
17	Pre-Excavation to Remove Near-Surface Obstructions	300	CY	$25	$7,500
18	Bucket Mixing within North Gas Holder	1,300	CY	$325	$422,500
19	General Fill	150	CY	$40	$6,000
20	Asphalt	2,000	SF	$7	$14,000
21	Surface Restoration	1,000	SF	$6	$6,000
22	Solid Waste Characterization	5	EACH	$1,200	$6,000
23	Solid Waste Transportation and Disposal - C&D Debris	60	TON	$90	$5,400
24	Solid Waste Transportation and Disposal - LTTD	450	TON	$120	$54,000

Table 5-2

Cost Estimate for Alternative 3

In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
				Subtotal Capital Cost	$1,211,150
25				Administration & Engineering (15%)	$181,673
				Construction Management (15%)	$181,673
				Contingency (20%)	$242,230
				Total Capital Cost	$1,816,725
Operation and Maintenance (O&M) Costs					
26	Annual Permitting/Access Agreements	1	LS	$15,000	$15,000
27	Annual Verification of Institutional Controls	1	LS	$10,000	$10,000
28	Semi-Annual DNAPL Monitoring and Passive Recovery	2	EVENT	$15,000	$30,000
29	Annual Groundwater Monitoring	1	EVENT	$25,000	$25,000
30	Laboratory Analysis of Groundwater Samples	28	EACH	$740	$20,720
31	Waste Disposal	8	DRUM	$750	$6,000
32	Annual Summary Report	1	LS	$30,000	$30,000
				Subtotal O&M Cost	$136,720
				Contingency (20%)	$27,344
				Total Annual O&M Cost	$164,064
33				30-Year Total Present Worth Cost of O&M	$2,522,066
				Total Estimated Cost:	**$4,338,791**
				Rounded To:	**$4,300,000**

Notes:

Cost estimate is based on Anchor QEA past experience and vendor estimates using 2018 dollars.

This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended.

All costs assume construction field work would be conducted by non-unionized labor.

1. Permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to install new groundwater monitoring wells and new DNAPL collection wells.

Table 5-2
Cost Estimate for Alternative 3
In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

2. Mobilization/demobilization cost estimate includes mobilization and demobilization of labor, equipment, and materials necessary to install eight DNAPL collection wells to an average depth of 25 feet below ground surface. Estimate assumes mobilization/demobilization of in situ stabilization and solidification (ISS) activities will be performed by a separate contractor and will have a separate mobilization/demobilization cost.
3. Construct and remove decontamination pad cost estimate includes labor, equipment, and materials necessary to construct, maintain, and remove a decontamination pad and appurtenances for decontamination of drilling equipment during DNAPL recovery well installation.
4. Utility mark out and clearance cost estimate includes labor, equipment, and materials necessary to identify, mark out, and clear (via hand-digging) any underground utilities at the locations of the new groundwater monitoring and DNAPL collection wells. Cost assumes that utility location and markout would be conducted by a private utility locating company.
5. Install DNAPL recovery wells cost estimate includes labor, equipment, and materials necessary to install up to eight DNAPL recovery wells in the overburden with a 5-foot-long sump installed into the weathered bedrock zone. Estimate assumes each well (with sump) will be installed as a 6-inch-diameter stainless steel well to an average depth of 25 feet below ground surface. Cost estimate includes oversight by a geologist and drill rig and crew. Cost estimate assumes no work stoppages during field work due to weather or other potential delays. Cost estimate assumes wells will not be installed within roadways or public sidewalks, and local vehicle traffic patterns will not be affected by well installation activities.
6. Waste disposal - well installation cost estimate includes labor, equipment, and materials necessary to transport and dispose of soil cuttings generated during well installation. Cost assumes all the soil cuttings will be loaded into 55-gallon drums and transported off site daily for treatment/disposal via low temperature thermal desorption (LTTD). Cost estimate assumes that approximately 64 55-gallon drums of material will be generated during installation of DNAPL recovery wells. Cost estimate includes collection and laboratory analysis of four waste characterization samples. Cost estimate includes disposal fee; transportation fuel surcharge; and environmental, transportation, and spotting fees.
7. Site management plan cost estimate includes labor necessary to prepare a site management plan to document the institutional controls that have been established and will be maintained for the Site as described in Section 5.3.3 of the Alternatives Analysis Report (Anchor QEA 2018).
8. Establish institutional controls cost estimate includes all legal expenses to institute environmental easements and deed restrictions for the Site to control intrusive activities that could result in exposure to impacted soil and groundwater and restrict groundwater use. In addition, the institutional controls would include limitations regarding future disturbance of the materials stabilized within the north gas holder. Institutional controls would also establish requirements for additional investigation activities and/or remedial actions if the Toyota Dealership and/or automotive service shop were demolished or the property/building use changes. Such institutional controls may include governmental controls, proprietary controls, enforcement tools, and/or informational devices.
9. Pre-design investigation and treatability study cost estimate includes labor, equipment, and materials necessary to install test borings within the north gas holder to confirm holder depth and configuration and to collect representative samples to perform an ISS treatability study.
10. Permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to perform the ISS activities. Cost estimate does not include costs for the relocation or temporary closure of the on-site businesses.
11. Mobilization/demobilization of ISS-related equipment includes all of labor, equipment, and materials necessary to perform ISS of the materials contained within the north gas holder and includes mobilization of a grout mix plant and all required reagents.
12. Temporary fencing cost estimate includes labor, equipment, and materials necessary to install and remove temporary fencing around the work area.
13. Soil erosion and sediment control includes labor, equipment, and materials necessary to protect storm drains on site and to install silt fencing at the perimeter of the work area. Cost estimate assumes the soils erosion and sediment control measures will be maintained for the duration of the ISS activities.
14. Construct and remove decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 20-mil high density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a 1-foot-high berm, and sloped to a collection sump for the collection of decontamination water.
15. Utility mark out and clearance cost estimate includes costs to update existing subsurface utility survey to confirm no utilities are located in the footprint of the proposed ISS area.

Table 5-2

Cost Estimate for Alternative 3

In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

16. Sawcut asphalt cost estimate includes labor, equipment, and materials necessary to perform a neat cut around the proposed ISS area (to promote ease of post-ISS restoration activities), followed by removal of the asphalt layer for off site disposal as a non-hazardous waste.
17. Pre-excavation to remove obstructions cost estimate includes labor, equipment, and materials to pre-excavate soils to approximately 20% of the ISS treatment depth. Estimate assumes the excavated soils will be managed for disposal and will not be reused on site.
18. Bucket mixing within north gas holder cost estimate includes labor, equipment, and materials necessary to stabilize/immobilize DNAPL-impacted soil within the holder walls using ISS technology to depths of up to 22 feet below ground surface, and assumes the top of the stabilized materials will be located 2 feet below ground surface (and below the frost line). This cost estimate includes the cost for providing all reagents, mix plant, and the mix water that would be used during implementation of the ISS process and water that would be obtained from the on-site municipal water supply. Estimate assumes mix design for ISS will be 10% Portland cement and 1% bentonite hydrated with local, potable water. Estimate assumes that there will be limited spoils (up to 50 tons) requiring handling and management as part of the ISS.
19. General fill cost estimate includes labor, equipment, and materials necessary to furnish, place, and compact in-place soil fill material in the top 18 inches above the stabilized materials within the north gas holder.
20. Asphalt cost estimate includes labor, equipment, and materials necessary to install a 6-inch asphalt surface over ISS treatment area.
21. Surface restoration cost estimate includes costs to remove decontamination pad and restore surfaces damaged by the ISS equipment operations. Surface restoration is assumed to include limited (less than 100 square feet) asphalt patching and seeding and mulching of landscaped areas damaged by the remedial activities.
22. Solid waste characterization cost estimate includes the analysis of soil samples obtained once per every 100 cubic yards of excavated material destined for off-site treatment/disposal as well as material to be used as backfill. The actual sampling frequency will be determined by generator, receiving disposal facility and heterogeneity of materials
23. Construction and demolition (C&D) debris transportation and disposal cost estimate includes transporting screened debris from excavated materials to a non-hazardous off-site disposal facility. The weight of material was based on an assumed 1.5 tons per cubic yard of screened out debris (volume of debris assumes 10% of pre-treatment excavated materials and the removed asphalt will be managed as C&D debris).
24. Solid waste transportation and disposal - LTTD cost estimate includes transporting stabilized material to an off-site facility for thermal treatment and disposal. The weight of material was based on an assumed 1.5 tons per cubic yard of soil (including spoils from the ISS activities) destined for off-site treatment/disposal.
25. Administration and engineering and construction management costs are based on an assumed 15% of the total capital costs.
26. Annual permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to conduct groundwater monitoring and DNAPL recovery activities.
27. Annual verification of institutional controls cost estimate includes administrative costs for confirming institutional controls are being implemented. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.
28. Semi-annual DNAPL monitoring and passive recovery cost estimate includes labor, equipment, and materials necessary to conduct semi-annual DNAPL monitoring at up to eight wells. Cost estimate includes passive DNAPL recovery via manual bailing or a portable peristaltic pump. Cost estimate assumes two workers will require 1 day to complete monitoring and recovery per event. Estimate includes field vehicle and equipment.
29. Annual groundwater monitoring cost estimate includes labor, equipment, and materials necessary to conduct annual groundwater sampling activities. Cost estimate assumes groundwater samples will be collected from up to 14 groundwater monitoring wells using low-flow sampling procedures. Cost estimate assumes two workers will require 7 days to complete the sampling activities. Estimate includes labor, field vehicle, lodging, subsistence, and equipment rental.
30. Laboratory analysis of groundwater samples cost estimate includes the analysis of groundwater samples for BTEX, PAHs, and cyanide. Estimate assumes laboratory analysis of groundwater samples from up to 14 groundwater monitoring wells per sampling event.

Table 5-2
Cost Estimate for Alternative 3
In Situ Solidification and Stabilization of the North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

31. Waste disposal cost estimate includes off-site disposal of drummed PPE, disposable sampling equipment, purge water, and DNAPL generated/collected during semi-annual DNAPL and annual groundwater monitoring activities.
32. Annual summary report cost estimate includes labor necessary to prepare an annual report summarizing semi-annual DNAPL and annual groundwater monitoring activities and results. Annual report to be submitted to NYSDEC.
33. Present worth is estimated based on a 4% beginning-of-year discount rate (adjusted for inflation). It is assumed that "year zero" is 2018.

BTEX: benzene, toluene, ethylbenzene, and xylenes

COC: constituent of concern

DNAPL: dense nonaqueous phase liquid

LS: lump sum

MGP: manufactured gas plant

NAPL: nonaqueous phase liquid

NYSDEC: New York State Department of Environmental Conservation

PAH: polycyclic aromatic hydrocarbon

PPE: personal protective equipment

QA/QC: quality assurance/quality control

VLF: vertical linear foot

Table 5-3
Cost Estimate for Alternative 4
Soil Removal and Groundwater Monitoring

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
Capital Costs					
1	Permitting/Access Agreements	1	LS	$1,000,000	$1,000,000
2	Pre-Design Investigation	1	LS	$250,000	$250,000
3	Mobilization/Demobilization	1	LS	$475,000	$475,000
4	Structural Survey (Pre-Remediation)	1	LS	$60,000	$60,000
5	Utility Location and Relocation	6	EACH	$300,000	$1,800,000
6	Traffic Controls	78	WEEKS	$8,000	$624,000
7	Erosion and Sedimentation Control	2,400	LF	$8	$18,000
8	Construct and Remove Equipment Decontamination Pad	1	EACH	$10,000	$10,000
9	Construct Material Staging Area and Dewatering Pads	2	EACH	$50,000	$100,000
10	Inspection and Maintenance of Remedial Support Facilities	78	WEEKS	$1,200	$93,600
11	Demolition of Existing On-Site Structures	23,000	SF	$20	$460,000
12	Open Span Structure	1	LS	$1,617,000	$1,617,000
13	Maintain and Operate Temporary Structure	74	WEEKS	$10,000	$740,000
14	Emissions Monitoring	74	WEEKS	$750	$55,500
15	Temporary Groundwater Treatment System	16	MONTHS	$75,000	$1,200,000
16	Install Bedrock Sockets and H-Piles	150	EACH	$10,000	$1,500,000
17	Install and Remove Temporary Sheetpile	24,000	VSF	$70	$1,680,000
18	Soil Excavation and Handling	64,481	CY	$60	$3,868,889
19	Stabilization Admixture	6,467	Ton	$120	$776,000
20	Vapor/Odor Control	74	WEEKS	$3,500	$259,000
21	General Fill	59,645	CY	$45	$2,684,042
22	Topsoil	4,836	CY	$60	$290,167
23	Surface Restoration	10,000	SF	$2	$20,000
24	Install New Chainlink Fence Around Property	1,250	LF	$20	$25,000
25	Restore Cedar Street Right-of-Way	13,000	SF	$8	$104,000
26	Solid Waste Characterization	221	EACH	$1,200	$265,456

Table 5-3
Cost Estimate for Alternative 4
Soil Removal and Groundwater Monitoring

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
27	Solid Waste Transportation and Disposal - C&D Debris	28,211	Ton	$90	$2,538,958
28	Solid Waste Transportation and Disposal - Non-Hazardous Waste	29,199	Ton	$110	$3,211,847
29	Solid Waste Transportation and Disposal - LTTD	53,197	Ton	$140	$7,447,611
30	Install New Groundwater Monitoring Wells	160	VLF	$120	$19,200
				Subtotal Capital Cost	$33,193,269
31				Administration & Engineering (15%)	$4,978,990
				Construction Management (15%)	$4,978,990
				Contingency (20%)	$6,638,654
				Total Capital Cost	$49,789,904
Operation and Maintenance (O&M) Costs					
32	Annual Permitting/Access Agreements	1	LS	$15,000	$15,000
33	Annual Groundwater Monitoring	1	EVENT	$20,000	$20,000
34	Laboratory Analysis of Groundwater Samples	8	EACH	$740	$5,920
35	Waste Disposal	4	DRUM	$750	$3,000
36	Annual Summary Report	1	LS	$20,000	$20,000
				Subtotal O&M Cost	$63,920
				Contingency (20%)	$12,784
				Total Annual O&M Cost	$76,704
37				30-Year Total Present Worth Cost of O&M	$1,179,128
				Total Estimated Cost:	**$50,969,033**
				Rounded To:	**$51,000,000**

Notes:

Cost estimate is based on Anchor QEA past experience and vendor estimates using 2018 dollars.

This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended.

All costs assume construction field work will be conducted by non-unionized labor.

Table 5-3
Cost Estimate for Alternative 4
Soil Removal and Groundwater Monitoring

1. Permitting and access agreements cost estimate includes labor, equipment, and materials necessary to obtain long-term access to the Site to perform the remedial alterantive. Estimated cost includes relocation of the existing business ($500,000) and rental of the Toyota Dealership property to implement the remedy (18 months x $15,000 per month). Estimate also includes costs for obtaining demolition and road opening permits and a building permit to install the temporary structure.
2. Pre-design investigation cost estimate includes labor, equipment, and materials necessary to conduct pre-design investigation in support of the remedial design for this alternative, including a test boring/geotechnical program to refine the top of bedrock surface, groundwater sampling and hydraulic testing to support design of the groundwater treatment system, and a pre-demolition hazardous materials survey.
3. Mobilization/demobilization cost estimate is based on 10% of the capital costs.
4. Structural survey cost estimate includes labor, equipment, and materials necessary to perform a structural survey of the building located adjacent to the proposed excavation area to document existing conditions prior to start of the remedial activities.
5. Utility location and relocation cost estimate includes labor, equipment, and materials necessary to confirm the presence and extent of subsurface utilities within the excavation area, and to install temporary bypass systems or reroute the utilities around the excavation area. Estimated cost also includes costs to reinstall and reconnect utilities at the completion of the remedial activites and assumes the utilities to be addressed are electric, natural gas, sanitary sewer (lateral/feeder lines less than 15 inches in diameter), storm sewer (lateral/feeder lines less than 24 inches in diameter), potable water (less than 8 inches in diameter), and fiber optic line.
6. Traffic controls cost estimate includes labor, equipment, and materials necessary to erect and maintain signage to inform drivers and pedestrians of the long-term closure of Cedar Street during completion of the remedial activities.
7. Erosion and sedimentation control cost estimate includes placement/maintenance of stacked hay bales or silt fence around project work limits and material staging areas.
8. Construct and Remove Equipment and Decontamination Pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of a 12-inch gravel fill layer bermed and sloped to a sump and covered with a 40-mil HDPE liner and a 6-
9. Construct Material Staging Area and Dewatering Pads cost estimate includes labor, equipment, and materials necessary to construct two 75-foot by 150-foot material staging area constructed of a 6-inch gravel sub-base and 6-inch asphalt pavement and equipped with a 12-inch bermed and sloped to a sump for staging excavated material to facilitate waste characterization sampling and material handling/stabilization.
10. Inspection and Maintenance of Remedial Support Facilities cost estiamte includes inspecting and repairing staging area pads, decontamination pads, and erosion and sediment control as necessary during the remedial activities.
11. Demolition of existing on-site structures cost estimate includes cost for asbestos abatement (assumed to be 25% of total demolition cost), removal and off-site disposition of universal waste and regulated materials, above-grade structure demolition, and slab removal. Estimate assumes building is slab on grade construction and that other environment conditions related to automotive maintenance and sales activities are addressed by the property owner prior to building demolition. Estimate also includes off-site disposal of all waste materials generated as a result of the demolition activites.
12. Open span structure cost estimate includes rental of a Sprung structure 175-feet-wide by 320-feet-long to enclose the excavation area equipped with air handling and treatment system. Cost estimate assumes a 17-month lease price of approximately $16 per square foot and construction cost of approximately $12 per square foot. Cost estimate assumes structure is equipped with overheard doors for truck and excavator access and that structure is moved one time to complete the soil removal activities. Final structure construction details will be determined as part of the Remedial Design. Air treatment cost estimate includes rental of vapor treatment system to collect and treat air within the excavation enclosure. Cost estimate includes a 17-month lease of all vapor collection and treatment equipment, delivery, and set-up fees.
13. Maintain and operate temporary structure cost estimate includes labor, equipment, and materials to operate and maintain the air handling system associated with the temporary structure, including change-out of vapor treatment media.

Table 5-3
Cost Estimate for Alternative 4
Soil Removal and Groundwater Monitoring

14. Emissions monitoring cost estimate includes labor, equipment and materials needed to perform air monitoring on the exterior of the temporary structure to document that dust and/or vapors are not being released outside of the temporary structure at concentrations above standards criteria and guidelines.
15. Temporary groundwater treatment system cost estimate includes installation of sumps within excavation areas and rental of a portable water treatment system capable of operating at 75 gallons per minute. Cost estimate assumes water treatment system includes pumps, influent piping and hoses, frac tanks, carbon filters, organoclay filters, bag filters, discharge piping and hoses, and flow meter. Cost estimate assumes bag filters will require change-out approximately once per day of operation. Estimate assumes treated water would be discharged to a local POTW sanitary sewer under a local discharge permit.
16. Install bedrock sockets and H-piles includes cost to pre-drill a minimum of 6 feet into the underlying bedrock and grout and install H-piles at a distance of one socket per 8 linear feet of excavation perimeter area to support the sheetpile excavation system. Estimate assumes that use of bedrock sockets will eliminate the need to install interior bracing within the excavation system.
17. Install and remove temporary sheetpile cost estimate includes labor, equipment, and materials necessary to install, remove, and decontaminate temporary steel sheetpile. Cost estimate assumes outer sheetpile cantilevered at an average depth of 20 feet below grade and that sheetpile can penetrate the upper 3 feet of the weathered bedrock layer. Cost estimate assumes sheetpile will be removed following site restoration activities. Final system wil be determined as part of a Remedial Design.
18. Soil excavation and handling includes labor, equipment, and materials necessary to remova MGP-impacted soils and structures to a depth of 20 feet below grade.
19. Stabilization admixture cost estimate includes purchase of Portland cement to be used for soil dewatering. Stabilization admixture will be added at a ratio of 10% of the volume of material to be stabilized. Cost estimate assumes that any water generated in association with soil management will be treated by the temporary water treatment system.
20. Vapor/odor control cost estimate includes labor, equipment, and materials necessary to monitor vapor/odor emission during intrusive site activities. Cost estimate includes application of vapor/odor suppressing foam to staged material.
21. General fill cost estimate includes labor, equipment, and materials necessary to import, place, grade, and compact 18.5 feet of fill within excavation areas. Cost estimate is based on in-place soil volume. Cost estimate assumes 95% compaction based on standard proctor testing and includes survey verification and compaction testing.
22. Topsoil cost estimate includes labor, equipment, and materials necessary to import, place, grade, and compact 18 inches of clean topsoil over footprint of excavation areas located on the Toyota Dealership property. Cost estimate is based on in-place soil volume.
23. Surface restoration cost estimate includes labor, equipment, and materials necessary to restore other surfaces on the Toyota Dealership property disturbed or damaged as a result of the remedial activities and assumes that asphalt areas not removed would be left in place.
24. Install new chainlink fence around property costs estimate assumes following completion of the remedial alternative, a 6-foot-high chainlink fence will be installed around the Toyota Dealership property to protect the restored area from vandalism.
25. Restore Cedar Street right-of-way assumes that following completion of the remedial alternative, the right-of-way will be restored to match prior conditions, including the location of sidewalks, curbing, and asphalt. Estimate assumes asphalt road will be restored with 12 inches of base course and 6 inches of top course.
26. Solid waste characterization cost estimate includes the analysis of soil samples (including, but not limited to, PCBs, VOCs, SVOCs, and RCRA metals). Cost assumes that waste characterization samples would be collected at a frequency of one sample per every 500 tons of material destined for off-site treatment/disposal.
27. Solid waste transportation and disposal - C&D debris cost estimate includes labor, equipment, and materials necessary to transport and dispose of existing surface covers (asphalt and concrete) and upper 3.5 feet of historic fill materials as non-hazardous construction and demolition debris with a unit weight of 1.75 tons per cubic yard. Cost estimate includes disposal fee; transportation fuel surcharge; and environmental, transportation, and spotting fees.
28. Solid waste transportation and disposal - non-hazardous waste cost estimate includes labor, equipment, and materials necessary to transport and dispose of excavated soils from 5 feet below ground surface to 10 feet below ground surface and the decontamination and staging pad materials as non-hazardous waste. Cost assumes that all staging area construction materials will be disposed of as a non-hazardous waste at a weight of 2 tons per cubic yard and the excavated soils plus stabilization mixture at a weight of 1.5 tons per cubic yard. Cost estimate includes disposal fee; transportation fuel surcharge; and environmental, transportation, and spotting fees.

Table 5-3
Cost Estimate for Alternative 4
Soil Removal and Groundwater Monitoring

29. Solid waste transportation and disposal - LTTD cost estimate includes labor, equipment, and materials necessary to transport excavated material characteristically hazardous for benzene off-site for thermal treatment via LTTD. Estimated quantity is based on 50% of excavated material plus stabilization mixture at a weight of 1.5 tons per cubic yard. Cost estimate assumes soil would be managed at Clean Earth of New Jersey's LTTD facility located in Jersey City, New Jersey. Cost estimate includes transportation fuel charge and all applicable taxes. Cost estimate assumes treated soil will not require disposal at a solid waste landfill.
30. Install new groundwater monitoring wells cost estimate includes labor, equipment, and materials necessary to install up to eight 2-inch diameter polyvinyl chloride monitoring wells screened within the overburden soils at the Site. Estimate assumes up to two monitoring wells will be installed per side of the Toyota Dealership property.
32. Annual permitting/access agreements cost estimate includes all costs necessary to obtain appropriate permits and access agreements to conduct groundwater monitoring activities.
33. Annual groundwater monitoring cost estimate includes labor, equipment, and materials necessary to conduct annual groundwater sampling activities. Cost estimate assumes groundwater samples will be collected from up to 8 groundwater monitoring wells using low-flow sampling procedures. Cost estimate assumes two workers will require 3 days to complete the sampling activities. Estimate includes labor, field vehicle, lodging, subsistence, and equipment rental.
34. Laboratory analysis of groundwater samples cost estimate includes the analysis of groundwater samples for BTEX, PAHs, and cyanide. Estimate assumes laboratory analysis of groundwater samples from up to eight groundwater monitoring wells per sampling event.
35. Waste disposal cost estimate includes off-site disposal of drummed PPE, disposable sampling equipment, purge water, and DNAPL generated/collected during annual groundwater monitoring activities.
36. Annual summary report cost estimate includes labor necessary to prepare an annual report summarizing annual groundwater monitoring activities and results. Annual report will be submitted to NYSDEC.
37. Present worth is estimated based on a 4% beginning-of-year discount rate (adjusted for inflation). It is assumed that "year zero" is 2018.

BTEX: benzene, toluene, ethylbenzene, and xylenes

Ea: each

LS: lump sum

LTTD: low-temperature thermal desorption

MGP: manufactured gas plant

NAPL: nonaqueous phase liquid

NYCRR: New York Codes, Rules and Regulations

NYSDEC: New York State Department of Environmental Conservation

O&M: operation and maintenance

PAH: polycyclic aromatic hydrocarbon

POTW: publicly owned treatment works

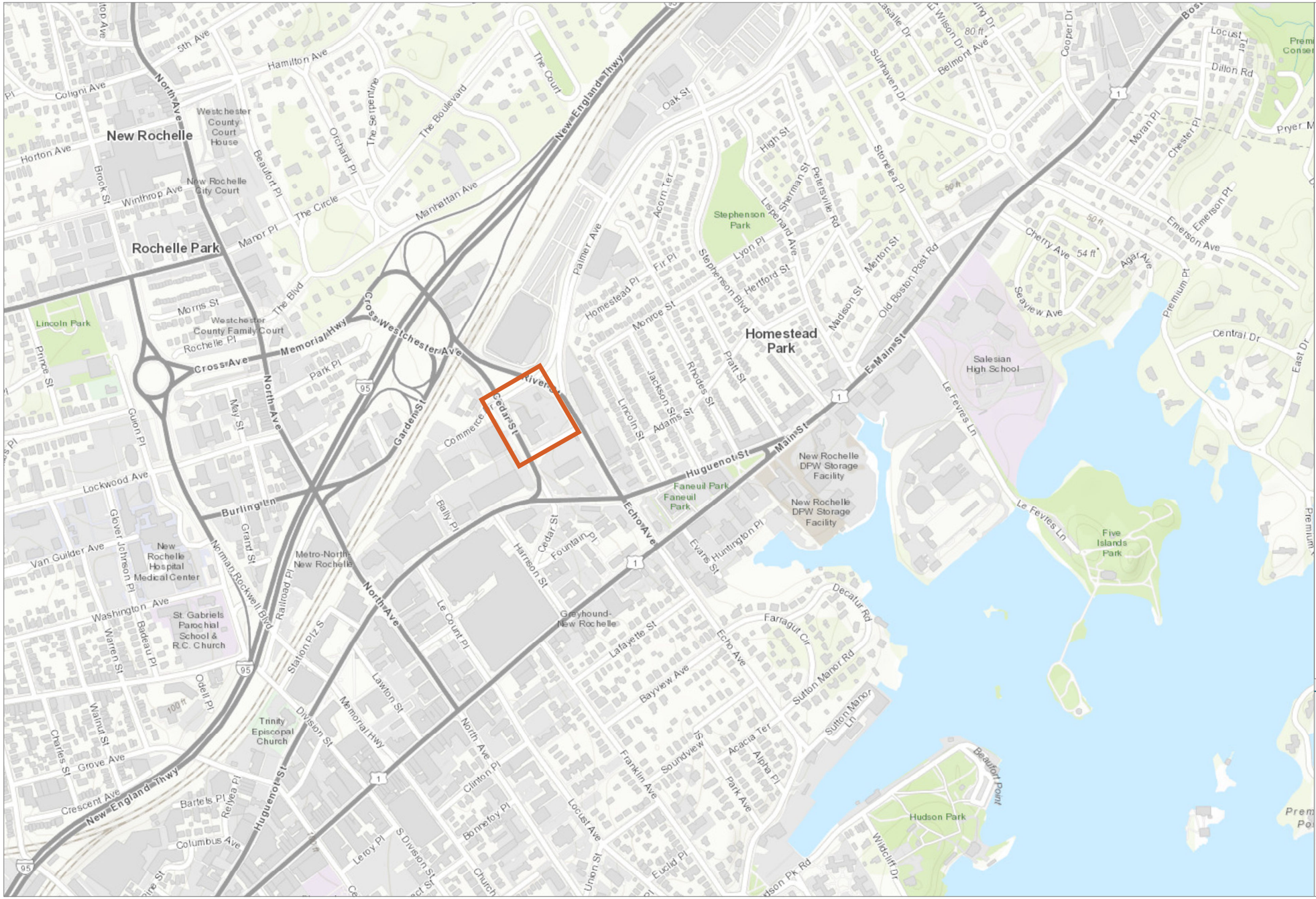
PPE: personal protective equipment

QA/QC: quality assurance/quality control

VLF: vertical linear foot

VSF: vertical square foot

Figures



LEGEND:

Project Area

NOTE:
1. Map Source: ESRI World Light Gray Canvas Base and World Topographic Map

0 1,000
Feet

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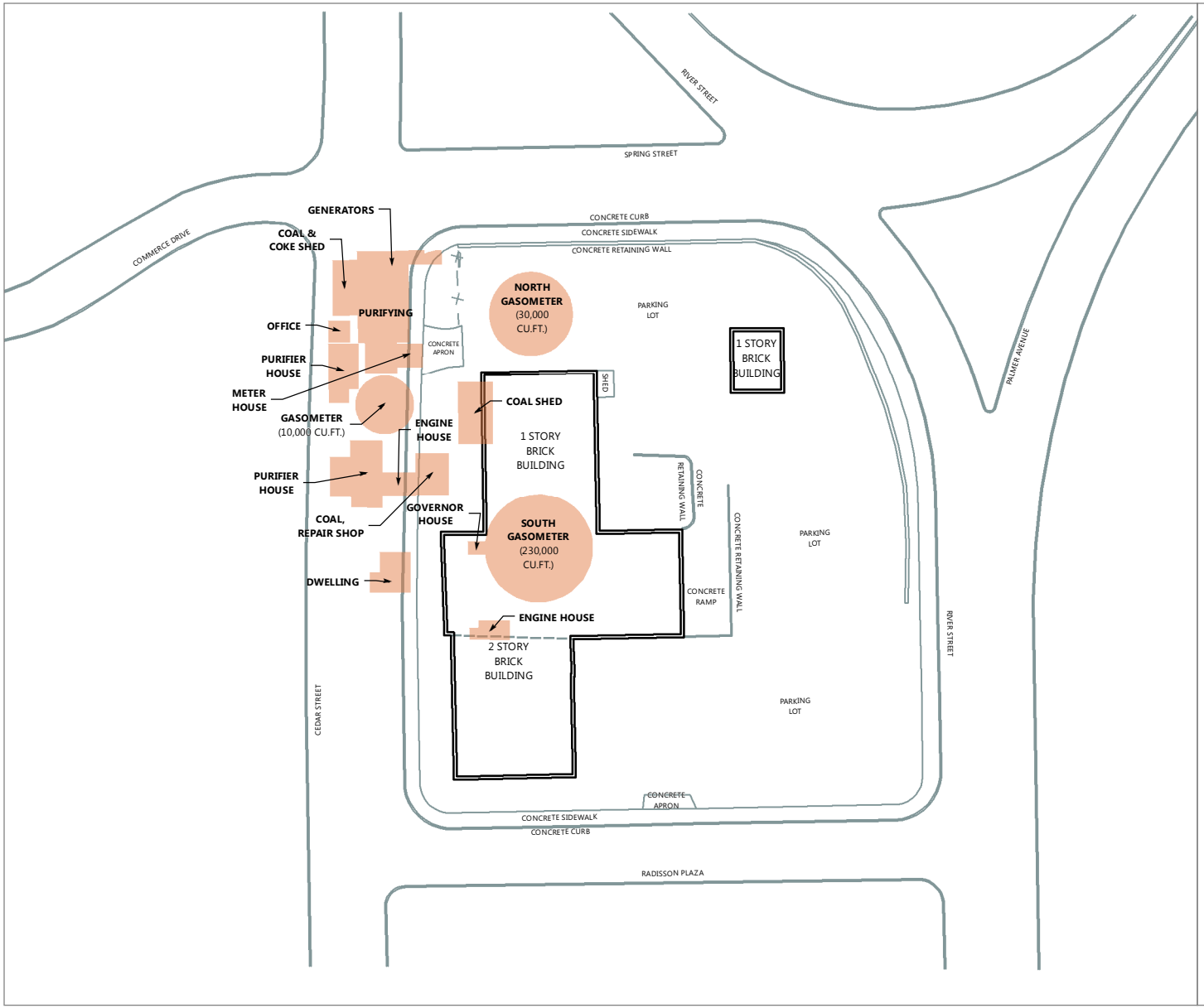
ANCHOR QEA

Figure 1-1
Site Location
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.



LEGEND:

- Toyota Dealership Structure
- Historical MGP Structure

NOTE:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO., P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report*, prepared by URS and dated July 2017.
3. All locations are approximate

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Feet

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ANCHOR QEA

Figure 1-2
Site Features and Historic Structures
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.

LEGEND:

- Historical MGP Structure
- Toyota Dealership Structure

Sample Locations

- Historic Monitoring Well (1992)
- Monitoring Well (2009)
- Overburden Monitoring Well (RI)
- Bedrock Monitoring Well (RI)
- Groundwater Grab Sample
- Soil Boring and Rock Core
- Soil Boring (RI)
- Test Pit Area (RI)
- Soil Boring (SC)
- Soil Gas
- Test Pit Area (SC)
- Ambient Air or Indoor Air Sampling

NOTES:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO, P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report* (RIR), prepared by URS and dated July 2017.
3. Figure reproduced from the RIR, Figure 3-1.
4. Sample location SG-1 and the indoor/ambient air sample location are approximate.
5. Monitoring wells MW-T1 and MW-T2 were reported as damaged and not usable during the RI.
6. All locations are approximate.
7. RI = Remedial Investigation
8. SC = Site Characterization

0 100

Feet

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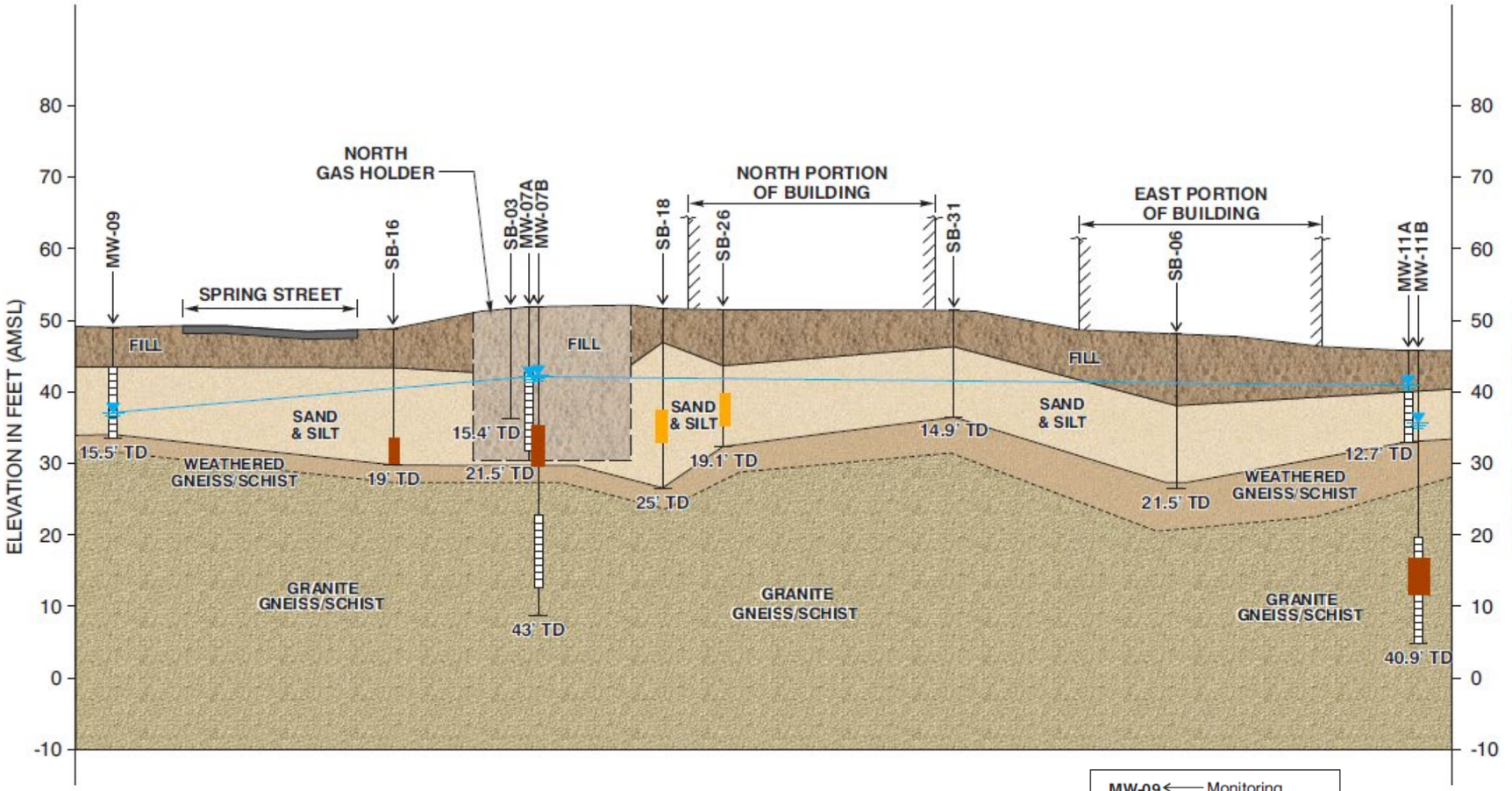
Figure 1-3
Sample Locations - Previous Investigations
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.

NORTH-NORTHWEST

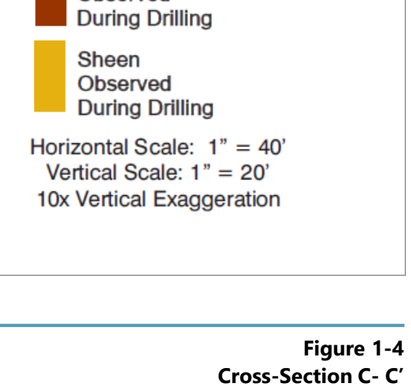
C

SOUTH-SOUTHEAST

C'



CROSS-SECTION LOCATION MAP:



LEGEND:

- Fill
- Sand & Sill
- Weathered Gneiss/Schist
- Granite Gneiss/ Schist
- Fill Within Former Holder
- NAPL Observed During Drilling
- Sheen Observed During Drilling

Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 20'
10x Vertical Exaggeration

MW-09 ← Monitoring Well Number
← Potentiometric Surface 04/22-23/2014
← Screened Interval of Monitoring Well
← Borehole Termination
15.5' TD = Total Depth

NOTES:

1. Cross-section reproduced from Cedar Street Works Remedial Investigation Report (RIR), prepared by URS and dated July 2017.
2. Locations of NAPL and Sheen observations are based on review of the boring and well development logs presented in the RIR and are approximate.
3. Elevations based on North American Datum, 1988

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Figure 1-4
Cross-Section C- C'
Cedar Street Works Former Manufactured Gas Plant Site – Alternatives Analysis Report
Consolidated Edison of New York, Inc.

LEGEND:

- Top of Bedrock Elevation Contour (ft amsl)
- Historical MGP Structure
- Toyota Dealership Structure

Sample Locations

- Monitoring Well (2009)
- Soil Boring
- Bedrock Monitoring Well (RI)
- Overburden Monitoring Well (RI)
- Soil Boring and Rock Core (RI)
- Soil Boring (RI)

NOTES:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO., P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report*, prepared by URS and dated July 2017.
3. Elevations based on North American Vertical Datum, 1988.
4. All locations are approximate.
5. RI = Remedial Investigation

0 100

Feet

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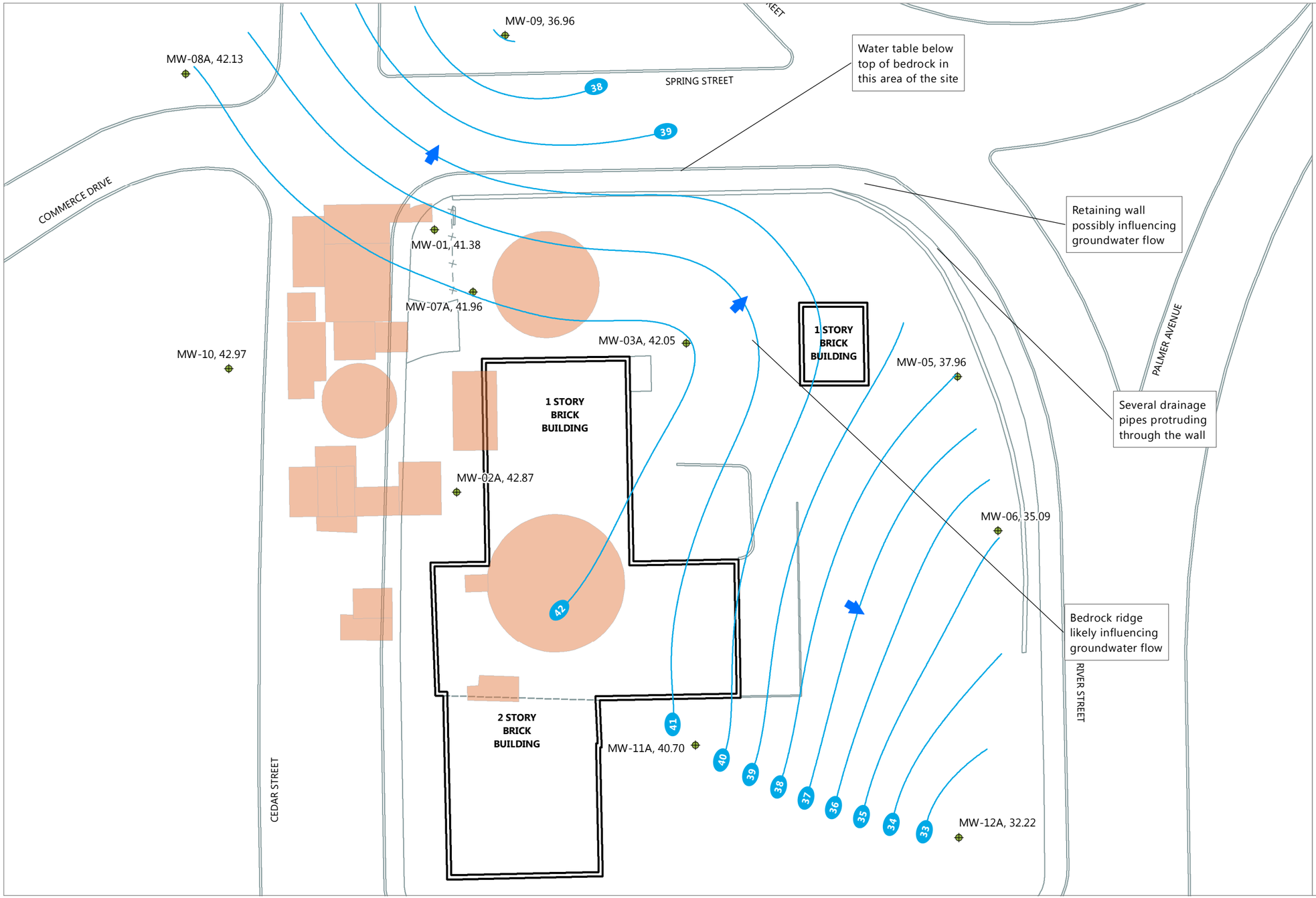
ANCHOR QEA

Figure 1-5
Estimated Top of Bedrock Surface
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.



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ANCHOR QEA

Figure 1-6
Overburden Groundwater Potentiometric Surface
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.

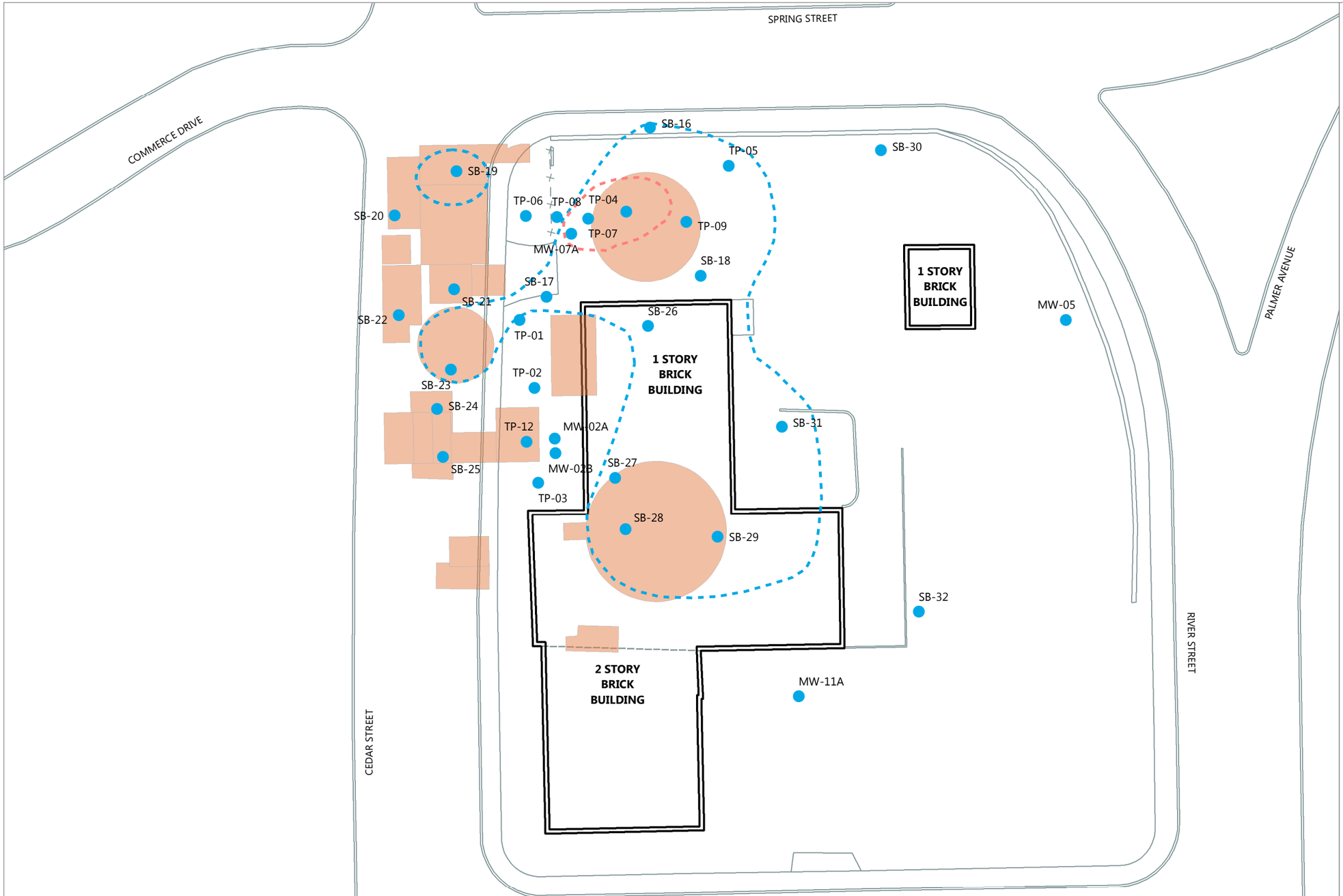

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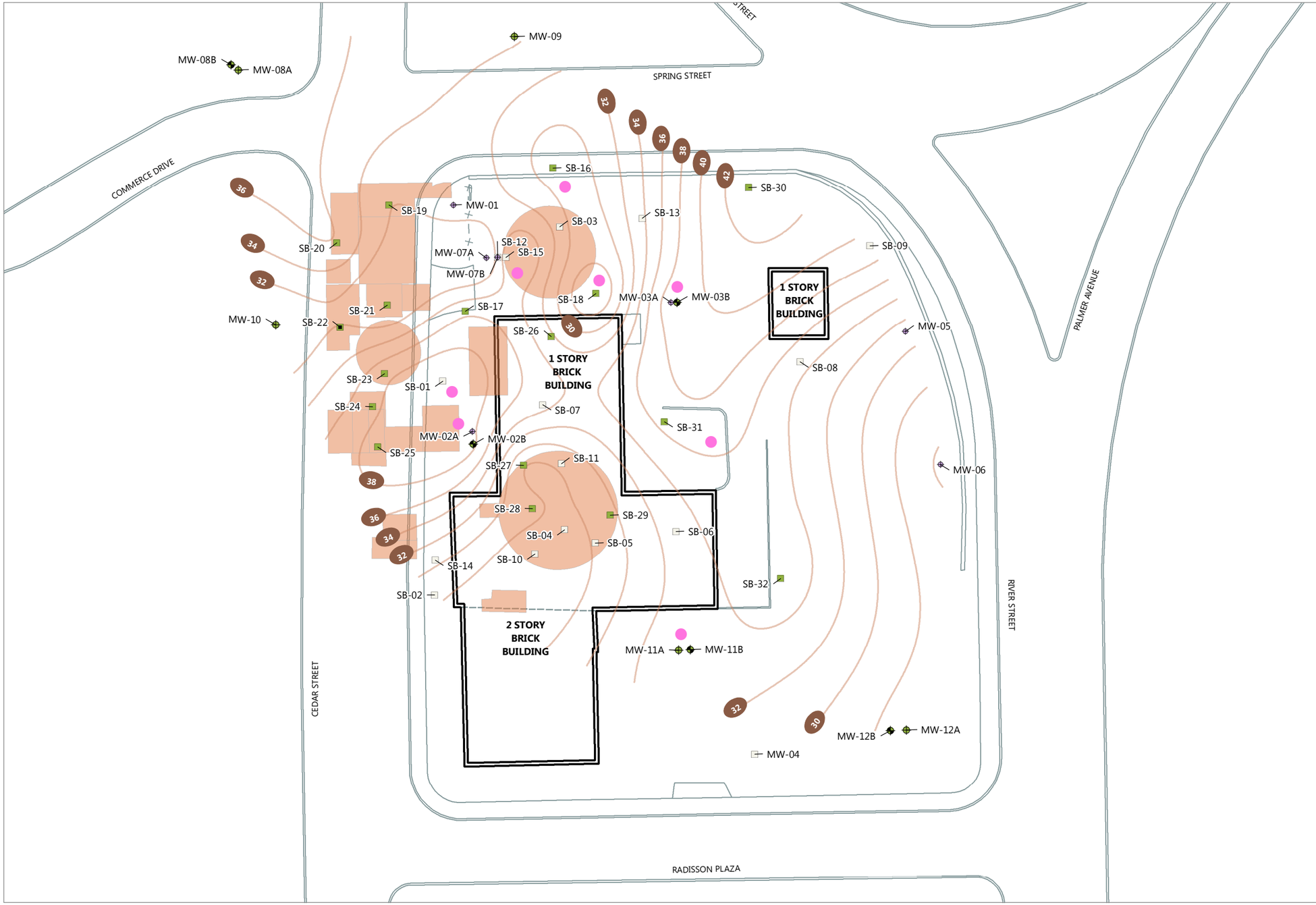
Figure 1-7
Summary of Extent of Soil Sample Exceedances
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.



LEGEND:

- Top of Bedrock Elevation Contour (ft amsl)
- Historical MGP Structure
- Toyota Dealership Structure

Sample Locations

- Monitoring Well (2009)
- Soil Boring
- Bedrock Monitoring Well (RI)
- Overburden Monitoring Well (RI)
- Soil Boring and Rock Core (RI)
- Soil Boring (RI)
- Proposed DNAPL Recovery Well

NOTES:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO, P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report*, prepared by URS and dated July 2017.
3. Proposed DNAPL recovery wells are based on observations of coal tar DNAPL in prior investigations or based on low points in top of bedrock layer. Final DNAPL recovery well locations will be determined based on a remedial design program and in consideration of Site use and the presence of subsurface obstructions and utilities.
4. Elevations based on North American Vertical Datum, 1988.
5. All locations are approximate.
6. RI = Remedial Investigation

0 100

Feet

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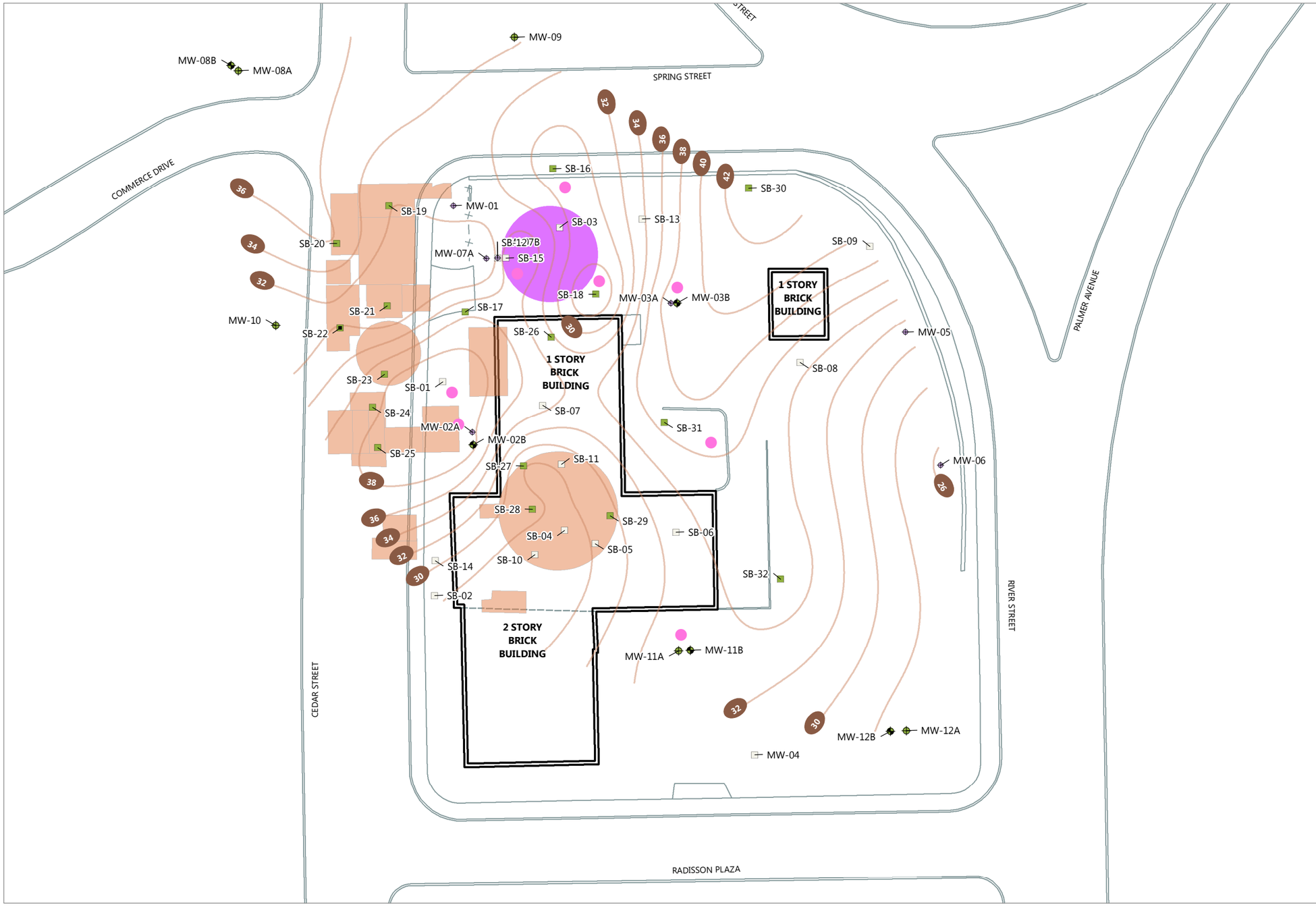
ANCHOR QEA

Figure 5-1

Proposed Remedial Alternative 2: DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.



LEGEND:

- Top of Bedrock Elevation Contour (ft amsl)
- Historical MGP Structure
- Toyota Dealership Structure

Sample Locations

- Monitoring Well (2009)
- Soil Boring
- Bedrock Monitoring Well (RI)
- Overburden Monitoring Well (RI)
- Soil Boring and Rock Core (RI)
- Soil Boring (RI)
- Proposed DNAPL Recovery Well
- Proposed ISS Treatment Area

NOTES:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO, P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report*, prepared by URS and dated July 2017.
3. Proposed DNAPL recovery wells are based on observations of coal tar DNAPL in prior investigations or based on low points in top of bedrock layer. Final DNAPL recovery well locations will be determined based on a remedial design program and in consideration of Site use and the presence of subsurface obstructions and utilities.
4. Elevations based on North American Vertical Datum, 1988.
5. All locations are approximate.
6. RI = Remedial Investigation

0 100

Feet

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ANCHOR QEA

Figure 5-2

Proposed Remedial Alternative 3: ISS of North Gas Holder, DNAPL Recovery, Maintain Existing Surface Covers, Groundwater Monitoring, and Institutional Controls

Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.

LEGEND:

- Proposed Soil Removal Area (Approximate)
- Historical MGP Structure
- Toyota Dealership Structure

Sample Locations

- Monitoring Well (2009)
- Soil Boring
- Bedrock Monitoring Well (RI)
- Overburden Monitoring Well (RI)
- Soil Boring and Rock Core (RI)
- Soil Boring (RI)

NOTES:

1. Base map information based on a survey provided by Chazen Engineering, Land Surveying & Landscape Architecture, CO, P.C. dated 1/20/2009.
2. Historical MGP structure locations are approximate and based on information presented in the *Cedar Street Works Remedial Investigation Report*, prepared by URS and dated July 2017.
3. All locations are approximate.
4. RI = Remedial Investigation

0 100

Feet

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Figure 5-3
Proposed Remedial Alternative 4: Soil Removal, Groundwater Monitoring, and Institutional Controls
Cedar Street Works Former Manufactured Gas Plant Site - Alternatives Analysis Report
Consolidated Edison Company of New York, Inc.

Appendix A
RIR Tables and Figures

RIR Tables

Table 2-1
Site Characterization Sample Summary
Cedar Street Works Former MGP Site

Location	Sample ID	Depth (bgs)	TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Hydrocarbon Fingerprint Method 8100M/8270M	Available Cyanide Method OIA-1677	Dissolved Metals Method 6010
SOIL SAMPLES									
MW-01	MW-01 (9-11)	9-11'	X	X	X	X			
	MW-01 (17-19)	17-19'	X	X	X	X			
	MW-01 (17-19)*	17-19'	X	X	X	X			
MW-02	MW-02 (7-9)	7-9'	X	X	X	X			
	MW-02 (13-15)	13-15'	X	X	X	X			
MW-03	MW-03 (14-14.5)	14-14.5'	X	X	X	X			
	MW-03 (16)	16'	X	X	X	X			
MW-05	MW-05 (2-3)	2-3'	X	X	X	X			
	MW-5 (11-13)	11-13'	X	X	X	X			
	MW-05 (13-15)	13-15'	X	X	X	X			
MW-06	MW-06 (15-17)	15-17'	X	X	X	X			
	MW-06 (17-19)	17-19'	X	X	X	X			
MW-07A	MW-07A (17-19)	17-19'	X	X	X	X			
	MW-07A (21-23)	21-23'	X	X	X	X			
SB-01	SB-01 (9-11)	9-11'	X	X	X	X			
	SB-1 (11-13)	11-13'	X	X	X	X			
SB-02	SB-02 (9-11)	9-11'	X	X	X	X			
	SB-02 (23-25)	23-25'	X	X	X	X			
SB-03	SB-03 (11-13)	11-13'	X	X	X	X			
	SB-03 (13)	13'	X	X	X	X	X		
SB-04	SB-04 (13-15)	13-15'	X	X	X	X	X		
	SB-04 (21-23)	21-23'	X	X	X	X			
	SB-04 (23-25)	23-25'	X	X	X	X			
SB-05	SB-05 (19-21)	19-21'	X	X	X	X			
	SB-05 (21-23)	21-23'	X	X	X	X	X		
SB-06	SB-06 (11-13)	11-13'	X	X	X	X			
	SB-06 (19-21)	19-21'	X	X	X	X			
SB-07	SB-07 (11-13)	11-13'	X	X	X	X			
	SB-07 (15-17)	15-17'	X	X	X	X			
SB-09	SB-09 (7-9)	7-9'	X	X	X	X			
SB-10	SB-10 (19-21)	19-21'	X	X	X	X			
SB-11	SB-11 (17-19)	17-19'	X	X	X	X			
	SB-11 (19-21)	19-21'	X	X	X	X			
SB-12	SB-12 (11-13)	11-13'	X	X	X	X			
	SB-12 (17-19)	17-19'	X	X	X	X	X		
SB-13	SB-13 (11-13)	11-13'	X	X	X	X			
	SB-13 (13-15)	13-15'	X	X	X	X	X		
SB-14	SB-14 (9-11)	9-11'	X	X	X	X			
	SB-14 (23-25)	23-25'	X	X	X	X			
SB-15	SB-15 (13-15)	13-15'	X	X	X	X			
	SB-15 (15-17)	15-17'	X	X	X	X			
TP-01	TP-01 (2-3)	2-3'	X	X	X	X			
	TP-01 (6)	6'	X	X	X	X			

Table 2-1
Site Characterization Sample Summary
Cedar Street Works Former MGP Site

Location	Sample ID	Depth (bgs)	TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Hydrocarbon Fingerprint Method 8100M/8270M	Available Cyanide Method OIA-1677	Dissolved Metals Method 6010
SOIL SAMPLES									
TP-02	TP-02 (2-3)	2-3'	X	X	X	X			
	TP-02 (3-4)	3-4'	X	X	X	X			
	TP-02 (10.5)	10.5'	X	X	X	X			
TP-03	TP-03 (1-3)	1-3'	X	X	X	X			
	TP-03 (3)	3'	X	X	X	X			
TP-04	TP-04 (5.7)	5.7'	X	X	X	X			
	TP-04 (7.5)	7.5'	X	X	X	X			
TP-05	TP-05 (2.4)	2.4'	X	X	X	X			
	TP-05 (12.5)	12.5'	X	X	X	X			
	TP-05 (12.5)*	12.5'	X	X	X	X			
TP-06	TP-06 (2.5-3.5)	2.5-3.5'	X	X	X	X			
	TP-06 (6-7)BP	6-7'	X	X	X	X			
	TP-06 (9.5)	9.5'	X	X	X	X			
TP-07	TP-07 (7-9)IH	7-9'	X	X	X	X			
	TP-07 (9)IH	9'	X	X	X	X			
	TP-07 (9)OH	9'	X	X	X	X			
GROUNDWATER SAMPLES									
MW-01	MW-01	NA	X	X	X	X		X	X
MW-02	MW-02	NA	X	X	X	X		X	X
MW-03	MW-03	NA	X	X	X	X		X	X
MW-05	MW-05	NA	X	X	X	X		X	X
MW-06	MW-06	NA	X	X	X	X		X	X
MW-07A	MW-07A	NA	X	X	X	X		X	X
MW-07B	MW-07B	NA	X	X	X	X		X	
MW-T3	MW-T3	NA	X	X	X	X	X	X	X
MW-T300	MW-T300*	NA	X	X	X	X		X	X

* Indicates a duplicate sample.
BP = Beneath pipe
IH = Inside Holder
OH = Outside Holder

Table 2-2
Groundwater Elevation Measurements and NAPL Observations
Cedar Street Works Former MGP Site

Monitoring Well ID	Northing	Easting	Ground Elevation (Ft AMSL)	PVC Elevation (Ft AMSL)	Steel Casing Elevation (Ft AMSL)	Depth to Water 1/13/14 (Ft)	Water Elevation 1/13/14 (Ft AMSL)	Comments on 1/13/14	Depth to Water (TOR/Casing) 4/22-23/14 (Ft)	Water Elevation 4/22-23/14 (Ft AMSL)	PID Headspace (ppm)	Comments on 4/22-23/14	Depth to Water (TOR) 7/17/14 (Ft)	Elevation 7/17/14 (Ft AMSL)
MW-01	759084.6	691308.4	51.19	50.90	N/A	10.19	40.71	No NAPLs or sheen	9.52	41.38	0	No NAPLs or sheen	6.82	44.08
MW-2A	758977.1	691381.2	52.33	51.95	N/A	9.64	42.31	No NAPLs or sheen	9.08	42.87	0	No NAPLs or sheen	5.35	46.60
MW-2B	758971	691385	52.34	51.71	52.02	N/A	N/A	N/A	8.07	43.95	0.2	No NAPLs or sheen	4.35	47.36
MW-3A	759096.7	691444	50.32	49.97	N/A	NR	NR	N/A	7.92	42.05	0	No NAPLs or sheen	7.92	42.05
MW-3B	759098.4	691447	50.32	49.37	50.20	N/A	N/A	N/A	6.26	43.94	0	No NAPLs or sheen	5.51	43.86
MW-05	759147.6	691568.7	45.13	44.73	N/A	6.90	37.83	No NAPLs or sheen	6.77	37.96	0	NAPL on bottom of sample tubing	6.75	37.98
MW-06	759091.1	691623.3	43.16	42.94	N/A	8.14	34.80	No NAPLs or sheen	7.85	35.09	0	No NAPLs or sheen	7.95	34.99
MW-7A	759067.3	691339.8	51.64	51.30	N/A	10.05	41.25	No NAPLs or sheen	9.34	41.96	0	No NAPLs or sheen	8.90	42.40
MW-7B	759070.8	691345.2	51.75	51.33	N/A	9.88	41.45	No NAPLs or sheen	9.18	42.15	0	No NAPLs or sheen	6.45	44.88
MW-8A	759091.8	691163.8	51.77	51.39	N/A	2.49	48.90	No NAPLs or sheen	9.26	42.13	0	No NAPLs or sheen	9.30	42.09
MW-8B	759092.3	691158.9	51.69	51.25	51.46	N/A	N/A	No NAPLs or sheen	10.08	41.38	0	No NAPLs or sheen	9.90	41.35
MW-09	759185.3	691291.9	49.22	48.83	N/A	13.50	35.33	No NAPLs or sheen	11.87	36.96	0.6	No NAPLs or sheen	14.50	34.33
MW-10	758975.4	691253.5	52.05	51.82	N/A	9.20	42.62	No NAPLs or sheen	8.85	42.97	0	No NAPLs or sheen	5.00	46.82
MW-11A	758926	691544.8	45.75	45.39	N/A	6.10	39.29	No NAPLs or sheen	4.69	40.70	0.7	No NAPLs or sheen	3.93	41.46
MW-11B	758929.5	691550.4	45.67	45.09	45.13	N/A	N/A	N/A	9.49	35.64	0.7	No NAPLs or sheen	8.48	36.61
MW-12A	758949.7	691680.4	38.63	38.34	N/A	N/A	N/A	N/A	6.12	32.22	0	No NAPLs or sheen	5.07	33.27
MW-12B	758944.8	691672.6	39.15	38.32	38.80	N/A	N/A	N/A	4.55	34.25	0	No NAPLs or sheen	5.07	33.25

Ft AMSL - elevation in feet above mean sea level
TOR - top of riser

Table 2-3
Remedial Investigation Sample Summary
Cedar Street Works Former MGP Site
Consolidated Edison Company

Location	Sample ID	Depth (feet bgs)		TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Available Cyanide Method OIA-1677	VOCs Method TO-15	Forensics Analyses Methods 8100M and 8270M
		Beginning	Ending							
SOIL SAMPLES										
MW-02B	MW-02B (3.5-4)	3.5	4	X	X	X	X	--	--	--
	111413-DUP-1			X	X	X	X	--	--	--
MW-08A	MW-08A (9.5-10)	9.5	10	X	X	X	X	--	--	--
	MW-08A (2.7-2.9)	2.7	2.9	X	X	X	X	--	--	--
	MW-08A (15-16)	15	16	X	X	X	X	--	--	--
MW-08B	MW-08B (3-3.2)	3	3.2	X	X	X	X	--	--	--
	MW-08B (9.5-10.5)	9.5	10.5	X	X	X	X	--	--	--
	MW-08B (15-16)	15	16	X	X	X	X	--	--	--
MW-09	MW-09 (8.2-8.8)	8.2	8.8	X	X	X	X	--	--	--
	MW-09 (14.8-15.5)	14.8	15.5	X	X	X	X	--	--	--
MW-10	MW-10 (7-8.5)	7	8.5	X	X	X	X	--	--	--
	MW-10 (21-22)	21	22	X	X	X	X	--	--	--
MW-11A	MW-11A (3-3.5)	3	3.5	X	X	X	X	--	--	--
	MW-11A (8.5-9.5)	8.5	9.5	X	X	X	X	--	--	--
	MW-11A (11.5-12.7)	11.5	12.7	X	X	X	X	--	--	--
MW-12A	MW-12A (2.8-3.2)	2.8	3.2	X	X	X	X	--	--	--
	SBMW12A (7-8)	7	8	X	--	--	--	--	--	--
	SBMW12A (7-10)	7	10	--	X	X	X	--	--	--
	SBMW12A (10-11)	10	11	X	--	--	--	--	--	--
	SBMW12A (10-12)	10	12	--	X	X	X	--	--	--
SB-01	SB-1 (3.5-4)	3.5	4	X	X	X	X	--	--	--
SB-16	SB-16 (3.2-3.6)	3.2	3.6	X	X	X	X	--	--	--
	110113-DUP-1			X	X	X	X	--	--	--
	SB-16 (4.5-5)	4.5	5	X	X	X	X	--	--	--
	SB-16 (9-10)	9	10	X	X	X	X	--	--	--
	SB-16 (13-14)	13	14	X	X	X	X	--	--	--
	SB-16 (18-19)	18	19	X	X	X	X	--	--	X
SB-17	SB-17 (4-4.5)	4	4.5	X	X	X	X	--	--	--
	SB-17 (10.5-11.5)	10.5	11.5	X	X	X	X	--	--	--
	SB-17 (12.5-13.5)	12.5	13.5	X	X	X	X	--	--	--
	SB-17 (15-16)	15	16	X	X	X	X	--	--	--
SB-18	SB-18 (3-3.5)	3	3.5	X	X	X	X	--	--	--
	SB-18 (8.5-10)	8.5	10	X	X	X	X	--	--	--
	SB-18 (12.5-13.5)	12.5	13.5	X	X	X	X	--	--	--
	SB-18 (15.8-16.8)	15.8	16.8	X	X	X	X	--	--	--
	SB-18 (23-25)	23	25	X	X	X	X	--	--	--
SB-19	SB-19 (9-10)	9	10	X	X	X	X	--	--	--
	SB-19 (10.5-11.5)	10.5	11.5	X	X	X	X	--	--	X
	SB-19 (21.6-22.7)	21.6	22.7	X	X	X	X	--	--	--

Table 2-3
Remedial Investigation Sample Summary
Cedar Street Works Former MGP Site
Consolidated Edison Company

Location	Sample ID	Depth (feet bgs)		TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Available Cyanide Method OIA-1677	VOCs Method TO-15	Forensics Analyses Methods 8100M and 8270M
		Beginning	Ending							
SB-20	SB-20 (3-3.3)	3	3.3	X	X	X	X	--	--	--
	SB-20 (7-8)	7	8	X	X	X	X	--	--	--
	SB-20 (14.5-15.5)	14.5	15.5	X	X	X	X	--	--	--
SB-21	SB-21 (2.5-3.5)	2.5	3.5	X	X	X	X	--	--	--
	SB-21 (9-10)	9	10	X	X	X	X	--	--	--
	SB-21 (20.7-21.1)	20.7	21.1	X	X	X	X	--	--	--
	SB-21 (21.5-22.5)	21.5	22.5	X	X	X	X	--	--	--
	110713-DUP-1			X	X	X	X	--	--	--
SB-22	SB-22 (2-2.3)	2	2.3	X	X	X	X	--	--	--
	SB-22 (10-11.5)	10	11.5	X	X	X	X	--	--	--
	SB-22 (18.5-19.5)	18.5	19.5	X	X	X	X	--	--	--
SB-23	SB-23 (4.5-5)	4.5	5	X	X	X	X	--	--	--
	SB-23 (13.5-14)	13.5	14	X	X	X	X	--	--	--
	SB-23 (13-14)	13	14	--	--	--	--	--	--	X
SB-24	SB-24 (9-10)	9	10	X	X	X	X	--	--	--
	SB-24 (14-15)	14	15	X	X	X	X	--	--	--
SB-25	SB-25 (7.2-8.2)	7.2	8.2	X	X	X	X	--	--	--
	SB-25 (9-10)	9	10	X	X	X	X	--	--	--
	SB-25 (13-14)	13	14	X	X	X	X	--	--	--
SB-26	SB-26 (2.3-2.6)	2.3	2.6	X	X	X	X	--	--	--
	SB-26 (8-10)	8	10	X	X	X	X	--	--	--
	SB-26 (12.5-14.5)	12.5	14.5	X	X	X	X	--	--	--
	SB-26 (17.5-19.1)	17.5	19.1	X	X	X	X	--	--	--
SB-27	SB-27 (4-4.5)	4	4.5	X	X	X	X	--	--	--
	011114-DUP-1			X	X	X	X	--	--	--
	SB-27 (9-10)	9	10	X	X	X	X	--	--	--
	SB-27 (11-12.5)	11	12.5	X	X	X	X	--	--	--
	SB-27 (22-23.5)	22	23.5	X	X	X	X	--	--	--
SB-28	SB-28 (10-12)	10	12	X	X	X	X	--	--	--
	SB-28 (17-19)	17	19	X	X	X	X	--	--	--
	SB-28 (22-23)	22	23	X	X	X	X	--	--	--
SB-29	SB-29 (2.5-3)	2.5	3	X	X	X	X	--	--	--
	SB-29 (5.8-7)	5.8	7	X	X	X	X	--	--	--
	SB-29 (20.8-21.9)	20.8	21.9	X	X	X	X	--	--	--
SB-30	SB-30 (3-3.5)	3	3.5	X	X	X	X	--	--	--
	SB-30 (5.8-7.0)	5.8	7	X	X	X	X	--	--	--
SB-31	SB-31 (4-4.5)	4	4.5	X	X	X	X	--	--	--
	SB-31 (8.8-9.5)	8.8	9.5	X	X	X	X	--	--	--
	SB-31 (11.5-12.5)	11.5	12.5	X	X	X	X	--	--	--
	SB-31 (13-14.5)	13	14.5	X	X	X	X	--	--	--
SB-32	SB-32 (3-3.5)	3	3.5	X	X	X	X	--	--	--
	SB-32 (8.8-10)	8.8	10	X	X	X	X	--	--	--
TP-09	TP-9 (2.7-2.9)	2.7	2.9	X	X	X	X	--	--	--
	TP-9 (3.9-4.2)	3.9	4.2	X	X	X	X	--	--	--

Table 2-3
Remedial Investigation Sample Summary
Cedar Street Works Former MGP Site
Consolidated Edison Company

Location	Sample ID	Depth (feet bgs)		TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Available Cyanide Method OIA-1677	VOCs Method TO-15	Forensics Analyses Methods 8100M and 8270M
		Beginning	Ending							
GROUNDWATER SAMPLES										
MW-01	MW-1	NA		X	X	X	X	X	--	--
MW-02A	MW-2A	NA		X	X	X	X	X	--	--
MW-02B	MW-2B	NA		X	X	X	X	X	--	--
MW-03A	MW-3A	NA		X	X	X	X	X	--	--
MW-03B	MW-3B	NA		X	X	X	X	X	--	--
MW-05	MW-5	NA		X	X	X	X	X	--	--
MW-06	MW-6	NA		X	X	X	X	X	--	--
MW-07A	MW-7A	NA		X	X	X	X	X	--	--
MW-07B	MW-7B	NA		X	X	X	X	X	--	--
MW-08A	MW-8A	NA		X	X	X	X	X	--	--
MW-08B	MW-8B	NA		X	X	X	X	X	--	--
MW-09	MW-9	NA		X	X	X	X	X	--	--
MW-10	MW-10	NA		X	X	X	X	X	--	--
MW-11A	MW-11A	NA		X	X	X	X	X	--	--
	FD1-20140422	NA		X	X	X	X	X	--	--
MW-11B	MW-11B	NA		X	X	X	X	X	--	--
MW-12A	MW-12A	NA		X	X	X	X	X	--	--
MW-12B	MW-12B	NA		X	X	X	X	X	--	--
GWSB-23	GWSB-23 (13-14)	13	14	X	X	X	X	--	--	--
OUTDOOR AIR										
Ambient Air	AA-1	NA		--	--	--	--	--	X	--
	AA-2	NA		--	--	--	--	--	X	--
INDOOR AIR SAMPLES										
IA-1	IA-1	NA		--	--	--	--	--	X	--
	011214-DUP-1	NA		--	--	--	--	--	X	--
IA-10	IA-10	NA		--	--	--	--	--	X	--
IA-11	IA-11	NA		--	--	--	--	--	X	--
IA-12	IA-12	NA		--	--	--	--	--	X	--
IA-2	IA-2	NA		--	--	--	--	--	X	--
IA-3	IA-3	NA		--	--	--	--	--	X	--
IA-4	IA-4	NA		--	--	--	--	--	X	--
IA-5	IA-5	NA		--	--	--	--	--	X	--
IA-6	IA-6	NA		--	--	--	--	--	X	--
IA-7	IA-7	NA		--	--	--	--	--	X	--
IA-8	IA-8	NA		--	--	--	--	--	X	--
IA-9	IA-9	NA		--	--	--	--	--	X	--

Table 2-3
Remedial Investigation Sample Summary
Cedar Street Works Former MGP Site
Consolidated Edison Company

Location	Sample ID	Depth (feet bgs)		TCL VOCs Method 8260B	TCL SVOCs Method 8270C	TAL Metals Method 6010/7470/7471	Cyanide Method 9012B	Available Cyanide Method OIA-1677	VOCs Method TO-15	Forensics Analyses Methods 8100M and 8270M
		Beginning	Ending							
SUBSLAB SOIL VAPOR SAMPLES										
SVSB-04	SVSB-4	NA		--	--	--	--	--	X	--
SVSB-06	SVSB-6	NA		--	--	--	--	--	X	--
SVSB-07	SVSB-7	NA		--	--	--	--	--	X	--
SVSB-11	SVSB-11	NA		--	--	--	--	--	X	--
SG-01	SG-1	NA		--	--	--	--	--	X	--
	011314-DUP-1	NA		--	--	--	--	--	X	--
SG-02	SG-2	NA		--	--	--	--	--	X	--
SG-03	SG-3	NA		--	--	--	--	--	X	--
SG-04	SG-4	NA		--	--	--	--	--	X	--
SVSG-26	SVSG-26	NA		--	--	--	--	--	X	--
SVSG-27	SVSG-27	NA		--	--	--	--	--	X	--
SOIL VAPOR SAMPLES										
SVMW-02B	SVMW-02B (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVMW-08A	SVMW-08A (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVMW-09	SVMW-09 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVMW-10	SVMW-10 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVMW-11A	SVMW-11A (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-01	SVSB-1 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-02	SVSB-02 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-17	SVSB-17 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-18	SVSB-18 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-31	SVSB-31 (6.5-7)	6.5	7	--	--	--	--	--	X	--
SVSB-32	SVSB-32 (6.5-7)	6.5	7	--	--	--	--	--	X	--
	111913-Dup-1			--	--	--	--	--	X	--

bgs = Below ground surface
IA = Indoor air
MW = Monitoring well
SB = Soil Boring
SG= Soil Gas
SV = Soil Vapor
TP =Test Pit

Table 3-1
Vertical Hydraulic Gradient Calculations
Cedar Street Works Former MGP Site

Well Clusters	Well ID	Date	Measuring Point Reference Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	Screen Setting (feet bgs)	Ground Elevation (ft amsl)	Midpoint of Screen Elevation (ft amsl)	Vertical Separation (ft)	Vertical Gradient (ft/ft) 4/22/2014	Vertical Gradient (ft/ft) 7/17/2014	Vertical Flow Direction
Well Cluster MW-02A/02B	MW-02A	04/22/14 7/17/14	51.95 51.95	9.08 5.35	42.87 46.60	4.00 to 14.00 48.33 to 38.33	52.33	43.33	22.49	**(0.0480)**	**(0.0613)**	**Up**
	MW-02B	04/22/14 7/17/14	52.02 52.02	8.07 4.04	43.95 47.98	24.00 to 39.00 28.34 to 13.34	52.34	20.84				
Well Cluster MW-03A/03B	MW-03A	04/22/14 7/17/14	49.97 49.97	7.92 7.92	42.05 42.05	6.00 to 16.00 44.32 to 34.32	50.32	39.32	22.50	**(0.0840)**	**(0.1542)**	**Up**
	MW-03B	04/22/14 7/17/14	50.20 50.20	6.26 4.68	43.94 45.52	26.00 to 41.00 24.32 to 9.32	50.32	16.82				
Well Cluster MW-07A/07B	MW-07A	04/22/14 7/17/14	51.30 51.30	9.34 8.90	41.96 42.40	9.00 to 19.00 42.64 to 32.64	51.64	37.64	20.89	**(0.0091)**	**(0.1187)**	**Up**
	MW-07B	04/22/14 7/17/14	51.33 51.33	9.18 6.45	42.15 44.88	30.00 to 40.00 21.75 to 11.75	51.75	16.75				
Well Cluster MW-08A/08B	MW-08A	04/22/14 7/17/14	51.39 51.39	9.26 9.30	42.13 42.09	5.00 to 15.00 46.77 to 36.77	51.77	41.77	23.08	**0.0325**	**0.0139**	**Down**
	MW-08B	04/22/14 7/17/14	51.46 51.46	10.08 9.69	41.38 41.77	28.00 to 38.00 23.69 to 13.69	51.69	18.69				
Well Cluster MW-11A/11B	MW-11A	04/22/14 7/17/14	45.39 45.39	4.69 3.93	40.70 41.46	4.50 to 12.50 41.25 to 33.25	45.75	37.25	24.98	**0.2026**	**0.1910**	**Down**
	MW-11B	04/22/14 7/17/14	45.13 45.13	9.49 8.44	35.64 36.69	25.90 to 40.90 19.77 to 4.77	45.67	12.27				
Well Cluster MW-12A/12B	MW-12A	04/22/14 7/17/14	38.34 38.34	6.12 5.07	32.22 33.27	4.00 to 14.00 34.63 to 24.63	38.63	29.63	23.98	**(0.0847)**	**(0.0392)**	**Up**
	MW-12B	04/22/14 7/17/14	38.80 38.80	4.55 4.59	34.25 34.21	26.00 to 41.00 13.15 to -1.85	39.15	5.65				

amsl - elevation in feet above mean sea level

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-01	12/16/2008	12/16/08	10	12	Fill. Sand, silt, gravel, and cobbles.	Fine Sand, some Silt.	Medium Sand, some Silt and weathered Rock.							No impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0. No odor.							
					SB-01 (3.5-4') BTEX: ND VOCs: ND PAHs: 11.04 ppm SVOCs: 11.04ppm CN: ND	**SB-1 (9-11')** BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.047 ppm CN: ND **Soil Vapor Sample SVSB-1 (6.5-7')**	**SB-1 (11-13')** BTEX: ND VOCs: ND PAHs: 1.355 ppm SVOCs: 1.399 ppm CN: ND							
SB-02	12/2/2008	12/16/08	10	24.5	Fill. Asphalt over gravel subbase. Sand, silt, gravel, concrete, and brick.	Fill. Sand, some Silt, and rock fragments.	Sands some Silt and gravel.	Sands some Silt and gravel.	Sands some Silt and gravel.					No impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.					
						SB-2 (9-11') BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.1 ppm CN: ND **Soil Vapor Sample SVSB-2 (6.5-7')**			**SB-2 (23-25')** BTEX: ND VOCs: ND PAHs: 0.138 ppm SVOCs: 0.678 ppm CN: ND				
SB-03	12/9/2008	12/18/08	10	15.4	Fill. Asphalt over trap Rock and Boulders.	Fill. Weathered Schist and rock fragments.	Fill. Sand, some Gravel and weathered Rock, stained.							Hydrocarbon odor 10-13'. META indicated middle tar fraction, possibly drip oil or naphthalene oil.
					PID=0.0 No odor.	PID=34.9 - 4.1 ppm No odor.	PID=55.1 - 2266 ppm Hydrocarbon odor.							
							SB-3 (11-13') BTEX: 23.6 ppm VOCs: 25.84 ppm PAHs: 19.72 ppm SVOCs: 20.559 ppm CN: ND **SB-3 (13') + META Sample (13')** BTEX: 11,500 ppm VOCs: 13,254 ppm PAHs: 6,317.2 ppm SVOCs: 6,383.3 ppm CN: ND						

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-04	12/14/2008	12/21/08	10	24	Fill. Concrete over Sand.	Fill. Sand, some Silt, trace Gravel.	Fill. Sand, some Silt, trace Gravel and weathered Schist.	Fill. Sand, some Silt and Gravel and black staining.	Fill. Sand and Silt, some Gravel and wood with black staining.					Hydrocarbon odor 10-15' and 20-24'. META indicated no detectable pattern.
					PID=0.0 No odor.	PID=42.3 No odor.	PID=3-5.8 ppm Slight - Strong hydrocarbon odor 10-15'	PID=10.1-10.8 ppm. No odor.	PID=0-56.7 ppm. Hydrocarbon odor 20-24'					
							SB-4 (13-15') + META Sample BTEX: 0.075 ppm VOCs: 0.075 ppm PAHs: 6.5 ppm SVOCs: 6.5 ppm CN: ND	**SB-4 (21-23')** BTEX: 34.4 ppm VOCs: 35.379 ppm PAHs: 125.1 ppm SVOCs: 130.6 ppm CN: 26 ppm	**SB-4 (23-25')** BTEX: 0.734 ppm VOCs: 0.75 ppm PAHs: 186.32 ppm SVOCs: 197.32 ppm CN: ND					
SB-05	1/4/2009	1/4/09	10	23	Fill. Concrete over trap Rock, Sand and Gravel. PID=0.0 No odor.	Fill. Sand, some Silt, trace Gravel, and weathered Gneiss. Stained black 8-10'. PID=1.7-4.4 ppm No odor.	Fill. Sand and Silt, with Gravel. Stained black @ 10 and 14'. PID=0.9-6.2 ppm Hydrocarbon odor 12-15'.	Fill. Sand and Silt, with Gravel. Stained black 15 - 20'. PID=0.9 ppm No odor. **SB-5 (19-21')** BTEX: 0.052 ppm VOCs: 0.052 ppm PAHs: 11.84 ppm SVOCs: 11.84 ppm CN: ND	Fill. Sand and Silt, with Gravel. Stained black 20-23'. PID=0-6.2 ppm No odor. **SB-5 (21-23') + META Sample** BTEX: 0.154 ppm VOCs: 0.154 ppm PAHs: 5.69 ppm SVOCs: 5.69 ppm CN: 4.4 ppm					Hydrocarbon odor 12-15'. META indicated likely source was weathered Tar-Like Material.
SB-06	1/4/2009	1/4/09	10	21.5	Fill. Concrete over Sand, Gravel, and Silt, with Bricks, Glass, and Slag.	Fill. Sand, some Gravel and Bricks to 8', over Silt.	Silt, little Sand, some Clay. Stained 11-13'.	Silt and Sand, trace Gravel.	Weathered Schist.					Hydrocarbon odor 18-21.5'
					PID=0.0 No odor.	PID=0.1-1.2 ppm No odor.	PID=5.1-55.5 ppm No odor.	PID=15.1-23.5 ppm Hydrocarbon odor 18-20'	PID=0.7 ppm Hydrocarbon odor 20-21.5'					
							SB-6 (11-13') BTEX: 80.46 ppm VOCs: 129.71 ppm PAHs: 898.5 ppm SVOCs: 936.9 ppm CN: 2.55 ppm	**SB-6 (19-21')** BTEX: 0.146 ppm VOCs: 0.208 ppm PAHs: 75.01 ppm SVOCs: 78.19 ppm CN: ND						
SB-07	12/2/2008	12/16/08	8	17	Fill. Concrete over gravel subbase. Sand, silt, gravel, concrete, and brick.	Fill. Sand, Silt, and Gravel.	Fill to 13'. Sands and silty sands.	Silty sand and gravel. Refusal 17'.						Hydrocarbon odor 8-14' and 16-17'
					PID=0.0 No odor.	PID=2.4 - 3.3 ppm Hydrocarbon odor 8-10'	PID=6.4 - 187 ppm Hydrocarbon odor 10-14'	PID=50.2 ppm Hydrocarbon odor 16-17'						
							SB-7 (11-13') BTEX: 263.1 ppm VOCs: 275.16 ppm PAHs: 1,524.8 ppm SVOCs: 1,631.06 ppm CN: 1.07 ppm	**SB-7 (15-17')** BTEX: 2.5 ppm VOCs: 2.5 ppm PAHs: 205.6 ppm SVOCs: 213.4 ppm CN: 0.978 ppm						

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-08	12/3/2008	12/3/08	NA	2.5	Fill. Asphalt over gravel subbase and Sand, Silt, and Gravel with Concrete, Metal, and Wood.									No impacts.
					PID=0.0 No odor.									
SB-09	12/2/2008	12/16/08	NA	7.5	Fill. Asphalt over gravel subbase and Sand, Silt, and Gravel with Concrete, and Bricks.	Gravel, Silt, and Sand to 7' over Silt.								No impacts.
					PID=0.0 No odor.	PID=0.2 No odor.								
						SB-9 (7-9') BTEX: ND VOCs: 0.22 ppm PAHs: 34.49 ppm SVOCs: 34.49 ppm CN: ND							
SB-10	12/21/2008	1/4/09	10	25	Fill. Concrete over Sand and Silt, with Cobbles, Boulders, and Gravel.	Fill. Gravel and Sand with cold patch to 9' over Silt.	Fill. Silt, little Sand, trace Gravel to 13' over Sand, little Silt, trace Gravel.	Sand, little Silt, trace Gravel.	Sand, little Silt, trace Gravel.					No impacts.
					PID=0.0 No odor.	PID=0-14.4 ppm No odor.	PID=0-3.4 ppm No odor.	PID=1.4 - 2.1 ppm No odor.	PID=1.3 - 5.3 ppm No odor.					
								SB-10 (19-21') BTEX: 0.445 ppm VOCs: 0.526 ppm PAHs: 10.199 ppm SVOCs: 10.899 ppm CN: ND						
SB-11	12/21/2008	12/21/08	10	23	Fill. Concrete over Sand, Gravel, Cobbles, Asphalt, and Concrete.	Fill. Sand, some Silt and Gravel.	Fill. Sand, some Silt and Gravel.	Fill. Sand, some Silt and Gravel.	Fill. Sand, some Silt and Gravel.					Hydrocarbon odor 5-10' and 19-21'.
					PID=0.0 No odor.	PID=0-1.6 ppm Hydrocarbon odor 5-10'.	PID=1.5-2.6 ppm No odor.	PID=1.6-3.5 ppm Hydrocarbon odor 19-21'.	PID=205 ppm Hydrocarbon odor 19-21'.					
								SB-11 (17-19') BTEX: 0.792 ppm VOCs: 0.82 ppm PAHs: 8.93 ppm SVOCs: 9.65 ppm CN: ND	**SB-11 (19-21')** BTEX: 0.42 ppm VOCs: 0.432 ppm PAHs: 23 ppm SVOCs: 24.34 ppm CN: ND					

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-12/MW-07B	12/2/2008	1/13/09	10	19	Fill. Asphalt over Gravel subbase to 8"', over Sand, Silt, Gravel, and Concrete and Brick to 5'.	Fill. Sand and Silt, some Gravel and Brick.	Fill. Sand, Silt, and Gravel, some Brick at 14'.	Fill. Sand, Silt, and Gravel, over Gneiss with Schist lenses. Black staining in rock throughout.						Faint MGP odor 5-10'. Strong naphthalene odor 10-14', and MGP naphthalene odor 17.5-19' and NAPL tar 18-19'.
					PID=0.0 No odor.	PID=42.3 Faint MGP odor 5-10'.	PID=92.1 Strong naphthalene odor 10-14'	PID=12.5. MGP and naphthalene odor 17.5-19'. NAPL tar 18-19'.						
							SB-12 (11-13') BTEX: 1.002 ppm VOCs: 4.702 ppm PAHs: 122.85 ppm SVOCs: 131.29 ppm CN: ND	**SB-12 (17-19')** BTEX: 113.3 ppm VOCs: 151.3 ppm PAHs: 158.49 ppm SVOCs: 166.24 ppm CN: ND						
SB-13	12/9/2008	12/16/08	10	15	Fill. Asphalt over trap Rock and Silt with some Sand. Boulders.	Fill. Black Ash and Cinder.	Fill. Sand, some Silt. Stained black 14-15'.Sands and silty sands.							Undifferentiated odor 5-10'. META indicated sample was characteristic of Tar-Like-Material likely from CWG process.
					PID=0.0 No odor.	PID=15.2-30.1 ppm Undifferentiated odor.	PID=30.1 - 118 ppm No odor.							
						SB-13 (11-13') BTEX: ND VOCs: 0.11 ppm PAHs: 29.19 ppm SVOCs: 30.69 ppm CN: ND	**SB-13 (13-15')** BTEX: 5.568 ppm VOCs: 7.258 ppm PAHs: 79.69 ppm SVOCs: 82.59 ppm CN: ND **META Sample (14-15')**						
SB-14	12/10/2008	12/16/08	10	24	Fill. Grass layer over Sand, Silt, Clay, and Gravel to 1.5'. Sand & Silt, and Gravel to 5'.	Sand, some Silt.	Sand, some Silt, and little Gravel.	Sand, trace Silt, and little Gravel.	Sand, trace Silt, and little-some Gravel.					No impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.					
						SB-14 (9-11') BTEX: ND VOCs: ND PAHs: 0.16 ppm SVOCs: 0.206 ppm CN: ND			**SB-14 (23-25')** BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.039 ppm CN: ND					
SB-15	1/6/2009	1/12/09	10	22	Fill. Asphalt over Sand and Gravel to 5'.	Fill. Sand, weathered Schist, trace Silt, some Gravel.	Fill. Sand and Gravel. Stained black to 10'.	Fill. Sand and Gravel. Stained black to 15'. Schist 17-22'.	Schist to 22'.					Hydrocarbon odor 5-17'.
					PID=0.0 No odor.	PID=0.8-1.1 ppm Hydrocarbon odor 5-10'.	PID=16-1002 ppm Hydrocarbon odor 10-15'.	PID=1209 ppm Hydrocarbon odor 15-17'.						
							SB-15 (13-15') BTEX: 3,830 ppm VOCs: 3,989 ppm PAHs: 10,899 ppm SVOCs: 11,045.5 ppm CN: 1.92 ppm	**SB-15 (15-17')** BTEX: 7,770 ppm VOCs: 8,098 ppm PAHs: 11,897.7 ppm SVOCs: 12,179.7 ppm CN: 2.52 ppm						

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Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-16	11/1/2013	11/7/13	10	19	Fill. Concrete over Sand, some Clay, Cinders, and Gravel.	Silty sands, sandy silts and clay.	Sands and silty sands.	Silty sand and gravel. Refusal 19'.						MGP impacts. META reported pyrogenic materials and probable source from CWG; with gasoline component.
					PID=0.0-0.7 No odor.	PID=0-13.6 ppm Slight - moderate MGP odor 5-10'.	PID=92.1 Slight-moderate naphthalene odor 10-15'	PID=12.5. MGP and naphthalene odor 17.5-19'. NAPL tar 18-19'.						
					SB-16 (3.2-3.6') BTEX: ND VOCs: 0.017 ppm PAHs: 6.98 ppm SVOCs: 7.09 ppm CN: ND **SB-16 (4-5.5')** BTEX: ND VOCs: ND PAHs: 208.65 ppm SVOCs: 208.65 ppm CN: 46.6 ppm	**SB-16 (9-10')** BTEX: 0.0079 ppm VOCs: 0.2679 ppm PAHs: 85.86 ppm SVOCs: 85.86 ppm CN: ND	**SB-16 (13-14')** BTEX: ND VOCs: 0.0165 ppm PAHs: 2.441 ppm SVOCs: 2.551 ppm CN: ND	**SB-16 (18-19') + META Sample** BTEX: 6.924 ppm VOCs: 13.159 ppm PAHs: 94.61 ppm SVOCs: 99.63 ppm CN: ND						
SB-17	11/20/13	11/22/13	11	16	Fill. Silt and Sand, some Gravel, trace Concrete.	Silt, trace Sand and Clay.	Silt and Sand, trace Gravel.	Silt and sand. Refusal 16'.						MGP odor 10.5-12.3'
					PID=0-0.4 ppm No odor.	PID=0.2 ppm No odor.	PID=2.9-6.1 ppm MGP-like odor 10.5-12.3'. Undifferentiated chemical odor 12.3-15'.	PID=1.1 ppm No odor.						
					SB-17 (4-4.5') BTEX: 0.0078 ppm VOCs: 0.0178 ppm PAHs: 791.7 ppm SVOCs: 800.78 ppm CN: ND	**S. Vapor sample SVSB-17 (6.5-7')**	**SB-17 (10.5-11.5')** BTEX: ND VOCs: 0.0447 ppm PAHs: 5.331 ppm SVOCs: 5.331 ppm CN: 3.8 ppm **SB-17 (12.5-13.5')** BTEX: ND VOCs: 0.0642 ppm PAHs: 42 ppm SVOCs: 42.8 ppm CN: ND	**SB-17 (15-16')** BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.088 ppm CN: 2.2 ppm						
SB-18	11/20/13	11/22/13	10.5	25	Fill. Asphalt over Sand, some Gravel.	Sand, some Silt and gravel.	Sands and silty sands, trace gravel and clay.	Sands and gravels, trace silt.	Sands and gravels. No refusal.					MGP impacts with strong MGP odor, staining, and sheen.
					PID=0-9.7 ppm Faint diesel odor 2.9-5'.	PID=50.6 ppm Faint MGP-like odor 5-8.5'. Strong at 8.5'.	PID=147 - 1017 ppm Strong MGP-like odor 10-15'. Staining 13-15'.	PID=17.3 - 689 ppm Strong MGP odor. Sheen.	PID=0-18.9 ppm Faint MGP odor.					
					SB-18 (3-3.5') BTEX: 0.633 ppm VOCs: 0.8621 ppm PAHs: 1,464 ppm SVOCs: 1,536.6 ppm CN: 2.1 ppm	**SB-18 (8.5-10')** BTEX: 35 ppm VOCs: 75.06 ppm PAHs: 522.9 ppm SVOCs: 545.5 ppm CN: ND **S. Vapor sample SVSB-18 (6.5-7')**	**SB-18 (12.5-13.5')** BTEX: 24.3 ppm VOCs: 68.2 ppm PAHs: 358.3 ppm SVOCs: 376.92 ppm CN: ND	**SB-18 (15.8-16.8')** BTEX: 3.01 ppm VOCs: 14.34 ppm PAHs: 4,457 ppm SVOCs: 4,718 ppm CN: ND	**SB-18 (23-25')** BTEX: ND VOCs: 0.0036 ppm PAHs: 0.951 ppm SVOCs: 1.117 ppm CN: ND					

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-19	11/1/13 and 11/5/13	11/07/13	10	22.7	Fill. Asphalt over Gravel, Sand, Silt, and Cobbles.	Sand and Silt, trace gravel, some Schist rock.	Sand, some Silt, trace Gravel.	Silty sands, some gravel. Decomposed schist rock at 18.5'.	Decomposed schist bedrock. Refusal at 22.7'.					Undifferentiated chemical impacts. META reported pyrogenic materials and probable tar source from CWG; with some gasoline component.
					PID=0.0 No odor.	PID=1.9 - 20.9 ppm Undifferentiated chemical odor 8.3-10'.	PID=2.9 - 1425 ppm Strong undifferentiated chemical odor 10-14'.	PID=0.7 -2.9 ppm No odor.	PID=0.2 ppm No odor.					
						SB-19 (9-10') BTEX: 0.208 ppm VOCs: 0.589 ppm PAHs: 14.97 ppm SVOCs: 15.81 ppm CN: ND	**SB-19 (10.5-11.5') + META Sample** BTEX: 0.921 ppm VOCs: 4.436 ppm PAHs: 89.28 ppm SVOCs: 94.38 ppm CN: ND		**SB-19 (21.6-22.7')** BTEX: 0.0037 ppm VOCs: 0.0113 ppm PAHs: ND SVOCs: ND CN: ND					
SB-20	10/31/13	10/31/13	8.5	15.5	Fill. Asphalt over Sand, Silt, and Gravel.	Sand and Silt.	Silty sand and gravel.	Weathered Schist. Refusal 15.5'.						No impacts.
					PID=0.1 ppm No odor.	PID=0.2 ppm No odor.	PID=0.1 - 0.2 ppm No odor.	PID=2.4 ppm No odor.						
					SB-20 (3-3.3') BTEX: ND VOCs: 0.0286 ppm PAHs: 0.986 ppm SVOCs: 0.986 ppm CN: ND	**SB-20 (7-8')** BTEX: ND VOCs: 0.0285 ppm PAHs: ND SVOCs: ND CN: ND		**SB-20 (14.5-15.5')** BTEX: ND VOCs: 0.0044 ppm PAHs: ND SVOCs: ND CN: ND					
SB-21	11/04/13	11/07/13	10.5	22.5	Fill. Asphalt over Sand and Silt, some Gravel.	Silt and Sand, some gravel.	Sand, some Silt and Gravel.	Sand, trace Gravel.	Silts, sands, gravels & weathered schist at 21.1'. Refusal at 22.5'.					MGP impacts with MGP odor. Sheen in seam 13.8 - 14'.
					PID=0.2 Faint undifferentiated chemical odor 2.5-5'.	PID=46.7 - 67.5 ppm MGP-like odor.	PID=20.1- 46.7 ppm MGP-like odors. Faint below 11.3'. Sheen in seam 13.8-14'.	PID=20.1 ppm Very faint MGP-like odor.	PID=16.1 - 81.5 ppm Strong MGP-like odor 20.7-21.1'. Faint below in weathered schist.					
					SB-21(2.5-3.5') BTEX: 0.0035 ppm VOCs: 0.0995 ppm PAHs: 288.3 ppm SVOCs: 300.07 ppm CN: ND	**SB-21 (9-10')** BTEX: 10.97 ppm VOCs: 15.7897 ppm PAHs: 762.7 ppm SVOCs: 818.7 ppm CN: ND			**SB-21 (20.7-21.1')** BTEX: 0.0101 ppm VOCs: 0.2734 ppm PAHs: 146.46 ppm SVOCs: 150.26 ppm CN: ND **SB-21 (21.5-22.5')** BTEX: ND VOCs: 0.0053 ppm PAHs: 6.62 ppm SVOCs: 6.62 ppm CN: ND					

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-22	10/31/13	10/31/13	11	26	Fill. Asphalt over Sand, trace Gravel.	Silt, some Sand, trace Gravel.	Silt and Sand, trace Gravel.	Silt, sands and gravels. Weathered Schist below 19'. Refusal at 19.5' with DPT.	Weathered Schist and Gneiss. Rock cored 20.5-26'.					No impacts.
					PID=0 - 0.1 ppm MGP-like odor 2-5.3'	PID=3.5 - 4.5 ppm No odor.	PID=22.9-27.1 ppm No odor.	PID=0 - 2.3 ppm No odor.	PID=0. No impacts in Rock. No odor.					
					SB-22 (2-2.3') BTEX: 0.0041 ppm VOCs: 0.0509 ppm PAHs: 211.05 ppm SVOCs: 215.05 ppm CN: ND		**SB-22 (10-11.5')** BTEX: ND VOCs: 0.008 ppm PAHs: ND SVOCs: ND CN: ND	**SB-22 (18.5-19.5')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND					
SB-23	11/04/13	11/05/13	9.5	14	Fill. Asphalt over Sand and Silt, trace Gravel and Schist Cobbles.	Fill. Silts, sand and gravel. Wood chips at 9.9-10'.	Fill. Wood chips. Bottom 0.15' concrete and brick. Refusal at 14'.							MGP impacts. META reported most likely tar-like materials consistent with CWG tars.
					PID=0 - 1.6 ppm Waste oil odor 1.4-5'.	PID=11.8 ppm MGP odor in the wood chips.	PID=109 ppm MGP odor and slight sheen.							
					SB-23 (4.5-5') BTEX: ND VOCs: 0.031 ppm PAHs: 256.23 ppm SVOCs: 268.33 ppm CN: ND		**SB-23 (13.5-14') + META Sample** BTEX: 167 ppm VOCs: 256.399 ppm PAHs: 1,690.7 ppm SVOCs: 1,799.7 ppm CN: ND	**Groundwater grab sample SB-23 (13-14')** BTEX: 2.810 ppm VOCs: 2.810 ppm PAHs: 6.882 ppm SVOCs: 6.962 ppm CN: ND					
SB-24	11/04/13	11/07/13	10	15	Fill. Asphalt over Sand and Silt, some Gravel, and Cobbles.	Fill to 6.5'. Sand and Silt, trace Gravel.	Sand and Silt, trace - some Gravel. Weathered Schist at 14.2'. Refusal at 15'.							MGP impacts. Faint MGP odor 3.5-5' and undifferentiated chemical odor at 7.3'.
					PID=0-1.1 ppm Faint MGP-like odor 3.5-5'.	PID=2-8.5 ppm Faint undifferentiated chemical odor at 7-7.3'. No odor after 7.3'.	PID=0.1 ppm No odor.							
						SB-24 (9-10') BTEX: ND VOCs: 0.0186 ppm PAHs: 1.314 ppm SVOCs: 2.859 ppm CN: ND	**SB-24 (14-15')** BTEX: ND VOCs: 0.0037 ppm PAHs: ND SVOCs: ND CN: ND						

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-25	11/4/2013 and 11/5/13	11/07/13	10	14	Fill. Asphalt over Sand and Silt, some Gravel and Schist Cobbles.	Fill to 6.5'. Silt and Sand to 8', over Sand, trace Silt and Gravel.	Sand, trace Silt and Gravel. Refusal at 14'.							Undifferentiated chemical impacts.
					PID=0.0 No odor.	PID=7.3-113 ppm Undifferentiated chemical odor 5 to 10', strongest 7.2-8.2'.	PID=0.1-0.3 ppm Very faint undifferentiated chemical odor 10-12.5'.							
						SB-25-(7.2-8.2') BTEX: 14.56 ppm VOCs: 19.0863 ppm PAHs: 3,226 ppm SVOCs: 3,498 ppm CN: ND	**SB-25 (9-10')** BTEX: 0.369 ppm VOCs: 0.5074 ppm PAHs: 114.55 ppm SVOCs: 128.509 ppm CN: ND **SB-25 (13-14')** BTEX: 0.0058 ppm VOCs: 0.0127 ppm PAHs: 0.093 ppm SVOCs: 0.093 ppm CN: ND						
SB-26	01/11/14	01/12/14	9	19.1	Fill. Concrete over Sand, Gravel, Silt, Schist Cobbles to 8'.	Fill. Concrete over Sand, Gravel, Silt, Schist Cobbles to 8'. Silt, some Sand, trace Gravel.	Silt, some Sand to 11.5'. Sand, some Silt and Gravel to 14.8'.	Silt, some Sand and Gravel to 19.1'.						MGP odor 5 to 11.5', strongest 7.5-8'. Sheenand staining 12.5-14.8'.
					PID=0.0 Naphthalene odor to 3.5'.	PID=31.3-172 ppm MGP odor 5 to 11.5', strongest 7.5-8'.	PID=242-384 ppm Strong MGP odor throughout. Sheen and staining 12.5-14.8'.	PID=7.1-904.4 ppm Faint MGP odor.						
					SB-26 (2.3-2.6') BTEX: 0.0049 ppm VOCs: 0.0294 ppm PAHs: 961.9 ppm SVOCs: 968.093 ppm CN: 22.5 ppm	**SB-26 (8-10')** BTEX: 197 ppm VOCs: 346.7 ppm PAHs: 71.05 ppm SVOCs: 75.79 ppm CN: ND	**SB-26 (12.5-14.5') + META Sample** BTEX: 2.34 ppm VOCs: 18.82 ppm PAHs: 267.42 ppm SVOCs: 292.1 ppm CN: ND	**SB-26 (17.5-19.1')** BTEX: 0.0024 ppm VOCs: 0.0062 ppm PAHs: ND SVOCs: ND CN: ND						
SB-27	01/11/14	01/12/14	10	23.3	Fill. Concrete over Sand, Gravel, Silt, Gneiss Cobbles to 6'.	Fill. Concrete over Sand, Gravel, Silt, Gneiss Cobbles to 6'.over Silt and Sand, trace Gravel.	Sand, trace Silt and Gravel.	Sand and Gravel, trace Silt.	Gravel, trace Silt. Refusal at 23.3'.					Faint MGP odor and sheen.
					PID=0.0 No odor.	PID=1.4 ppm No odor.	PID=1.4-7.7 ppm Faint MGP odor.	PID=2.1-6.2 ppm Faint MGP odor.	PID=2.4 ppm Faint MGP odor and sheen.					
					SB-27 (4-4.5') BTEX: ND VOCs: 0.0091 ppm PAHs: 47.372 ppm SVOCs: 47.492 ppm CN: 1.1 ppm	**SB-27 (9-10')** BTEX: 0.0133 ppm VOCs: 0.0676 ppm PAHs: 203.1 ppm SVOCs: 211.4 ppm CN: ND	**SB-27 (11-12.5')** BTEX: 0.035 ppm VOCs: 0.1109 ppm PAHs: 45.23 ppm SVOCs: 51.43 ppm CN: ND		**SB-27 (22-23.5')** BTEX: ND VOCs: 0.1516 ppm PAHs: 21.387 ppm SVOCs: 22.827 ppm CN: 1.7 ppm					

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Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
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Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-28	01/11/14	01/12/14	10	23	Fill. Concrete over Sand, Gravel, Silt, Schist Cobbles to 5'.	Fill. Gravel some Silt and Sand, trace Brick.	Fill. Gravel some Silt and Sand, trace Brick.	Fill. Gravel some Silt and Sand. Some Refractory Brick to 17', over Sand and Gravel, some Silt.	Silt and Clay, trace Gravel. Refusal at 23'.					MGP impacts. Faint MGP odor 10-25' and sheen 17-20'.
					PID=0.0 No odor.	PID=1.1 ppm No odor.	PID=1.4-1.8 ppm Faint MGP odor.	PID=1.8 ppm Faint MGP odor and sheen 17-20'.	PID=1.8 ppm Faint- strong MGP odor.					
							SB-28 (10-12') BTEX: 0.0435 ppm VOCs: 0.0696 ppm PAHs: 4.29 ppm SVOCs: 4.58 ppm CN: ND	**SB-28 (17-19')** BTEX: 0.0345 ppm VOCs: 0.0768 ppm PAHs: 20.9 ppm SVOCs: 23.11 ppm CN: ND	**SB-28 (22-23')** BTEX: 0.891 ppm VOCs: 1.123 ppm PAHs: 716.8 ppm SVOCs: 750 ppm CN: ND					
SB-29	01/11/14	01/12/14	5.8	22.6	Fill. Concrete over Sand and Granitic Cobbles to 5'.	Fill. Sand, Silt, and Gravel, some Brick.	Fill. Gravel some Silt and Sand, trace Brick.	Fill. Gravel some Silt and Sand. Some Refractory Brick to 20'.	Sand and Silt, trace Gravel. Refusal at 22.6'.					Faint MGP odor 14-15' and 20-22.6'.
					PID=0.0 No odor.	PID=1.1 ppm No odor.	PID=2.0-9.8 ppm Faint MGP odor 14-15'.	PID=1.8 ppm No odor.	PID=4.2-137.1 ppm Faint Naphthalene MGP odor.					
					SB-29 (2.5-3') BTEX: ND VOCs: 0.0039 ppm PAHs: 21.89 ppm SVOCs: 22.188 ppm CN: ND	**SB-29 (5.8-7')** BTEX: ND VOCs: 0.0096 ppm PAHs: 15.92 ppm SVOCs: 16.26 ppm CN: ND			**SB-29 (20.8-21.9')** BTEX: 4.34 ppm VOCs: 9.14 ppm PAHs: 106.33 ppm SVOCs: 108.17 ppm CN: 6.6 ppm					
SB-30	11/15/13	11/19/13	Not observed to depth drilled.	7	Fill. Asphalt to 0.35', over Sand and Silt, some Gravel and Schist Cobbles.	Silt, sands and gravels. Refusal at 7'.								No impacts.
					PID=0.2 ppm No odor.	PID=0.1 ppm No odor.								
					SB-30 (3-3.5') BTEX: ND VOCs: ND PAHs: 19.4 ppm SVOCs: 19.891 ppm CN: 0.61 ppm	**SB-30 (5.8-7')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND								

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
SB-31	11/20/13	11/20/13	9.5	14.9	Fill. Asphalt over Sand and Gravel, some Silt and Schist Cobbles.	Sand, some Silt and Gravel. Silt, trace Gravel at 8.75'.	Silt, trace Sand and Gravel to 11', over Sand, some Silt, trace Gravel to 14.5', over weathered Schist at 14.5-14.9'. Refusal at 14.9'.							MGP impacts. MGP odors 4.5 - 9.5' and 10-14.5'.
					PID=0-64.1 ppm MGP-like odor at 4.5-5'.	PID=1.9-6.5 ppm Faint MGP odor 5-9.5'.	PID=3.3-883 ppm Faint MGP odor 10-11. Strong MGP odor 11-14.5'. No odors 14.5-14.9'.							
					SB-31 (4-4.5') BTEX: ND VOCs: ND PAHs: 88.97 ppm SVOCs: 88.97 ppm CN: 4.2 ppm	**SB-31 (8.8-9.5')** BTEX: 0.0596 ppm VOCs: 0.2522 ppm PAHs: 228.73 ppm SVOCs: 233.43 ppm CN: ND **S. Vapor sample SVSB-31 (6.5-7')**	**SB-31 (11.5-12.5')** BTEX: 0.58 ppm VOCs: 15.17 ppm PAHs: 572.9 ppm SVOCs: 585.54 ppm CN: ND **SB-31 (13-14.5')** BTEX: 1.9 ppm VOCs: 12.33 ppm PAHs: 177.85 ppm SVOCs: 183.041 ppm CN: ND							
SB-32	11/15/13	11/19/13	10	10.2	Fill. Silt, sand, gravel, glass and steel.	Silt, sands and gravels. Refusal at 10.2'.								No Impacts.
					PID=0.1 No odor.	PID=0.2 No odor.								
					SB-32 (3-3.5') BTEX: ND VOCs: ND PAHs: 18.804 ppm SVOCs: 18.999 ppm CN: ND	**SB-32 (8.8-10')** BTEX: ND VOCs: 0.0036 ppm PAHs: ND SVOCs: ND CN: ND **S. Vapor sample SVSB-32 (6.5-7')**								
Monitoring Wells:														
MW-01	12/15/08	12/19/2008	11	18	Fill. Grass layer over Sand, Silt, Clay, Cobbles, and Brick.	Fill. Sand, some Gravel to 7', over Silt, some Sand, little Gravel to 10'.	Sand, some Silt.	Sand, some Gravel, trace Silt.						No impacts.
					PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.						
						MW-1 (9-11') BTEX: ND VOCs: ND PAHs: 0.039 ppm SVOCs: 0.079 ppm CN: ND		**MW-1 (17-19')** BTEX: ND VOCs: ND PAHs: 0.048 ppm SVOCs: 0.268 ppm CN: ND						

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
MW-02A	12/10/08	12/15/2008	7.5	14	Fill. Grass layer over Sand, Silt, Clay, Cobbles, and Brick.	Sand and Silt, some Gravel.	Sand and Silt, some Gravel, weathered Schist at 13'.							No impacts.
					PID=0 No odor.	PID=0 No odor.	PID=0 No odor.							
						MW-2A (7-9') BTEX: ND VOCs: ND PAHs: 1,914 ppm SVOCs: 1,978.7 ppm CN: 1.24 ppm	**MW-2A (13-15')** BTEX: 0.82 ppm VOCs: 0.9 ppm PAHs: 183.9 ppm SVOCs: 192.26 ppm CN: ND						
MW-02B	11/14/13	1/20-3/26/14	7.5	39	Fill. Grass layer over Sand, Silt, Clay, Cobbles, and Brick.	Sand and Silt, some Gravel.	Sand and Silt, some Gravel, weathered Schist at 13'.	Weathered Schist to 20'.	Gneiss and Schist.	Gneiss and Schist.	Gneiss and Schist.	Gneiss and Schist.		No impacts.
					PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.	PID=0 No odor.		
					MW-2B (3.5-4') BTEX: ND VOCs: 0.004 ppm PAHs: 201.6 ppm SVOCs: 202.5 ppm CN: ND									
MW-03A	12/5/2008	12/15/2008	7.6	16	Fill. Asphalt over Sand, Silt, and Gravel subbase to 4'. Sand, Silt, Gravel, Cobbles, and Brick to 5'.	Fill. Sand, some Gravel, trace Silt and Asphalt to 9'. Gneiss Rock fragments to 11'.	Gneiss Rock fragments to 11'. Schist and Sand, some Gravel to 16'.	Schist and Sand, some Gravel to 16'.						No impacts.
					PID=0 No odor.	PID=10.5 ppm No odor.	PID=0 No odor.	PID=0 No odor.						
							MW-3A (14-14.5') BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND	**MW-3A (16')** BTEX: ND VOCs: ND PAHs: 5.9 ppm SVOCs: 5.9 ppm CN: ND						
MW-03B	11/21/13	3/26/2014	7	43	Fill. Asphalt over Sand, Silt, and Gravel subbase to 4'. Sand, Silt, Gravel, Cobbles, and Brick to 5'.	Fill. Sand, some Gravel, trace Silt and Asphalt to 9'. Gneiss Rock fragments to 11'.	Gneiss Rock fragments to 11'. Schist and Sand, some Gravel to 16'.	Schist and Sand, some Gravel to 16'. Weathered Schist to 24'.	Weathered Schist to 24' over Gneiss and Schist.	Gneiss and Schist.	Gneiss and Schist. Coal Tar NAPL in core fracture at 33' 2", and sheen on water return at 33'.	Gneiss and Schist.	Gneiss and Schist.	Coal Tar NAPL in core fracture at 33'2", and sheen on water return at 33'.
					PID=0 No odor.	PID=10.5 ppm No odor.	PID=0 No odor.	PID=0 No odor.	PID=0	PID=26.5-117 ppm	PID=28 ppm at 32'.	PID=0.0	PID=0	

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
MW-05	12/12/08	12/12/2008	7.5	14	Fill. Asphalt over Sand, Silt, and Gravel subbase to 1'. Sand, Silt, Gravel, some Metal and Wood, little Cobble to 5'.	Fill. Sand, some Gravel to 7', over Sand and Silt, some Gravel to 10'.	Sand and Silt, some Gravel to 10'.							Hydrocarbon odor 10 - 14'.
					PID=0.6 ppm No odor.	PID=0 ppm No odor.	PID=27.9-28.7 ppm Hydrocarbon odor 10 - 14'.							
					MW-5 (2-3') BTEX: ND VOCs: ND PAHs: 313.2 ppm SVOCs: 318.7 ppm CN: 1.29 ppm	**MW-5 (11-13')** BTEX: 0.016 ppm VOCs: 0.405 ppm PAHs: 19.11 ppm SVOCs: 20.51 ppm CN: ND	**MW-5 (13-15')** BTEX: 0.037 ppm VOCs: 0.181 ppm PAHs: 23.62 ppm SVOCs: 25.72 ppm CN: ND							
MW-06	12/02/08	12/12/2008	7.5	17.4	Fill. Asphalt over Gravel subbase to 8"', over Sand, Silt, Gravel, Concrete, and Brick to 5'.	Fill. Sand and Silt, some Gravel to 10'.	Fill. Sand and Silt, some Gravel to 10'.	Sand, some Silt. Stained black.						Hydrocarbon odor 9 - 16'.
					PID=0 No odor.	PID=0-1.4 ppm No odor.	PID=1.4-32.9 ppm Hydrocarbon odor 10 - 15'.	PID=46.5 ppm Hydrocarbon odor 15 - 17.4'.						
							MW-6 (15-17') BTEX: ND VOCs: ND PAHs: 4.491 ppm SVOCs: 4.827 ppm CN: ND	**MW-6 (17-19')** BTEX: 0.065 ppm VOCs: 0.143 ppm PAHs: 8.708 ppm SVOCs: 9.228 ppm CN: ND						
MW-07A	01/06/09	01/07/09	7.5	21.5	Fill. Asphalt over Gravel subbase to 8"', over Sand, Silt, Gravel, and Cobbles to 5'.	Fill. Sand and Silt, some Gravel to 10'.	Fill. Sand and Silt, some Gravel to 15'.	Sand, some Silt. Stained black.	Sand, some Silt. Stained black.					Hydrocarbon odor 15 - 21.5'.
					PID=0.0 No odor.	PID=2.3-3.6 ppm No odor.	PID=0-13.8 ppm No odor.	PID=4.7-125 ppm Hydrocarbon odor 15 - 21.5'.	PID=6.6-9.2 ppm Hydrocarbon odor 15 - 21.5'.					
								MW-7A (17-19') BTEX: 16.82 ppm VOCs: 21.82 ppm PAHs: 49.11 ppm SVOCs: 50.81 ppm CN: ND	**MW-07A (21-23')** BTEX: 0.077 ppm VOCs: 0.085 ppm PAHs: 49.62 ppm SVOCs: 49.62 ppm CN: 1.48 ppm					
MW-07B	12/02/08	1/13/2009	7.5	43	Fill. Asphalt over Gravel subbase to 8"', over Sand, Silt, Gravel, and Concrete and Brick to 5'.	Fill. Sand and Silt, some Gravel and Brick.	Fill. Sand, Silt, and Gravel, some Brick at 14'.	Fill. Sand, Silt, and Gravel, over Gneiss with Schist lenses. Black staining in rock throughout.	Gneiss with Schist lenses. Black staining in rock throughout.	Gneiss with Schist lenses. Black staining in rock throughout.	Gneiss with Schist lenses. Black staining in rock throughout.	Gneiss with Schist lenses. Black staining in rock throughout.	Gneiss with Schist lenses. Black staining in rock throughout.	Hydrocarbon odor 10-12' and 15-19', with black staining in rock core fractures.
					PID=0 No odor.	PID=0-1.5 ppm No odor.	PID=1.2-32.9 ppm Hydrocarbon odor 10-12'.	PID= 46.5 ppm Hydrocarbon odor 15-19'.						
							MW-07B/SB-12 (11-13') BTEX: 1.002 ppm VOCs: 4.702 ppm PAHs: 122.85 ppm SVOCs: 131.29 ppm CN: ND	**MW-07B/SB-12 (17-19')** BTEX: 113.3 ppm VOCs: 151.3 ppm PAHs: 158.49 ppm SVOCs: 166.24 ppm CN: ND						

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
MW-08A	10/29/13	10/30/13	10.8	16	Fill. Silt, sands and gravel.	Silts, sands and gravel.	Fill. Silts, sands and gravel. Refusal 16'							No Impacts.
					PID=0.0 No odor.	PID=6.4 ppm No odor.	PID=2.3 ppm No odor.							
					MW-08A (2.7-2.9') BTEX: ND VOCs: 0.0023 ppm PAHs: 3.58 ppm SVOCs: 3.58 ppm CN: ND **S. vapor sample SVMW-08A (6.5-7')**	**MW-08A (9.5-10')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND	**MW-08A (15-16')** BTEX: ND VOCs: 0.0044 ppm PAHs: ND SVOCs: ND CN: ND							
MW-08B	10/29/13	11/26/2013	10	38	Fill. Silt, sands and gravels.	Silts, sands and gravel.	Fill. Silts, sands and gravel. Refusal 16' with overburden rig.	Weathered Schist and Silt to 23'.	Weathered Schist and Silt to 23'. Gneiss and Schist.	Gneiss and Schist.	Gneiss and Schist.	Gneiss and Schist.		No Impacts.
					PID=0.0 No odor.	PID=6.4 ppm No odor.	PID=2.3 ppm No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.		
					MW-08B (3-3.2') BTEX: ND VOCs: ND PAHs: 2.2 ppm SVOCs: 2.2 ppm CN: ND	**MW-08B (9.5-10.5')** BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.071 ppm CN: ND	**MW-08B (15-16')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND							
MW-09	10/28/13	10/30/13	15	15.5	Fill. Silt, sands and concrete.	Sand, silt and gravel.	Sand, silt and gravel. Refusal at 15.5'							No Impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.							
					S. vapor sample SVMW-09 (6.5-7')	**MW-09 (8.2-8.8')** BTEX: ND VOCs: 0.0273 ppm PAHs: ND SVOCs: ND CN: ND	**MW-09 (14.8-15.5')** BTEX: ND VOCs: 0.002 ppm PAHs: ND SVOCs: ND CN: ND							
MW-10	10/30/13	10/31/13	8.5	22	Fill. Silt, sands and gravels.	Silts, sand and gravel	Silts, sand and gravel	Silts, sand and gravel	Silts, sand and gravel Refusal at 22'.					No Impacts.
					PID=0.0 No odor.	PID=4.4 ppm No odor.	PID=1.2 ppm No odor.	PID=0.1 ppm No odor.	PID=0.4 ppm No odor.					
					S. vapor sample SVMW-10 (6.5-7')	**MW-10 (7-8.5')** BTEX: ND VOCs: 0.0064 ppm PAHs: ND SVOCs: ND CN: ND			**MW-10 (21-22')** BTEX: ND VOCs: 0.0039 ppm PAHs: ND SVOCs: ND CN: ND					
MW-11A	11/18/13	11/19/13	8	12.7	Fill. Sand, silt, gravel and wood.	Sand, silt and gravel.	Sand, silt and gravel. Refusal at 12.7' with DPT.							No Impacts.
					PID=0.1 ppm No odor.	PID=0.1 ppm No odor.	PID=0.1 ppm No odor.							
					MW-11A (3-3.5') BTEX: ND VOCs: 0.0361 ppm PAHs: 15.857 ppm SVOCs: 15.945 ppm CN: ND	**MW-11A (8.5-9.5')** BTEX: ND VOCs: 0.011 ppm PAHs: ND SVOCs: ND CN: ND	**MW-11A (11.5-12.7')** BTEX: ND VOCs: ND PAHs: 0.081 ppm SVOCs: 0.081 ppm CN: ND	**Soil vapor sample SVMW-11A (6.5-7')**					

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
MW11B	11/20/13	1/16-3/25/14	8	40.9	Fill. Sand, silt, gravel and wood. PID=0.1 ppm No odor.	Sand, silt and gravel. PID=0.1 ppm No odor.	Sand, silt and gravel. Refusal at 12.7'. PID=0.1 ppm No odor.	Granitic Gneiss. PID=0 No odor.	Granitic Gneiss. Slight sheen on return water. PID=0 No odor.	Granitic Gneiss. PID=0 No odor.	Granitic Gneiss. NAPL blebs on return water. PID=0 No odor.	Granitic Gneiss. PID=0 No odor.	Granitic Gneiss. PID=0 No odor.	Slight sheen on return water during coring 25-30', and NAPL blebs 30-35' on return water.
MW-12A	11/20/13	1/24/2014	7	12	Fill. Asphalt over Sand, some Silt and Gravel, and Concrete to 5'.	Sand, some Gravel, few Cobbles to 12'.	Sand, some Gravel, few Cobbles to 12', over Weathered Gneiss/Schist.							No impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.							
					MW-12A (2.8-3.2') BTEX: ND VOCs: 0.0361 ppm PAHs: 9.42 ppm SVOCs: 9.42 ppm CN: ND	**MW-12A (7-10')** BTEX: ND VOCs: ND PAHs: ND SVOCs: 0.12 ppm CN: ND	**MW-12A (10-12')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND							
MW-12B	11/20/13	1/14-3/26/14	7	40	Fill. Asphalt over Sand, some Silt and Gravel, and Concrete to 5'.	Sand, some Gravel, few Cobbles to 12'.	Sand, some Gravel, few Cobbles to 12', over Weathered Gneiss/Schist.	Schist and Gneiss, no sheens.	Schist and Gneiss, no sheens.	Schist and Gneiss, no sheens.	Schist and Gneiss, no sheens.	Schist and Gneiss, no sheens.		No impacts.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.		
Test Pits:														
TP-01		12/4/2008		6	Fill. Topsoil to 5", Sand, some Slag, Cinders, and Ash, little Cobble to 3', Clayey Silt	Clayey Silt to 6'								No MGP impacts. Two pipes were observed, 8" clay pipe located 3' bgs near north end of test pit and a 1.25" metal culvert at 4' bgs.
					PID=0.0 No odor.	PID=0.0 No odor.								
					TP-01 (2.0-3.0') BTEX: 0.038 PPM VOCs: 0.038 ppm PAHs: 722.09 ppm SVOCs: 725.59 ppm CN: 2.35 ppm	**TP-01 (6.0')** BTEX: ND VOCs: ND PAHs: 24.049 ppm SVOCs: 24.299 ppm CN: 0.703 ppm								
TP-02		12/5/2008	10.5	10.5	Fill. Topsoil to 5", Sand, little Silt, Gravel, and Cobbles to 1.1', Sand, some Slag, Cinders, Ash, and Gravel, trace Silt to 3', Clayey Silt	Clayey Silt	Clayey Silt to 10.5'							No MGP impacts. Two 2" PVC pipes were observed at 8" bgs on eastern end of test pit, one 1" metal conduit was observed at 3' bgs on western end of test pit.
					PID=0.0 No odor.	PID=0.0 No odor.	PID=0.0 No odor.							
					TP-02 (2.0-3.0') BTEX: 0.014 PPM VOCs: 0.014 ppm PAHs: 452.43 ppm SVOCs: 454.63 ppm CN: 2.1 ppm	**TP-02 (3.0-4.0')** BTEX: ND VOCs: ND PAHs: 20.801 ppm SVOCs: 20.998 ppm CN: 0.0925 ppm	**TP-02 (10.5')** BTEX: ND VOCs: ND PAHs: ND SVOCs: ND CN: ND							

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
TP-03		12/9/2008		2.9	Fill. Topsoil to 5", Sand, Silt, and Gravel to 8", Cobbles to 1.2', Sand, Silt, and Gravel to 2.9'									No impacts. 1" metal pipe observed at 3' bgs.
					PID=0.0 No odor.									
					TP-03 (1.0-3.0') BTEX: ND VOCs: ND PAHs: 89.06 ppm SVOCs: 89.06 ppm CN: 1.57 ppm	**TP-03 (3.0')** BTEX: ND VOCs: ND PAHs: 75.1 ppm SVOCs: 75.1 ppm CN: 4.63 ppm								
TP-04		12/1/2008		7.5	Fill. Asphalt to 4", Trap Rock to 7", Sand, some Boulders and Cobbles (Schist), little Gravel	Sand, some Boulders and Cobbles (Schist), little Gravel to 7.5'								No impacts. Large boulders encountered. Moist at 7' bgs.
					PID=0.3 No odor.	PID=0.0 No odor.								
					TP-04 (5.7') BTEX: ND VOCs: ND PAHs: 5.722 ppm SVOCs: 5.795 ppm CN: ND	**TP-04 (7.5')** BTEX: ND VOCs: ND PAHs: 2.273 ppm SVOCs: 2.273 ppm CN: ND								
TP-05		12/2/2008	12.2	12.5	Fill. Asphalt to 4", Trap Rock to 7", Sand, some Slag and Coal Tar (Solid Phase)	Sand, some Slag and Coal Tar (Solid Phase) to 7.2', Clayey Silt	Clayey Silt to 12', Sand, some Silt to 12.5'. Sheen on groundwater at 12.2'.							MGP impacts. Solid phase tar at 7.2'. Sheen observed on groundwater at 12.2' bgs.
					PID=0.1 No odor.	PID=0.0 No odor.	PID=435 No odor.							
					TP-05 (2.4') BTEX: 0.011 ppm VOCs: 0.011 ppm PAHs: 660.7 ppm SVOCs: 670 ppm CN: 1.01 ppm	**TP-05 (12.5')** BTEX: ND VOCs: 1.6 ppm PAHs: 141.71 ppm SVOCs: 143.95 ppm CN: ND								
TP-06		12/3/2008		9.5	Fill. Topsoil to 4", Sand, some Gravel, trace Silt to 2.7', Slag, Ash, some Sand, little Silt to 3.7', Sand, some Gravel, little Silt	Sand, some Gravel, little Silt to 7', Clayey Silt to 9.5'								No impacts. 12" cast iron pipe encountered at 5.5' bgs. Scrap metal noted on south end of test pit at 3' bgs.
					PID=0.1 No odor.	PID=0.0 No odor.								
					TP-06 (2.5-3.5') BTEX: ND VOCs: ND PAHs: 278.35 ppm SVOCs: 279.26 ppm CN: 9.52 ppm	**TP-06 (6.0-7.0')** BTEX: ND VOCs: ND PAHs: 12.93 ppm SVOCs: 12.93 ppm CN: 2.65 ppm	**TP-06 (9.5-9.5')** BTEX: ND VOCs: ND PAHs: 7.8 ppm SVOCs: 7.8 ppm CN: 1.98 ppm							

Table 4-1
Qualitative Observations in Soil Borings, Monitoring Wells and Test Pits
Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
TP-07		12/10/2008		9	Fill. Asphalt to 4", Trap Rock and Sand to 7", Boulders, Cobbles, some Gravel, Little Sand, Trace Silt	Boulders, Cobbles, some Gravel, Little Sand, Trace Silt to 9'									MGP odor. Metal debris noted inside holder at 6 to 8' bgs. Odors noted started at 7' bgs.
					PID=0.0 No odor.	PID=5.9 (inside holder PID=189 (outside holder) Odor 7-9'								
						TP-07 IH (7-9') BTEX: ND VOCs: ND PAHs: 47.92 ppm SVOCs: 48.39 ppm CN: 0.992 ppm	**TP-07 IH (9-9')** BTEX: 0.088 ppm VOCs: 0.0964 ppm PAHs: 187.5 ppm SVOCs: 191.2 ppm CN: ND	**TP-07 OH (9-9')** BTEX: 7.717 ppm VOCs: 8.754 ppm PAHs: 257.9 ppm SVOCs: 263.2 ppm CN: ND					
TP-07 (Ext)		12/11/2008		8	Fill. Asphalt to 4", Trap Rock, some Sand to 7", Sand, some Gravel, Ash, Cinder, and Slag, trace Silt to 1.2', Sand, some Gravel and Silt	Sand, some Gravel and Silt to 8'								No impacts. Test pit located on outside of holder wall and was an extension of TP-07. 12" pipe (cast iron) which was observed in TP-6 was not found.
					PID=121 No odor.	PID=0.0 No odor.								
TP-08		1/14/2014		6.2	Fill. Asphalt to 5", Cinders, Brick, Slag, Ash, Gravel, Sand, some to trace Silt to 5.1'	Silt, some Sand to 6.2'								No impacts. Two 12" metal pipes found at 5.7' bgs.
					PID=0.0 No odor.	PID=0.0 No odor.								
TP-09		1/15/2014		5.1	Fill. Asphalt to 5", Sand, Gravel, trace Silt to 7", Schist rock, some Gravel, few Sand and Silt to 1.5', Sand and Silt, trace Gravel to 2.7', Schist rock and Sand, some Gravel and Silt to 5.1'									Faint MGP odor. A large, flat Schist rock was exposed at 3.6' bgs measuring 2.5'x3'x1.5", too large to remove from excavation.
					PID=0.0 Faint MGP-like odor									
					TP-09 (2.7-2.9') BTEX: ND VOCs: 0.0074 ppm PAHs: 0.662 ppm SVOCs: 0.662 ppm CN: ND	**TP-09 (3.9-4.2')** BTEX: ND VOCs: ND PAHs: 2.862 ppm SVOCs: 2.862 ppm CN: ND								

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Consolidated Edison Company of New York, Cedar Street Works Site, New Rochelle, NY

Boring/Well/ Test Pit #	Date(s) Hand Cleared	Date(s) Drilled / Constr.	Water Table (feet bgs)	Bottom of Boring (feet bgs)	0-5'	5-10'	10-15'	15-20'	20-25'	25-30'	30-35'	35-40'	40-45'	Comments
TP-12		1/13/2014		7.3	Fill. Sand, some Gravel, Concrete Pavers, and Cinders to 2.5', Silt, Sand, some Brick to 4.5', Silt, some Sand, trace Gravel	Silt, some Sand, trace Gravel to 7.3'								No impacts. 1.5" steel line perpendicular to trench and covered with white material found at 2' bgs.
					PID=0.0 No odor.	PID=0.0 No odor.								

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-01	MW-01	MW-01	MW-02	MW-02
Sample ID					MW-01	MW-01	MW-01 DUP	MW-02	MW-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-11.0	17.0-19.0	17.0-19.0	7.0-9.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/15/08	12/15/08	12/15/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					0.22
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					0.063
Methylcyclohexane	MG/KG	-	-	-					
Styrene	MG/KG	300 CP-51	-	-					0.017 J
Toluene	MG/KG	0.7	0.7	500					
Xylene (total)	MG/KG	0.26	1.6	500					0.60 J
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	0.82
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	ND	ND	0.9
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-				2.7 J	0.86 J
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-				21 J	3.7 J
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500				13 J	1.4 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-01	MW-01	MW-01	MW-02	MW-02
Sample ID					MW-01	MW-01	MW-01 DUP	MW-02	MW-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-11.0	17.0-19.0	17.0-19.0	7.0-9.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/15/08	12/15/08	12/15/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500				45	4.9 J
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500				100	12
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6				160	13
Benzo(a)pyrene	MG/KG	1	22	1				95	9.3
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.039 J			150	14
Benzo(g,h,i)perylene	MG/KG	100	1000	500				54	3 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56				48	5.2 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-	0.04 J	0.16 J	0.22 J		
Carbazole	MG/KG	-	-	-				18 J	2.1 J
Chrysene	MG/KG	1	1	56				130	12
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56				15 J	1.1 J
Dibenzofuran	MG/KG	7	210	350				44	5.4 J
Fluoranthene	MG/KG	100	1000	500				310	29
Fluorene	MG/KG	30	386	500				85	9.5
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6				43	2.3 J
Naphthalene	MG/KG	12	12	500				15 J	4.5 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

Advanced Selection: Cedar SC Soil
J:\Projects\11175538.00000\DB\Program\EDMS.mde
Printed: 9/16/2014 8:04:54 AM
[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] < #10/29/2013#

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-01	MW-01	MW-01	MW-02	MW-02
Sample ID					MW-01	MW-01	MW-01 DUP	MW-02	MW-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-11.0	17.0-19.0	17.0-19.0	7.0-9.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/15/08	12/15/08	12/15/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500			0.048 J	350	34
Pyrene	MG/KG	100	1000	500				280	25
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	0.039	ND	0.048	1,914	183.9
Total Semivolatile Organic Compounds	MG/KG	-	-	-	0.079	0.16	0.268	1,978.7	192.26
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	20,900	9,930	8,840	12,800	11,800
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16				1.06	
Barium	MG/KG	350	820	400	249	95.5	83.5	66.8	108
Beryllium	MG/KG	7.2	47	590	0.46	0.23	0.229	0.39	0.245
Cadmium	MG/KG	2.5	7.5	9.3					
Calcium	MG/KG	10000 CP-51	-	-	5,280			3,150	
Chromium	MG/KG	30	NS	1500	71.2	27.5	25.4	22.4	27.5
Cobalt	MG/KG	20 CP-51	-	-	11.3	9.26	8.52	7.97	10.6
Copper	MG/KG	50	1720	270	57.9	28	28.2	22.7	36.2
Iron	MG/KG	2000 CP-51	-	-	34,800	18,000	17,600	17,800	19,900
Lead	MG/KG	63	450	1000	5.28	8.64	4.24	88.8	19.8
Magnesium	MG/KG	-	-	-	12,900	3,970	3,480	3,260	4,250

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-01	MW-01	MW-01	MW-02	MW-02
Sample ID					MW-01	MW-01	MW-01 DUP	MW-02	MW-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-11.0	17.0-19.0	17.0-19.0	7.0-9.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/15/08	12/15/08	12/15/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Metals									
Manganese	MG/KG	1600	2000	10000	423	390	366	455	267
Mercury	MG/KG	0.18	0.73	2.8	0.009			0.044	0.03
Nickel	MG/KG	30	130	310	14.8	19.4	17.7	16.1	19.7
Potassium	MG/KG	-	-	-	7,680	4,180	3,690	1,360	4,770
Selenium	MG/KG	3.9	4	1500	1.1			0.918	1
Silver	MG/KG	2	8.3	1500	3.64	1.89	1.78	1.94	2.1
Sodium	MG/KG	-	-	-					
Thallium	MG/KG	5 CP-51	-	-	2.96	0.747			1.06
Vanadium	MG/KG	39 CP-51	-	-	67.9	30.8	30.2	31.9	34.5
Zinc	MG/KG	109	2480	10000	67.6	32.8	28.6	34.9	40.3
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27				1.24	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-03	MW-03	MW-05	MW-05	MW-05
Sample ID					MW-03	MW-03	MW-05	MW-05	MW-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					14.0-14.5	16.0-16.0	2.0-3.0	11.0-13.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/05/08	12/12/08	12/12/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					0.12 J
Benzene	MG/KG	0.06	0.06	44					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					0.0057 J
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-				0.3	0.024 J
Methylcyclohexane	MG/KG	-	-	-				0.089	
Styrene	MG/KG	300 CP-51	-	-					
Toluene	MG/KG	0.7	0.7	500				0.016 J	
Xylene (total)	MG/KG	0.26	1.6	500					0.031 J
Total BTEX	MG/KG	-	-	-	ND	ND	ND	0.016	0.0367
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	ND	0.405	0.1807
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-			4 J		
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		1.1 J	2.1 J	9	5.4
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500			11	0.44 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-03	MW-03	MW-05	MW-05	MW-05
Sample ID					MW-03	MW-03	MW-05	MW-05	MW-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					14.0-14.5	16.0-16.0	2.0-3.0	11.0-13.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/05/08	12/12/08	12/12/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500			12		0.38 J
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500			12	0.43 J	0.53 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6			16	0.78 J	1.6 J
Benzo(a)pyrene	MG/KG	1	22	1			19 J		0.67 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		1.1 J	25 J		1.5 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500			9.4 J		
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56			6.8 J		0.55 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-				1.4 J	2.1 J
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56			16 J	0.76 J	1.3 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56					
Dibenzofuran	MG/KG	7	210	350			1.5 J		
Fluoranthene	MG/KG	100	1000	500		1.3 J	55	1.9 J	3.4 J
Fluorene	MG/KG	30	386	500			10	0.6 J	0.47 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6			4.4 J		
Naphthalene	MG/KG	12	12	500			5.5 J		0.52 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-03	MW-03	MW-05	MW-05	MW-05
Sample ID					MW-03	MW-03	MW-05	MW-05	MW-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					14.0-14.5	16.0-16.0	2.0-3.0	11.0-13.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/05/08	12/12/08	12/12/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500		0.8 J	49	2.3 J	3.2 J
Pyrene	MG/KG	100	1000	500		1.6 J	60 J	2.9 J	4.1 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	5.9	313.2	19.11	23.62
Total Semivolatile Organic Compounds	MG/KG	-	-	-	ND	5.9	318.7	20.51	25.72
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	22,200	8,770	8,930	16,200	14,500
Antimony	MG/KG	12 CP-51	-	-				1.34 J	1.19 J
Arsenic	MG/KG	13	16	16		0.963	4.59	1.8	1.64
Barium	MG/KG	350	820	400	305	103	111	116	138
Beryllium	MG/KG	7.2	47	590	0.39	0.232	0.29	0.339	0.264
Cadmium	MG/KG	2.5	7.5	9.3			0.545	2.07	2.05
Calcium	MG/KG	10000 CP-51	-	-	6,220	47,100	18,600	1,790	3,640
Chromium	MG/KG	30	NS	1500	46.5	33	97.1	63.3	50.7
Cobalt	MG/KG	20 CP-51	-	-	22.4	6.93	8.24	12.3	13.3
Copper	MG/KG	50	1720	270	43.9	36.9	88.9	21.1	24.8
Iron	MG/KG	2000 CP-51	-	-	39,600	15,800	22,100	23,600	23,600
Lead	MG/KG	63	450	1000	10.8	40.3	99.4	16.7	24.9
Magnesium	MG/KG	-	-	-	13,800	30,500	5,990	5,540	5,680

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-03	MW-03	MW-05	MW-05	MW-05
Sample ID					MW-03	MW-03	MW-05	MW-05	MW-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					14.0-14.5	16.0-16.0	2.0-3.0	11.0-13.0	13.0-15.0
Date Sampled					12/15/08	12/15/08	12/05/08	12/12/08	12/12/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	628	261	308	420	612
Mercury	MG/KG	0.18	0.73	2.8	0.151	0.259	0.456	0.187	0.074
Nickel	MG/KG	30	130	310	44	22.7	58.7	29.9	33.3
Potassium	MG/KG	-	-	-	15,800	4,670	3,180	5,740	6,580
Selenium	MG/KG	3.9	4	1500	1.25	0.688	1.05	1.08	0.803
Silver	MG/KG	2	8.3	1500	4.18	1.69	3.66	2.35	2.81
Sodium	MG/KG	-	-	-			198	169	196
Thallium	MG/KG	5 CP-51	-	-	3.35	0.816		1.29 J	1.2 J
Vanadium	MG/KG	39 CP-51	-	-	64.5	27	30.4	43.2	40
Zinc	MG/KG	109	2480	10000	89.6	53	143	51.7	66.4
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27			1.29		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Sample ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	17.0-19.0	17.0-19.0	21.0-23.0	9.0-11.0
Date Sampled					12/12/08	12/12/08	01/07/09	01/07/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44			0.17 J	0.0071 J	
Cyclohexane	MG/KG	-	-	-			0.7 J		
Ethylbenzene	MG/KG	1	1	390		0.022 J	5.4	0.02 J	
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.06	0.6 J	0.0078 J	
Methylcyclohexane	MG/KG	-	-	-		0.018 J	3.7		
Styrene	MG/KG	300 CP-51	-	-					
Toluene	MG/KG	0.7	0.7	500		0.011 J	0.35 J		
Xylene (total)	MG/KG	0.26	1.6	500		0.032 J	10.9	0.05 J	
Total BTEX	MG/KG	-	-	-	ND	0.065	16.82	0.0771	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	0.143	21.82	0.0849	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	0.056 J	0.52	1.7 J		
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	3.2	6.1	4.1 J	0.7 J	
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		0.098 J	2 J	0.72 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Sample ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	17.0-19.0	17.0-19.0	21.0-23.0	9.0-11.0
Date Sampled					12/12/08	12/12/08	01/07/09	01/07/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500			1.6 J	2.3 J	
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500			1.1 J	0.93 J	
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.04 J		1.6 J	3.2 J	
Benzo(a)pyrene	MG/KG	1	22	1			1.9 J	4	
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6			1.9 J	4	
Benzo(g,h,i)perylene	MG/KG	100	1000	500			1.6 J	3.5 J	
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56			0.71 J	1.7 J	
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-	0.28 J				0.047 J
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56	0.11 J		1.5 J	3.1 J	
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56				0.5 J	
Dibenzofuran	MG/KG	7	210	350					
Fluoranthene	MG/KG	100	1000	500	0.07 J		3.1 J	6.5	
Fluorene	MG/KG	30	386	500	0.071 J	0.17 J	1.5 J	0.78 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6			1.1 J	2.5 J	
Naphthalene	MG/KG	12	12	500	0.72	2	16	0.89 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Sample ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	17.0-19.0	17.0-19.0	21.0-23.0	9.0-11.0
Date Sampled					12/12/08	12/12/08	01/07/09	01/07/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	0.13 J	0.34 J	5.4	5.3	
Pyrene	MG/KG	100	1000	500	0.15 J		4	9	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	4.491	8.708	49.11	49.62	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	4.827	9.228	50.81	49.62	0.047
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	13,100	18,500	7,830	11,700	14,500
Antimony	MG/KG	12 CP-51	-	-		1.38 J		1.1 J	
Arsenic	MG/KG	13	16	16	1.06	1.64	3.39	5.03	1.11
Barium	MG/KG	350	820	400	138	191	74.8	180	106
Beryllium	MG/KG	7.2	47	590	0.209 J	0.122 J	0.11 J	0.118 J	0.329
Cadmium	MG/KG	2.5	7.5	9.3	1.82	2.77	0.252	0.439	1.1
Calcium	MG/KG	10000 CP-51	-	-	1,770	1,490	5,260	7,750	
Chromium	MG/KG	30	NS	1500	35	41.4	31.1	69.3	33.5
Cobalt	MG/KG	20 CP-51	-	-	12.2	19.9	7.49	13.2	11.9
Copper	MG/KG	50	1720	270	31.1	14.8	26.5	47.9	22.5
Iron	MG/KG	2000 CP-51	-	-	22,000	33,400	18,300	24,600	20,000
Lead	MG/KG	63	450	1000	5.88	2.98	8.84	17	5.6
Magnesium	MG/KG	-	-	-	5,410	9,270	3,680	6,480	4,890

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Sample ID					MW-06	MW-06	MW-07A	MW-07A	SB-01
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	17.0-19.0	17.0-19.0	21.0-23.0	9.0-11.0
Date Sampled					12/12/08	12/12/08	01/07/09	01/07/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	422	521	169	346	502
Mercury	MG/KG	0.18	0.73	2.8			0.049		
Nickel	MG/KG	30	130	310	24	32.3	24	52.8	22.6
Potassium	MG/KG	-	-	-	6,020	13,100	3,120	7,850	3,840
Selenium	MG/KG	3.9	4	1500		0.748 J			
Silver	MG/KG	2	8.3	1500	2.21	3.4	3.3	4.38	3.61
Sodium	MG/KG	-	-	-	118	157			
Thallium	MG/KG	5 CP-51	-	-	0.903 J	2.32			
Vanadium	MG/KG	39 CP-51	-	-	36.2	57.5	24.9	34.5	33.9
Zinc	MG/KG	109	2480	10000	45	71.1	38.7	68.3	40.8
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27				1.48	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-02	SB-02	SB-03	SB-03
Sample ID					SB-01	SB-02	SB-02	SB-03	SB-03
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	9.0-11.0	23.0-25.0	11.0-13.0	13.0-13.0
Date Sampled					12/16/08	12/16/08	12/16/08	12/17/08	12/17/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44				2.8 J	1,600
Cyclohexane	MG/KG	-	-	-				0.26	30
Ethylbenzene	MG/KG	1	1	390				9.4 J	3,500
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-				1.2 J	54 J
Methylcyclohexane	MG/KG	-	-	-				0.62	170 J
Styrene	MG/KG	300 CP-51	-	-				0.16	1,500
Toluene	MG/KG	0.7	0.7	500				2 J	3,000
Xylene (total)	MG/KG	0.26	1.6	500				9.4 J	3,400
Total BTEX	MG/KG	-	-	-	ND	ND	ND	23.6	11,500
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	ND	25.84	13,254
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-				0.68	65
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-				0.028 J	
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-				1.6	110
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-				0.034 J	
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500				1.6	18

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-02	SB-02	SB-03	SB-03
Sample ID					SB-01	SB-02	SB-02	SB-03	SB-03
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	9.0-11.0	23.0-25.0	11.0-13.0	13.0-13.0
Date Sampled					12/16/08	12/16/08	12/16/08	12/17/08	12/17/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500				1.1	170
Acetophenone	MG/KG	-	-	-				0.014 J	
Anthracene	MG/KG	100	1000	500	0.085 J			0.36 J	30 J
Benzaldehyde	MG/KG	-	-	-				0.014 J	
Benzo(a)anthracene	MG/KG	1	1	5.6	0.14 J			0.26 J	15 J
Benzo(a)pyrene	MG/KG	1	22	1	0.081 J				11 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.1 J				6.3 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.044 J				8.5 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.049 J				2.3 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-				0.01 J	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-	0.044 J	0.1 J	0.54	0.026 J	
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56	0.1 J			0.13 J	7.4 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56					
Dibenzofuran	MG/KG	7	210	350				0.013 J	1.1 J
Fluoranthene	MG/KG	100	1000	500	0.26 J		0.05 J	0.32 J	46 J
Fluorene	MG/KG	30	386	500	0.045 J			0.39	35
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.041 J				1.7 J
Naphthalene	MG/KG	12	12	500				11	5,700

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-02	SB-02	SB-03	SB-03
Sample ID					SB-01	SB-02	SB-02	SB-03	SB-03
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	9.0-11.0	23.0-25.0	11.0-13.0	13.0-13.0
Date Sampled					12/16/08	12/16/08	12/16/08	12/17/08	12/17/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51				0.02 J	
Phenanthrene	MG/KG	100	1000	500	0.19 J		0.043 J	2	91
Pyrene	MG/KG	100	1000	500	0.22 J		0.045 J	0.96 J	65
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	1.355	ND	0.138	19.72	6,317.2
Total Semivolatile Organic Compounds	MG/KG	-	-	-	1.399	0.1	0.678	20.559	6,383.3
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	12,300	11,600	7,960	14,100	19,100
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16		2.1			1.62
Barium	MG/KG	350	820	400	112	58.9	77.9	174	237
Beryllium	MG/KG	7.2	47	590	0.228	0.38	0.158	0.184 J	0.356
Cadmium	MG/KG	2.5	7.5	9.3	0.955	1.06	0.773		
Calcium	MG/KG	10000 CP-51	-	-				627	2,090
Chromium	MG/KG	30	NS	1500	33.5	29.1	22.4	51.5	40.9
Cobalt	MG/KG	20 CP-51	-	-	11.7	8.17	8.13	10.9	14.6
Copper	MG/KG	50	1720	270	15.3	18.1	25.3	31.9	58.3
Iron	MG/KG	2000 CP-51	-	-	18,500	21,500	15,500	23,100	30,200
Lead	MG/KG	63	450	1000	4.59	7.65	7.32	3.16	193
Magnesium	MG/KG	-	-	-	5,250	3,400	3,530	7,750	9,570

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-02	SB-02	SB-03	SB-03
Sample ID					SB-01	SB-02	SB-02	SB-03	SB-03
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	9.0-11.0	23.0-25.0	11.0-13.0	13.0-13.0
Date Sampled					12/16/08	12/16/08	12/16/08	12/17/08	12/17/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	316	232	265	401	531
Mercury	MG/KG	0.18	0.73	2.8					0.142
Nickel	MG/KG	30	130	310	24.8	13.1	15.4	19.8	23.5
Potassium	MG/KG	-	-	-	5,050	1,690	4,030	11,100	12,400
Selenium	MG/KG	3.9	4	1500				0.9	2.1
Silver	MG/KG	2	8.3	1500	3.37	3.97	2.75	2.49	3.25
Sodium	MG/KG	-	-	-				156	287
Thallium	MG/KG	5 CP-51	-	-				1.98	2.4
Vanadium	MG/KG	39 CP-51	-	-	31.8	41.2	26.3	47.7	63.4
Zinc	MG/KG	109	2480	10000	38.9	36.7	35.2	50.7	125
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-04	SB-04	SB-04	SB-05	SB-05
Sample ID					SB-04	SB-04	SB-04	SB-05	SB-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-15.0	21.0-23.0	23.0-25.0	19.0-21.0	21.0-23.0
Date Sampled					12/21/08	12/21/08	12/21/08	01/04/09	01/04/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44	0.056	2.5	0.24	0.052	0.082
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390		11	0.11		0.021 J
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.87	0.016 J		
Methylcyclohexane	MG/KG	-	-	-		0.094			
Styrene	MG/KG	300 CP-51	-	-		0.015 J			
Toluene	MG/KG	0.7	0.7	500		2.6	0.099		0.012 J
Xylene (total)	MG/KG	0.26	1.6	500	0.019 J	18.3	0.285		0.039 J
Total BTEX	MG/KG	-	-	-	0.075	34.4	0.734	0.052	0.154
Total Volatile Organic Compounds	MG/KG	-	-	-	0.075	35.379	0.75	0.052	0.154
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-			1.1 J		
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		3.1 J	4.3 J		
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		4.3 J	6.6 J		0.35 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-04	SB-04	SB-04	SB-05	SB-05
Sample ID					SB-04	SB-04	SB-04	SB-05	SB-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-15.0	21.0-23.0	23.0-25.0	19.0-21.0	21.0-23.0
Date Sampled					12/21/08	12/21/08	12/21/08	01/04/09	01/04/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500					
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500		6 J	9.5		0.26 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6		7.2 J	10	1 J	0.39 J
Benzo(a)pyrene	MG/KG	1	22	1		5.4 J	8 J		0.26 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		8.6	12	0.94 J	0.4 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500		2.8 J	4.6 J		0.23 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		2.8 J	3.7 J		
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Carbazole	MG/KG	-	-	-		1.8 J	3.9 J		
Chrysene	MG/KG	1	1	56		6.2 J	8.7		0.33 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56			0.82 J		
Dibenzofuran	MG/KG	7	210	350		3.7 J	6 J		
Fluoranthene	MG/KG	100	1000	500		19	27	2.1 J	0.79 J
Fluorene	MG/KG	30	386	500		5.6 J	9.1		0.29 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		2.1 J	3 J		
Naphthalene	MG/KG	12	12	500	6.5 J	11	18	4.2 J	0.75 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-04	SB-04	SB-04	SB-05	SB-05
Sample ID					SB-04	SB-04	SB-04	SB-05	SB-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-15.0	21.0-23.0	23.0-25.0	19.0-21.0	21.0-23.0
Date Sampled					12/21/08	12/21/08	12/21/08	01/04/09	01/04/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500		25	38	1.8 J	0.86 J
Pyrene	MG/KG	100	1000	500		16	23	1.8 J	0.78 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	6.5	125.1	186.32	11.84	5.69
Total Semivolatile Organic Compounds	MG/KG	-	-	-	6.5	130.6	197.32	11.84	5.69
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	2,480 J	5,120 J	5,590 J	10,500	9,820
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	0.626 J	1.52	0.839	1.11	0.614 J
Barium	MG/KG	350	820	400	39.2 J	41.1 J	86.5 J	81.2	97.8
Beryllium	MG/KG	7.2	47	590	0.057 J	0.146 J	0.097 J	0.146 J	0.131 J
Cadmium	MG/KG	2.5	7.5	9.3	0.215 J	0.306	0.51		
Calcium	MG/KG	10000 CP-51	-	-	4,010 J	17,000 J	6,410 J	4,400	10,200
Chromium	MG/KG	30	NS	1500	8.12 J	6.34 J	13.7 J	17.7	21.3
Cobalt	MG/KG	20 CP-51	-	-	3.25	3.5	5.82	9.81	10.7
Copper	MG/KG	50	1720	270	57.5	8.41	30.7	29.8	32
Iron	MG/KG	2000 CP-51	-	-	5,120 J	9,020 J	11,500 J	29,300	19,200
Lead	MG/KG	63	450	1000	17.7	18.9	47.8	12.5	24.7
Magnesium	MG/KG	-	-	-	2,110 J	17,300 J	3,830 J	4,480	7,630

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-04	SB-04	SB-04	SB-05	SB-05
Sample ID					SB-04	SB-04	SB-04	SB-05	SB-05
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-15.0	21.0-23.0	23.0-25.0	19.0-21.0	21.0-23.0
Date Sampled					12/21/08	12/21/08	12/21/08	01/04/09	01/04/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	89.1 J	638 J	195 J	312	299
Mercury	MG/KG	0.18	0.73	2.8	0.072	0.019	0.052	0.192	0.525
Nickel	MG/KG	30	130	310	3.92	7.02	8.72	13.8	15.7
Potassium	MG/KG	-	-	-	1,020	1,240	2,610	4,220	5,640
Selenium	MG/KG	3.9	4	1500				1.72	0.698 J
Silver	MG/KG	2	8.3	1500	0.329 J	0.423	0.681	4.5	2.87
Sodium	MG/KG	-	-	-	115	164	169	222	266
Thallium	MG/KG	5 CP-51	-	-				1.24 J	1.19 J
Vanadium	MG/KG	39 CP-51	-	-	8.8	11.3	18.8	28.1	27.2
Zinc	MG/KG	109	2480	10000	107 J	19.7 J	103 J	55.5	69.4
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27		26			4.4

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-06	SB-06	SB-07	SB-07	SB-09
Sample ID					SB-06	SB-06	SB-07	SB-07	SB-09
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	19.0-21.0	11.0-13.0	15.0-17.0	7.0-9.0
Date Sampled					01/04/09	01/04/09	01/04/09	01/04/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					0.22
Benzene	MG/KG	0.06	0.06	44	0.46 J		6.1		
Cyclohexane	MG/KG	-	-	-	2.8				
Ethylbenzene	MG/KG	1	1	390	46	0.057	44	0.48 J	
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-	11 J	0.037	2.4 J		
Methylcyclohexane	MG/KG	-	-	-	35	0.025 J	0.56 J		
Styrene	MG/KG	300 CP-51	-	-	0.45 J		9.1		
Toluene	MG/KG	0.7	0.7	500	1		44	0.23 J	
Xylene (total)	MG/KG	0.26	1.6	500	33	0.089 J	169	1.79 J	
Total BTEX	MG/KG	-	-	-	80.46	0.146	263.1	2.5	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	129.71	0.208	275.16	2.5	0.22
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	25	2.1	18	1.2 J	
2,4-Dimethylphenol	MG/KG	-	-	-			3.3 J		
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	41	3.3	97	6	
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500			0.96 J		
Acenaphthene	MG/KG	20	98	500	97	8.2	46	3.2	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-06	SB-06	SB-07	SB-07	SB-09
Sample ID					SB-06	SB-06	SB-07	SB-07	SB-09
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	19.0-21.0	11.0-13.0	15.0-17.0	7.0-9.0
Date Sampled					01/04/09	01/04/09	01/04/09	01/04/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500	7.7	0.61	40	5.3	
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	42	4.5	67	7.5	0.99 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	32	2.7	66	15	3.2 J
Benzo(a)pyrene	MG/KG	1	22	1	28	2.2	43	11	3 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	30	2.5	60	15	3.7 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	22	1.5	29	7.7	1.9 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	7.7	0.72	19	5.9	1.6 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-		0.12 J			
Carbazole	MG/KG	-	-	-	3.7 J	0.3 J	23	2.1	
Chrysene	MG/KG	1	1	56	24	2.2	49	11	3.1 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	3.1 J	0.19 J	7.8 J	1.8 J	
Dibenzofuran	MG/KG	7	210	350	9.7	0.66	61	4.5	
Fluoranthene	MG/KG	100	1000	500	90	7.4	150	34	6.5 J
Fluorene	MG/KG	30	386	500	51	4.1	83	7.3	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	13	0.79	28	5.9	1.5 J
Naphthalene	MG/KG	12	12	500	110	8.7	410	23	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-06	SB-06	SB-07	SB-07	SB-09
Sample ID					SB-06	SB-06	SB-07	SB-07	SB-09
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	19.0-21.0	11.0-13.0	15.0-17.0	7.0-9.0
Date Sampled					01/04/09	01/04/09	01/04/09	01/04/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	190	16	210	19	3.4 J
Pyrene	MG/KG	100	1000	500	110	9.4	120	27	5.6 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	898.5	75.01	1,524.8	205.6	34.49
Total Semivolatile Organic Compounds	MG/KG	-	-	-	936.9	78.19	1,631.06	213.4	34.49
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	11,600	9,140	10,500	7,700	8,360
Antimony	MG/KG	12 CP-51	-	-					1.28
Arsenic	MG/KG	13	16	16	1.1		1.97	0.731 J	28.1
Barium	MG/KG	350	820	400	104	110	79.1	69.1	141
Beryllium	MG/KG	7.2	47	590	0.452	0.091 J	0.281	0.139 J	0.203
Cadmium	MG/KG	2.5	7.5	9.3					1.76
Calcium	MG/KG	10000 CP-51	-	-	2,810	1,380	2,650	1,730	6,180
Chromium	MG/KG	30	NS	1500	20	23.4	16.9	19.6	23.6
Cobalt	MG/KG	20 CP-51	-	-	8.73	8.75	7.89	7.07	8.62
Copper	MG/KG	50	1720	270	16.3	17.2	23.4	21.9	41.5
Iron	MG/KG	2000 CP-51	-	-	14,300	16,200	21,400	13,200	18,500
Lead	MG/KG	63	450	1000	14	4.43	10.2	5.25	313
Magnesium	MG/KG	-	-	-	2,640	4,280	2,460	3,110	4,560

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-06	SB-06	SB-07	SB-07	SB-09
Sample ID					SB-06	SB-06	SB-07	SB-07	SB-09
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	19.0-21.0	11.0-13.0	15.0-17.0	7.0-9.0
Date Sampled					01/04/09	01/04/09	01/04/09	01/04/09	12/16/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	301	261	229	151	247
Mercury	MG/KG	0.18	0.73	2.8	0.224		0.05	0.013	0.394
Nickel	MG/KG	30	130	310	11.3	15.8	13.9	13.4	17.1
Potassium	MG/KG	-	-	-	826	6,010	2,130	2,600	3,010
Selenium	MG/KG	3.9	4	1500	1.22	0.995	1.81	0.941	
Silver	MG/KG	2	8.3	1500	2.2	2.47	3.08	2.01	3.47
Sodium	MG/KG	-	-	-	215	199	217	167	
Thallium	MG/KG	5 CP-51	-	-		1.55	0.809 J		
Vanadium	MG/KG	39 CP-51	-	-	27.6	29.2	22.4	22.4	27.9
Zinc	MG/KG	109	2480	10000	45	35.8	62.8	29.2	209
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27	2.55		1.07	0.978	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-10	SB-11	SB-11	SB-12	SB-12
Sample ID					SB-10	SB-11	SB-11	SB-12	SB-12
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					19.0-21.0	17.0-19.0	19.0-21.0	11.0-13.0	17.0-19.0
Date Sampled					01/04/09	12/21/08	12/21/08	12/18/08	12/18/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44	0.34	0.28	0.088		0.2 J
Cyclohexane	MG/KG	-	-	-				0.2	
Ethylbenzene	MG/KG	1	1	390	0.033	0.26	0.14	0.64	67
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-	0.032	0.028 J	0.012 J	1.6	14 J
Methylcyclohexane	MG/KG	-	-	-	0.049			1.9	24
Styrene	MG/KG	300 CP-51	-	-					
Toluene	MG/KG	0.7	0.7	500		0.012 J	0.047	0.024 J	1.1
Xylene (total)	MG/KG	0.26	1.6	500	0.072 J	0.24	0.145	0.338 J	45 J
Total BTEX	MG/KG	-	-	-	0.445	0.792	0.42	1.002	113.3
Total Volatile Organic Compounds	MG/KG	-	-	-	0.526	0.82	0.432	4.702	151.3
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	0.12 J		0.24 J	8.1	7
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.76	0.37 J	0.77 J	0.25 J	7.8
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	0.35 J	0.49 J	0.72 J	25	15

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-10	SB-11	SB-11	SB-12	SB-12
Sample ID					SB-10	SB-11	SB-11	SB-12	SB-12
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					19.0-21.0	17.0-19.0	19.0-21.0	11.0-13.0	17.0-19.0
Date Sampled					01/04/09	12/21/08	12/21/08	12/18/08	12/18/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500	0.32 J			3.6	1.1
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.43	0.59 J	1.1 J	7	4.5
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.41	0.3 J	1.1 J	5.3	4.3
Benzo(a)pyrene	MG/KG	1	22	1	0.28 J	0.21 J	0.8 J	4.3	3.2
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.39	0.3 J	1.2 J	3.8	3.6
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.16 J		0.37 J	2.2	1.4
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.12 J		0.39 J	1.2 J	0.9
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Carbazole	MG/KG	-	-	-	0.18 J	0.2 J	0.37 J		0.21 J
Chrysene	MG/KG	1	1	56	0.31 J	0.3 J	1 J	4.8	3.7
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.049 J			0.55 J	0.39 J
Dibenzofuran	MG/KG	7	210	350	0.4	0.52 J	0.73 J	0.34 J	0.54 J
Fluoranthene	MG/KG	100	1000	500	0.89	1.2 J	3	9.7	8.6
Fluorene	MG/KG	30	386	500	0.55	0.68 J	1.1 J	9.6	6.6
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.14 J		0.35 J	2 J	1.4
Naphthalene	MG/KG	12	12	500	3	0.95 J	3.8	0.55 J	67

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-10	SB-11	SB-11	SB-12	SB-12
Sample ID					SB-10	SB-11	SB-11	SB-12	SB-12
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					19.0-21.0	17.0-19.0	19.0-21.0	11.0-13.0	17.0-19.0
Date Sampled					01/04/09	12/21/08	12/21/08	12/18/08	12/18/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	1.3	2.6	4.6	28	18
Pyrene	MG/KG	100	1000	500	0.74	0.94 J	2.7	15	11
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	10.199	8.93	23	122.85	158.49
Total Semivolatile Organic Compounds	MG/KG	-	-	-	10.899	9.65	24.34	131.29	166.24
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	9,650	5,140 J	4,460 J	14,100	6,830
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	0.838				
Barium	MG/KG	350	820	400	82.8	44.3 J	43.9 J	77.9	71.9
Beryllium	MG/KG	7.2	47	590	0.247	0.126 J	0.068 J	0.449	0.188 J
Cadmium	MG/KG	2.5	7.5	9.3		0.264	0.206 J		
Calcium	MG/KG	10000 CP-51	-	-	4,540	1,780 J	4,030 J	1,340	1,090
Chromium	MG/KG	30	NS	1500	20.6	12 J	9.08 J	31.2	18.4
Cobalt	MG/KG	20 CP-51	-	-	7.75	5.15	4.05	29.5	7.25
Copper	MG/KG	50	1720	270	28	11.4	8.41	33.9	22
Iron	MG/KG	2000 CP-51	-	-	17,300	8,900 J	7,440 J	20,100	12,200
Lead	MG/KG	63	450	1000	51.3	5.86	8.1	7.87	2.19
Magnesium	MG/KG	-	-	-	3,280	2,090 J	2,350 J	4,260	2,680

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-10	SB-11	SB-11	SB-12	SB-12
Sample ID					SB-10	SB-11	SB-11	SB-12	SB-12
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					19.0-21.0	17.0-19.0	19.0-21.0	11.0-13.0	17.0-19.0
Date Sampled					01/04/09	12/21/08	12/21/08	12/18/08	12/18/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	301	231 J	183 J	175	139
Mercury	MG/KG	0.18	0.73	2.8	0.062	0.073	0.034	0.021	
Nickel	MG/KG	30	130	310	13.4	7.63	6.74	41.2	16.4
Potassium	MG/KG	-	-	-	2,730	1,800	1,800	1,940	3,250
Selenium	MG/KG	3.9	4	1500	1.08			0.934	0.8
Silver	MG/KG	2	8.3	1500	2.67	0.487	0.418	2.12	1.32
Sodium	MG/KG	-	-	-	359	95.8	123	120	107
Thallium	MG/KG	5 CP-51	-	-				0.828 J	
Vanadium	MG/KG	39 CP-51	-	-	25.7	14.9	11.6	40.1	22.7
Zinc	MG/KG	109	2480	10000	62.4	18.7 J	19.6 J	37.2	30.5
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-13	SB-13	SB-14	SB-14	SB-15
Sample ID					SB-13	SB-13	SB-14	SB-14	SB-15
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	13.0-15.0	9.0-11.0	23.0-25.0	13.0-15.0
Date Sampled					12/16/08	12/16/08	12/17/08	12/17/08	01/12/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500	0.11 J				
Benzene	MG/KG	0.06	0.06	44		0.023 J			750
Cyclohexane	MG/KG	-	-	-		0.48			11 J
Ethylbenzene	MG/KG	1	1	390		3			1,200
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.35			28
Methylcyclohexane	MG/KG	-	-	-		0.86			40
Styrene	MG/KG	300 CP-51	-	-					80
Toluene	MG/KG	0.7	0.7	500		0.015 J			920
Xylene (total)	MG/KG	0.26	1.6	500		2.53			960
Total BTEX	MG/KG	-	-	-	ND	5.568	ND	ND	3,830
Total Volatile Organic Compounds	MG/KG	-	-	-	0.11	7.258	ND	ND	3,989
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	1.5 J	2.9			140
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	2.9	2.4			520
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	2.2	1.6 J			130

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-13	SB-13	SB-14	SB-14	SB-15
Sample ID					SB-13	SB-13	SB-14	SB-14	SB-15
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	13.0-15.0	9.0-11.0	23.0-25.0	13.0-15.0
Date Sampled					12/16/08	12/16/08	12/17/08	12/17/08	01/12/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500	0.87 J	6.2			260
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	1 J	3.4			82
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.6 J	2			57
Benzo(a)pyrene	MG/KG	1	22	1	0.52 J	2.7			44
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.42 J	1.9			37 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.4 J	2.3			18 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		0.79 J			13 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-			0.046 J	0.039 J	
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56	0.53 J	2			55
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56					
Dibenzofuran	MG/KG	7	210	350					6.5 J
Fluoranthene	MG/KG	100	1000	500	1.8 J	8.5			110
Fluorene	MG/KG	30	386	500	1.4 J	3.6			120
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.25 J	1.3 J			13 J
Naphthalene	MG/KG	12	12	500	9.3	15	0.16 J		9,000

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-13	SB-13	SB-14	SB-14	SB-15
Sample ID					SB-13	SB-13	SB-14	SB-14	SB-15
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	13.0-15.0	9.0-11.0	23.0-25.0	13.0-15.0
Date Sampled					12/16/08	12/16/08	12/17/08	12/17/08	01/12/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	4.6	15			290
Pyrene	MG/KG	100	1000	500	2.4	11			150
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	29.19	79.69	0.16	ND	10,899
Total Semivolatile Organic Compounds	MG/KG	-	-	-	30.69	82.59	0.206	0.039	11,045.5
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	12,800	12,700	11,500	23,800	3,900
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.98	1.01			14.7
Barium	MG/KG	350	820	400	60.5	90.4	73.6	336	272
Beryllium	MG/KG	7.2	47	590	0.354	0.289	0.348	0.302	0.24 J
Cadmium	MG/KG	2.5	7.5	9.3	1.36	1.13			1.57
Calcium	MG/KG	10000 CP-51	-	-			1,620	421	11,100
Chromium	MG/KG	30	NS	1500	23.9	44.7	27.5	54.1	10.1
Cobalt	MG/KG	20 CP-51	-	-	10.9	14.1	7.63	23.9	7.69
Copper	MG/KG	50	1720	270	19.8	16	32.5	32.8	196
Iron	MG/KG	2000 CP-51	-	-	26,900	21,800	19,600	43,200	17,600
Lead	MG/KG	63	450	1000	6.29	5	17.5	3.16	624
Magnesium	MG/KG	-	-	-	3,460	4,980	3,840	11,300	3,630

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-13	SB-13	SB-14	SB-14	SB-15
Sample ID					SB-13	SB-13	SB-14	SB-14	SB-15
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					11.0-13.0	13.0-15.0	9.0-11.0	23.0-25.0	13.0-15.0
Date Sampled					12/16/08	12/16/08	12/17/08	12/17/08	01/12/09
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	258	297	327	874	136
Mercury	MG/KG	0.18	0.73	2.8			0.116		1.4
Nickel	MG/KG	30	130	310	15.2	28.6	18.2	40	7.78
Potassium	MG/KG	-	-	-	2,310	3,990	2,370	17,800	499
Selenium	MG/KG	3.9	4	1500			0.858	0.886	1.52
Silver	MG/KG	2	8.3	1500	4.84	3.95	2.07	4.51	3.26
Sodium	MG/KG	-	-	-			133	231	434
Thallium	MG/KG	5 CP-51	-	-				4	
Vanadium	MG/KG	39 CP-51	-	-	34.2	32.5	33.8	86.7	11.9
Zinc	MG/KG	109	2480	10000	35.6	44.8	43.6	91.7	342
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					1.92

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

Advanced Selection: Cedar SC Soil
J:\Projects\11175538.00000\DB\Program\EDMS.mde
Printed: 9/16/2014 8:05:05 AM
[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] < #10/29/2013#

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-15	TP-01	TP-01	TP-02	TP-02
Sample ID					SB-15	TP-01	TP-01	TP-02	TP-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	2.0-3.0	6.0-6.0	2.0-3.0	3.0-4.0
Date Sampled					01/12/09	12/04/08	12/04/08	12/05/08	12/05/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44	1,300				
Cyclohexane	MG/KG	-	-	-	31 J				
Ethylbenzene	MG/KG	1	1	390	2,700				
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-	33				
Methylcyclohexane	MG/KG	-	-	-	54				
Styrene	MG/KG	300 CP-51	-	-	210				
Toluene	MG/KG	0.7	0.7	500	1,800	0.038		0.014 J	
Xylene (total)	MG/KG	0.26	1.6	500	1,970				
Total BTEX	MG/KG	-	-	-	7,770	0.038	ND	0.014	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	8,098	0.038	ND	0.014	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	270				
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	1,000	0.89 J	0.04 J	0.89 J	0.041 J
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					0.054 J
Acenaphthene	MG/KG	20	98	500	410		0.049 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-15	TP-01	TP-01	TP-02	TP-02
Sample ID					SB-15	TP-01	TP-01	TP-02	TP-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	2.0-3.0	6.0-6.0	2.0-3.0	3.0-4.0
Date Sampled					01/12/09	12/04/08	12/04/08	12/05/08	12/05/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500	460	14	0.71	9.6	0.42
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	150	13	0.73	9.4	0.22 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	110	84	2.8	54	2.6
Benzo(a)pyrene	MG/KG	1	22	1	94	71	2.2	49	3 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	92	110	2.6	69	2.9
Benzo(g,h,i)perylene	MG/KG	100	1000	500	40 J	40	1.2 J	20 J	0.74 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	18 J	56 J	1.6 J	30 J	1.7 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					0.085 J
Carbazole	MG/KG	-	-	-		2.1 J	0.14 J	1.2 J	0.058 J
Chrysene	MG/KG	1	1	56	110	62 J	2.3 J	56 J	2.3 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	6.7 J	4.6 J	0.17 J	3.5 J	0.13 J
Dibenzofuran	MG/KG	7	210	350	12 J	1.4 J	0.11 J	1 J	
Fluoranthene	MG/KG	100	1000	500	210	99	2.8	55	2.9
Fluorene	MG/KG	30	386	500	220	2.1 J	0.19 J	0.94 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	27 J	13	0.75	11	0.43
Naphthalene	MG/KG	12	12	500	8,100	3.5 J	0.11 J	4.1 J	0.14 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-15	TP-01	TP-01	TP-02	TP-02
Sample ID					SB-15	TP-01	TP-01	TP-02	TP-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	2.0-3.0	6.0-6.0	2.0-3.0	3.0-4.0
Date Sampled					01/12/09	12/04/08	12/04/08	12/05/08	12/05/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	580	29	2.8	14	0.38
Pyrene	MG/KG	100	1000	500	270	120 J	3 J	66 J	2.9 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	11,897.7	722.09	24.049	452.43	20.801
Total Semivolatile Organic Compounds	MG/KG	-	-	-	12,179.7	725.59	24.299	454.63	20.998
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	4,900	3,790	10,600	7,590	10,200
Antimony	MG/KG	12 CP-51	-	-	3.34				
Arsenic	MG/KG	13	16	16	31.6	4.5	2.9	4.09	
Barium	MG/KG	350	820	400	352	93.8	60.6	78	86
Beryllium	MG/KG	7.2	47	590	0.118 J	0.227 J	0.431	0.285	0.317
Cadmium	MG/KG	2.5	7.5	9.3	1.39	0.301	0.227 J	0.244	0.312
Calcium	MG/KG	10000 CP-51	-	-	9,640	9,050	1,790	6,670	2,090
Chromium	MG/KG	30	NS	1500	11.3	9.43	25.3	21.7	29
Cobalt	MG/KG	20 CP-51	-	-	12.7	5.75	10.7	7	9.43
Copper	MG/KG	50	1720	270	129	37.9	20.2	26.2	31.1
Iron	MG/KG	2000 CP-51	-	-	38,900	11,300	20,000	17,100	18,200
Lead	MG/KG	63	450	1000	6,400	284	16.7	121	39.9
Magnesium	MG/KG	-	-	-	2,000	1,400	2,870	3,160	3,860

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-15	TP-01	TP-01	TP-02	TP-02
Sample ID					SB-15	TP-01	TP-01	TP-02	TP-02
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-17.0	2.0-3.0	6.0-6.0	2.0-3.0	3.0-4.0
Date Sampled					01/12/09	12/04/08	12/04/08	12/05/08	12/05/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	252	139	233	253	383
Mercury	MG/KG	0.18	0.73	2.8	1.2	4.4	0.109	0.257	0.292
Nickel	MG/KG	30	130	310	20	11.6	16.6	18.8	23.7
Potassium	MG/KG	-	-	-	712	806	1,270	2,310	3,300
Selenium	MG/KG	3.9	4	1500	2.3	0.825	0.65 J	0.671 J	0.625 J
Silver	MG/KG	2	8.3	1500	7.27	1.7	3	2.57	2.67
Sodium	MG/KG	-	-	-	604	215	81	181	159
Thallium	MG/KG	5 CP-51	-	-					
Vanadium	MG/KG	39 CP-51	-	-	14.7	14.4	28.9	21.6	28.9
Zinc	MG/KG	109	2480	10000	277	90.9	48.8	53.6	48.2
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27	2.52	2.35	0.703	2.1	0.925

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

Advanced Selection: Cedar SC Soil
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[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] < #10/29/2013#

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-02	TP-03	TP-03	TP-04	TP-04
Sample ID					TP-02	TP-03	TP-03	TP-04	TP-04
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					10.5-10.5	1.0-3.0	3.0-3.0	5.7-5.7	7.5-7.5
Date Sampled					12/05/08	12/09/08	12/09/08	12/02/08	12/02/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-					
Styrene	MG/KG	300 CP-51	-	-					
Toluene	MG/KG	0.7	0.7	500					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	ND	ND	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-				0.073 J	
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-				0.1 J	0.045 J
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500				0.15 J	0.056 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-02	TP-03	TP-03	TP-04	TP-04
Sample ID					TP-02	TP-03	TP-03	TP-04	TP-04
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					10.5-10.5	1.0-3.0	3.0-3.0	5.7-5.7	7.5-7.5
Date Sampled					12/05/08	12/09/08	12/09/08	12/02/08	12/02/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500		1.8 J	1 J	0.23 J	0.13 J
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500		0.86 J		0.089 J	0.042 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6		6.7 J	6 J	0.26 J	0.12 J
Benzo(a)pyrene	MG/KG	1	22	1		9.3	8.5	0.38	0.21 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		12	11	0.44	0.24 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500		8.8	7.6	0.45	0.27 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		3.7 J	3.6 J	0.12 J	0.067 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56		6.7 J	5.8 J	0.3 J	0.14 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56		1.1 J	1.1 J	0.048 J	
Dibenzofuran	MG/KG	7	210	350					
Fluoranthene	MG/KG	100	1000	500		13	10	0.69	0.2 J
Fluorene	MG/KG	30	386	500				0.065 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		6.5 J	5.8 J	0.32 J	0.19 J
Naphthalene	MG/KG	12	12	500				0.59	0.21 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-02	TP-03	TP-03	TP-04	TP-04
Sample ID					TP-02	TP-03	TP-03	TP-04	TP-04
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					10.5-10.5	1.0-3.0	3.0-3.0	5.7-5.7	7.5-7.5
Date Sampled					12/05/08	12/09/08	12/09/08	12/02/08	12/02/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500		4.6 J	3.7 J	0.6	0.093 J
Pyrene	MG/KG	100	1000	500		14	11	0.89	0.26 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	89.06	75.1	5.722	2.273
Total Semivolatile Organic Compounds	MG/KG	-	-	-	ND	89.06	75.1	5.795	2.273
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	12,800	3,270	3,460	10,500	10,900
Antimony	MG/KG	12 CP-51	-	-		1 J	1.16 J		
Arsenic	MG/KG	13	16	16		3.26	3.09		
Barium	MG/KG	350	820	400	60.2	70	82.9	111	125
Beryllium	MG/KG	7.2	47	590	0.414	0.172 J	0.169 J	0.294	0.277
Cadmium	MG/KG	2.5	7.5	9.3	0.117 J	0.646	0.545	2.4	2.46
Calcium	MG/KG	10000 CP-51	-	-	978	7,890	9,390	2,180	4,090
Chromium	MG/KG	30	NS	1500	24.8	12.5	7.55	25.7	33.4
Cobalt	MG/KG	20 CP-51	-	-	7.96	4.27	4.56	9.23	9.67
Copper	MG/KG	50	1720	270	20.7	59	45.8	44.7	84.3
Iron	MG/KG	2000 CP-51	-	-	18,100	8,980	8,390	17,500	18,700
Lead	MG/KG	63	450	1000	5.61	244	259	42.2	20.9
Magnesium	MG/KG	-	-	-	3,670	1,630	1,710	5,100	5,710

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-02	TP-03	TP-03	TP-04	TP-04
Sample ID					TP-02	TP-03	TP-03	TP-04	TP-04
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					10.5-10.5	1.0-3.0	3.0-3.0	5.7-5.7	7.5-7.5
Date Sampled					12/05/08	12/09/08	12/09/08	12/02/08	12/02/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Manganese	MG/KG	1600	2000	10000	234	155	169	294	294
Mercury	MG/KG	0.18	0.73	2.8	0.017	10.6	1.8	0.12	0.097
Nickel	MG/KG	30	130	310	14.5	12.1	8.85	33.7	100
Potassium	MG/KG	-	-	-	2,420	976	883	6,160	7,680
Selenium	MG/KG	3.9	4	1500	0.821			0.764	0.657 J
Silver	MG/KG	2	8.3	1500	2.63	0.834	0.789	3.39	3.52
Sodium	MG/KG	-	-	-	107	155	177	135	132
Thallium	MG/KG	5 CP-51	-	-				0.9 J	1.04 J
Vanadium	MG/KG	39 CP-51	-	-	30.6	12.1	11.8	32.2	34.4
Zinc	MG/KG	109	2480	10000	31.8	90.5	63	117	61.6
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27		1.57	4.63		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-05	TP-05	TP-05	TP-06	TP-06
Sample ID					TP-05	TP-05	TP-05 DUP	TP-06	TP-06
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.4-2.4	12.5-12.5	12.5-12.5	2.5-3.5	6.0-7.0
Date Sampled					12/02/08	12/02/08	12/02/08	12/03/08	12/03/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Volatile Organic Compounds									
Acetone	MG/KG	0.05	0.05	500					
Benzene	MG/KG	0.06	0.06	44	0.011 J				
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-			1.6 J		
Styrene	MG/KG	300 CP-51	-	-					
Toluene	MG/KG	0.7	0.7	500					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	0.011	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.011	ND	1.6	ND	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	9.3	0.84 J	0.5 J		
2,4-Dimethylphenol	MG/KG	-	-	-					
2,4-Dinitrotoluene	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	11			0.95 J	
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	3.2 J	8.6	5.8		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-05	TP-05	TP-05	TP-06	TP-06
Sample ID					TP-05	TP-05	TP-05 DUP	TP-06	TP-06
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.4-2.4	12.5-12.5	12.5-12.5	2.5-3.5	6.0-7.0
Date Sampled					12/02/08	12/02/08	12/02/08	12/03/08	12/03/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds									
Acenaphthylene	MG/KG	100	107	500	34	5.3	3.8 J	7.4 J	1.8 J
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	30	6.3	5.2	3.5 J	
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	26	7	7.6	19	0.61 J
Benzo(a)pyrene	MG/KG	1	22	1	33	6.8	6.9	38 J	2.5 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	31	6.4	6.2	54 J	2.5 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	34	5.4	5.3	19 J	1.5 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	11	2.4 J	2.6 J	17 J	0.8 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-					
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Carbazole	MG/KG	-	-	-				0.91 J	
Chrysene	MG/KG	1	1	56	29	6.9	6.7	20	0.75 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	2.5 J	0.51 J	0.49 J	1.6 J	
Dibenzofuran	MG/KG	7	210	350		1.4 J	1 J		
Fluoranthene	MG/KG	100	1000	500	99	22	21	27	0.41 J
Fluorene	MG/KG	30	386	500	23	7	5.2	1.4 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	23	3.9	3.9	8.6	1.1 J
Naphthalene	MG/KG	12	12	500	41	5.2	2.8 J	1.9 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-05	TP-05	TP-05	TP-06	TP-06
Sample ID					TP-05	TP-05	TP-05 DUP	TP-06	TP-06
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.4-2.4	12.5-12.5	12.5-12.5	2.5-3.5	6.0-7.0
Date Sampled					12/02/08	12/02/08	12/02/08	12/03/08	12/03/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds									
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51					
Phenanthrene	MG/KG	100	1000	500	120	28	26	18	
Pyrene	MG/KG	100	1000	500	110	20	22	41	0.96 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	660.7	141.71	131.49	278.35	12.93
Total Semivolatile Organic Compounds	MG/KG	-	-	-	670	143.95	132.99	279.26	12.93
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	7,110	9,170	9,170	6,250	12,400
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	8.98	0.703 J		7.84	1.76
Barium	MG/KG	350	820	400	74.6	48.3	43.4	126	91.1
Beryllium	MG/KG	7.2	47	590	0.301	0.38	0.408	0.414	0.672
Cadmium	MG/KG	2.5	7.5	9.3	1.62	2.08	2.09	2.15	2.13
Calcium	MG/KG	10000 CP-51	-	-	2,050	1,120	572	26,800	1,750
Chromium	MG/KG	30	NS	1500	17.2	16.6	16	26.1 J	25.2 J
Cobalt	MG/KG	20 CP-51	-	-	7.2	6.57	7.66	7.62	13.8
Copper	MG/KG	50	1720	270	29.5	13.6	15.7	178 J	3.5 J
Iron	MG/KG	2000 CP-51	-	-	12,900	17,200	17,600	15,900 J	20,300 J
Lead	MG/KG	63	450	1000	98.5	12.4	9.17	299 J	8.45 J
Magnesium	MG/KG	-	-	-	2,330	1,860	1,820	2,550	2,450

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-05	TP-05	TP-05	TP-06	TP-06
Sample ID					TP-05	TP-05	TP-05 DUP	TP-06	TP-06
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.4-2.4	12.5-12.5	12.5-12.5	2.5-3.5	6.0-7.0
Date Sampled					12/02/08	12/02/08	12/02/08	12/03/08	12/03/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**			Field Duplicate (1-1)		
Metals									
Manganese	MG/KG	1600	2000	10000	251	94.4	115	216 J	3,170 J
Mercury	MG/KG	0.18	0.73	2.8	0.11	0.014	0.011 J	4.1	0.023
Nickel	MG/KG	30	130	310	21.2	11.6	11.2	215 J	11.6 J
Potassium	MG/KG	-	-	-	1,210	1,150	1,150	1,180	619
Selenium	MG/KG	3.9	4	1500	1.15	1.28	1.83	0.989	
Silver	MG/KG	2	8.3	1500	2.37	3.12	3.21	3.2	4.23
Sodium	MG/KG	-	-	-	68.5 J	62 J		188	65.1 J
Thallium	MG/KG	5 CP-51	-	-					
Vanadium	MG/KG	39 CP-51	-	-	20.3	20.8	21.6	19.1	33.4
Zinc	MG/KG	109	2480	10000	57.8	28.5	23.8	178 J	30.9 J
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27	1.01			9.52	2.65

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-06	TP-07	TP-07	TP-07
Sample ID					TP-06	TP-07 IH	TP-07 IH	TP-07 OH
Matrix					Soil	Soil	Soil	Soil
Depth Interval (ft)					9.5-9.5	7.0-9.0	9.0-9.0	9.0-9.0
Date Sampled					12/03/08	12/10/08	12/10/08	12/10/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**				(2-1)
Volatile Organic Compounds								
Acetone	MG/KG	0.05	0.05	500				
Benzene	MG/KG	0.06	0.06	44				
Cyclohexane	MG/KG	-	-	-				
Ethylbenzene	MG/KG	1	1	390			0.066	3.6
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-			0.0084 J	1
Methylcyclohexane	MG/KG	-	-	-				
Styrene	MG/KG	300 CP-51	-	-				0.037
Toluene	MG/KG	0.7	0.7	500				0.017 J
Xylene (total)	MG/KG	0.26	1.6	500			0.022 J	4.1
Total BTEX	MG/KG	-	-	-	ND	ND	0.088	7.717
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	0.0964	8.754
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		0.47 J	3.7 J	5.3
2,4-Dimethylphenol	MG/KG	-	-	-				
2,4-Dinitrotoluene	MG/KG	-	-	-				
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.25 J	1.3 J	12	38
2-Nitroaniline	MG/KG	0.4 CP-51	0.4 CP-51	-				
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	0.33	500				
Acenaphthene	MG/KG	20	98	500		3.6 J	18	5.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-06	TP-07	TP-07	TP-07
Sample ID					TP-06	TP-07 IH	TP-07 IH	TP-07 OH
Matrix					Soil	Soil	Soil	Soil
Depth Interval (ft)					9.5-9.5	7.0-9.0	9.0-9.0	9.0-9.0
Date Sampled					12/03/08	12/10/08	12/10/08	12/10/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**				(2-1)
Semivolatile Organic Compounds								
Acenaphthylene	MG/KG	100	107	500	1.1 J	2.2 J	4.5 J	13
Acetophenone	MG/KG	-	-	-				
Anthracene	MG/KG	100	1000	500	0.21 J	0.74 J	2.7 J	5.2
Benzaldehyde	MG/KG	-	-	-				
Benzo(a)anthracene	MG/KG	1	1	5.6		3.1 J	4.9 J	4.4
Benzo(a)pyrene	MG/KG	1	22	1	1.7 J	3.5 J	5.7 J	3.5 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	1.5 J	3 J	4.6 J	2.7 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	1 J	2.1 J	4 J	1.9 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.43 J	1.1 J	1.3 J	1.2 J
bis(2-Chloroethyl)ether	MG/KG	-	-	-				
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-				
Carbazole	MG/KG	-	-	-				
Chrysene	MG/KG	1	1	56	0.36 J	3.1 J	4.5 J	4.1
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.24 J			
Dibenzofuran	MG/KG	7	210	350				
Fluoranthene	MG/KG	100	1000	500		5	7.5 J	8.2
Fluorene	MG/KG	30	386	500		0.78 J	3.5 J	7.7
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.8 J	1.5 J	2.9 J	1.3 J
Naphthalene	MG/KG	12	12	500		6.9	91	130

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-06	TP-07	TP-07	TP-07
Sample ID					TP-06	TP-07 IH	TP-07 IH	TP-07 OH
Matrix					Soil	Soil	Soil	Soil
Depth Interval (ft)					9.5-9.5	7.0-9.0	9.0-9.0	9.0-9.0
Date Sampled					12/03/08	12/10/08	12/10/08	12/10/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**				(2-1)
Semivolatile Organic Compounds								
Nitrobenzene	MG/KG	0.17 CP-51	0.17 CP-51	69 CP-51				
Phenanthrene	MG/KG	100	1000	500		2.6 J	8.4	20
Pyrene	MG/KG	100	1000	500	0.21 J	7.4	12	11
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	7.8	47.92	187.5	257.9
Total Semivolatile Organic Compounds	MG/KG	-	-	-	7.8	48.39	191.2	263.2
Metals								
Aluminum	MG/KG	10000 CP-51	-	-	14,800		11,500	10,800
Antimony	MG/KG	12 CP-51	-	-				
Arsenic	MG/KG	13	16	16		1.18	1.96	3.59
Barium	MG/KG	350	820	400	71	150	134	66.5
Beryllium	MG/KG	7.2	47	590	0.485	0.284	0.284	0.48
Cadmium	MG/KG	2.5	7.5	9.3	2.64	1.19	1.16	1.12
Calcium	MG/KG	10000 CP-51	-	-	1,360	3,060	2,540	1,480
Chromium	MG/KG	30	NS	1500	25 J	25.9	26.1	20.6
Cobalt	MG/KG	20 CP-51	-	-	5.49	10.8	9.98	8.47
Copper	MG/KG	50	1720	270	8.36 J	27.4	25.8	11.3
Iron	MG/KG	2000 CP-51	-	-	28,700 J	21,700	19,900	20,500
Lead	MG/KG	63	450	1000	12.4 J	20.9	19.5	8.2
Magnesium	MG/KG	-	-	-	2,510	7,190	6,780	2,490

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

Advanced Selection: Cedar SC Soil
J:\Projects\11175538.00000\DB\Program\EDMS.mde
Printed: 9/16/2014 8:05:10 AM
[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] < #10/29/2013#

TABLE 4-3
SUMMARY OF DETECTED COMPOUNDS IN SITE CHARACTERIZATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-06	TP-07	TP-07	TP-07
Sample ID					TP-06	TP-07 IH	TP-07 IH	TP-07 OH
Matrix					Soil	Soil	Soil	Soil
Depth Interval (ft)					9.5-9.5	7.0-9.0	9.0-9.0	9.0-9.0
Date Sampled					12/03/08	12/10/08	12/10/08	12/10/08
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**				(2-1)
Metals								
Manganese	MG/KG	1600	2000	10000	479 J	397	370	221
Mercury	MG/KG	0.18	0.73	2.8	0.013	0.104	0.093	0.025
Nickel	MG/KG	30	130	310	11.1 J	17.1	17.1	13.4
Potassium	MG/KG	-	-	-	709	8,930	8,490	1,070
Selenium	MG/KG	3.9	4	1500				
Silver	MG/KG	2	8.3	1500	5.41	2	1.85	1.86
Sodium	MG/KG	-	-	-		166	153	74.3 J
Thallium	MG/KG	5 CP-51	-	-		0.907 J	0.777 J	
Vanadium	MG/KG	39 CP-51	-	-	38.9	38.3	37.9	30.1
Zinc	MG/KG	109	2480	10000	25.8 J	58.1	59.8	30.8
Miscellaneous Parameters								
Cyanide, Total	MG/KG	27	40	27	1.98	0.992		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected.

Only Detected Results Reported.

TABLE 4-4A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	0.05	59	3	0.110	0.220	0.150	3	SB-09	7-9
Benzene	MG/KG	0.06	59	19	0.007	1,600	192.8	14	SB-03	13-13
Cyclohexane	MG/KG	-	59	8	0.200	31.00	9.56	0	SB-15	15-17
Ethylbenzene	MG/KG	1	59	24	0.006	3,500	316.3	11	SB-03	13-13
Isopropylbenzene	MG/KG	2.3 CP-51	59	23	0.008	54.00	6.46	6	SB-03	13-13
Methylcyclohexane	MG/KG	-	59	16	0.018	170.0	20.78	0	SB-03	13-13
Styrene	MG/KG	300 CP-51	59	9	0.015	1,500	200.0	1	SB-03	13-13
Toluene	MG/KG	0.7	59	21	0.011	3,000	274.8	8	SB-03	13-13
Xylene (total)	MG/KG	0.26	59	25	0.019	3,400	265.0	15	SB-03	13-13
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	60 CP-51	59	28	0.056	270.0	20.46	3	SB-15	15-17
2,4-Dimethylphenol	MG/KG	-	59	1	3.30	3.30	3.30	0	SB-07	11-13
2,4-Dinitrotoluene	MG/KG	-	59	1	0.028	0.028	0.028	0	SB-03	11-13
2-Methylnaphthalene	MG/KG	0.41 CP-51	59	39	0.040	1,000	49.32	32	SB-15	15-17
2-Nitroaniline	MG/KG	0.4 CP-51	59	1	0.034	0.034	0.034	0	SB-03	11-13
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	59	2	0.054	0.960	0.507	1	SB-07	11-13
Acenaphthene	MG/KG	20	59	34	0.049	410.0	24.84	5	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthylene	MG/KG	100	59	36	0.130	460.0	31.22	3	SB-15	15-17
Acetophenone	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Anthracene	MG/KG	100	59	42	0.042	150.0	14.84	1	SB-15	15-17
Benzaldehyde	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Benzo(a)anthracene	MG/KG	1	59	45	0.040	160.0	16.87	33	MW-02	7-9
Benzo(a)pyrene	MG/KG	1	59	42	0.081	95.00	15.17	33	MW-02	7-9
Benzo(b)fluoranthene	MG/KG	1	59	45	0.039	150.0	17.73	36	MW-02	7-9
Benzo(g,h,i)perylene	MG/KG	100	59	40	0.044	54.00	9.20	0	MW-02	7-9
Benzo(k)fluoranthene	MG/KG	0.8	59	39	0.049	56.00	7.07	28	TP-01	2-3
bis(2-Chloroethyl)ether	MG/KG	-	59	1	0.010	0.010	0.010	0	SB-03	11-13
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	59	15	0.026	2.10	0.350	0	MW-05	13-15
Carbazole	MG/KG	-	59	17	0.058	23.00	3.55	0	SB-07	11-13
Chrysene	MG/KG	1	59	45	0.100	130.0	14.79	32	MW-02	7-9
Dibenz(a,h)anthracene	MG/KG	0.33	59	24	0.048	15.00	2.25	18	MW-02	7-9
Dibenzofuran	MG/KG	7	59	23	0.013	61.00	7.11	4	SB-07	11-13
Fluoranthene	MG/KG	100	59	47	0.050	310.0	32.36	4	MW-02	7-9
Fluorene	MG/KG	30	59	39	0.045	220.0	18.44	6	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	59	39	0.041	43.00	6.15	32	MW-02	7-9
Naphthalene	MG/KG	12	59	42	0.110	9,000	567.5	14	SB-15	13-15
Nitrobenzene	MG/KG	0.17 CP-51	59	1	0.020	0.020	0.020	0	SB-03	11-13
Phenanthrene	MG/KG	100	59	48	0.043	580.0	47.29	6	SB-15	15-17
Pyrene	MG/KG	100	59	48	0.045	280.0	34.85	7	MW-02	7-9
Metals										
Aluminum	MG/KG	10000 CP-51	59	58	2,480	2.38E+04	1.05E+04	31	SB-14	23-25
Antimony	MG/KG	12 CP-51	59	8	1.00	3.34	1.47	0	SB-15	15-17
Arsenic	MG/KG	13	59	38	0.614	31.60	4.12	3	SB-15	15-17
Barium	MG/KG	350	59	59	39.20	352.0	112.7	1	SB-15	15-17
Beryllium	MG/KG	7.2	59	59	0.057	0.672	0.272	0	TP-06	6-7
Cadmium	MG/KG	2.5	59	39	0.117	2.77	1.18	2	MW-06	17-19
Calcium	MG/KG	10000 CP-51	59	50	421.0	4.71E+04	5,639	6	MW-03	16-16
Chromium	MG/KG	30	59	59	6.34	97.10	28.37	18	MW-05	2-3
Cobalt	MG/KG	20 CP-51	59	59	3.25	29.50	9.83	3	SB-12	11-13
Copper	MG/KG	50	59	59	3.50	196.0	36.81	9	SB-15	13-15
Iron	MG/KG	2000 CP-51	59	59	5,120	4.32E+04	1.97E+04	59	SB-14	23-25

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Lead	MG/KG	63	59	59	2.19	6,400	164.3	12	SB-15	15-17
Magnesium	MG/KG	-	59	59	1,400	3.05E+04	5,152	0	MW-03	16-16
Manganese	MG/KG	1600	59	59	89.10	3,170	359.3	1	TP-06	6-7
Mercury	MG/KG	0.18	59	44	0.009	10.60	0.637	15	TP-03	1-3
Nickel	MG/KG	30	59	59	3.92	215.0	24.30	10	TP-06	2.5-3.5
Potassium	MG/KG	-	59	59	499.0	1.78E+04	4,147	0	SB-14	23-25
Selenium	MG/KG	3.9	59	35	0.625	2.30	1.08	0	SB-15	15-17
Silver	MG/KG	2	59	59	0.329	7.27	2.75	43	SB-15	15-17
Sodium	MG/KG	-	59	41	62.00	604.0	179.0	0	SB-15	15-17
Thallium	MG/KG	5 CP-51	59	21	0.747	4.00	1.54	0	SB-14	23-25
Vanadium	MG/KG	39 CP-51	59	59	8.80	86.70	30.94	10	SB-14	23-25
Zinc	MG/KG	109	59	59	18.70	342.0	67.74	7	SB-15	13-15
Miscellaneous Parameters										
Cyanide, Total	MG/KG	27	59	21	0.703	26.00	3.42	0	SB-04	21-23

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

Advanced Selection: Cedar SC Soil
J:\Projects\11175538.00000\DB\Program\Stat.mde
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WHERE [SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] < #10/29/2013#;

TABLE 4-4B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	0.05	59	3	0.110	0.220	0.150	3	SB-09	7-9
Benzene	MG/KG	0.06	59	19	0.007	1,600	192.8	14	SB-03	13-13
Cyclohexane	MG/KG	-	59	8	0.200	31.00	9.56	0	SB-15	15-17
Ethylbenzene	MG/KG	1	59	24	0.006	3,500	316.3	11	SB-03	13-13
Isopropylbenzene	MG/KG	2.3 CP-51	59	23	0.008	54.00	6.46	6	SB-03	13-13
Methylcyclohexane	MG/KG	-	59	16	0.018	170.0	20.78	0	SB-03	13-13
Styrene	MG/KG	-	59	9	0.015	1,500	200.0	0	SB-03	13-13
Toluene	MG/KG	0.7	59	21	0.011	3,000	274.8	8	SB-03	13-13
Xylene (total)	MG/KG	1.6	59	25	0.019	3,400	265.0	12	SB-03	13-13
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	59	28	0.056	270.0	20.46	0	SB-15	15-17
2,4-Dimethylphenol	MG/KG	-	59	1	3.30	3.30	3.30	0	SB-07	11-13
2,4-Dinitrotoluene	MG/KG	-	59	1	0.028	0.028	0.028	0	SB-03	11-13
2-Methylnaphthalene	MG/KG	36.4 CP-51	59	39	0.040	1,000	49.32	6	SB-15	15-17
2-Nitroaniline	MG/KG	0.4 CP-51	59	1	0.034	0.034	0.034	0	SB-03	11-13
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	59	2	0.054	0.960	0.507	1	SB-07	11-13
Acenaphthene	MG/KG	98	59	34	0.049	410.0	24.84	2	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthylene	MG/KG	107	59	36	0.130	460.0	31.22	3	SB-15	15-17
Acetophenone	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Anthracene	MG/KG	1000	59	42	0.042	150.0	14.84	0	SB-15	15-17
Benzaldehyde	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Benzo(a)anthracene	MG/KG	1	59	45	0.040	160.0	16.87	32	MW-02	7-9
Benzo(a)pyrene	MG/KG	22	59	42	0.081	95.00	15.17	9	MW-02	7-9
Benzo(b)fluoranthene	MG/KG	1.7	59	45	0.039	150.0	17.73	31	MW-02	7-9
Benzo(g,h,i)perylene	MG/KG	1000	59	40	0.044	54.00	9.20	0	MW-02	7-9
Benzo(k)fluoranthene	MG/KG	1.7	59	39	0.049	56.00	7.07	21	TP-01	2-3
bis(2-Chloroethyl)ether	MG/KG	-	59	1	0.010	0.010	0.010	0	SB-03	11-13
bis(2-Ethylhexyl)phthalate	MG/KG	435 CP-51	59	15	0.026	2.10	0.350	0	MW-05	13-15
Carbazole	MG/KG	-	59	17	0.058	23.00	3.55	0	SB-07	11-13
Chrysene	MG/KG	1	59	45	0.100	130.0	14.79	32	MW-02	7-9
Dibenz(a,h)anthracene	MG/KG	1000	59	24	0.048	15.00	2.25	0	MW-02	7-9
Dibenzofuran	MG/KG	210	59	23	0.013	61.00	7.11	0	SB-07	11-13
Fluoranthene	MG/KG	1000	59	47	0.050	310.0	32.36	0	MW-02	7-9
Fluorene	MG/KG	386	59	39	0.045	220.0	18.44	0	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Indeno(1,2,3-cd)pyrene	MG/KG	8.2	59	39	0.041	43.00	6.15	9	MW-02	7-9
Naphthalene	MG/KG	12	59	42	0.110	9,000	567.5	14	SB-15	13-15
Nitrobenzene	MG/KG	0.17 CP-51	59	1	0.020	0.020	0.020	0	SB-03	11-13
Phenanthrene	MG/KG	1000	59	48	0.043	580.0	47.29	0	SB-15	15-17
Pyrene	MG/KG	1000	59	48	0.045	280.0	34.85	0	MW-02	7-9
Metals										
Aluminum	MG/KG	-	59	58	2,480	2.38E+04	1.05E+04	0	SB-14	23-25
Antimony	MG/KG	-	59	8	1.00	3.34	1.47	0	SB-15	15-17
Arsenic	MG/KG	16	59	38	0.614	31.60	4.12	2	SB-15	15-17
Barium	MG/KG	820	59	59	39.20	352.0	112.7	0	SB-15	15-17
Beryllium	MG/KG	47	59	59	0.057	0.672	0.272	0	TP-06	6-7
Cadmium	MG/KG	7.5	59	39	0.117	2.77	1.18	0	MW-06	17-19
Calcium	MG/KG	-	59	50	421.0	4.71E+04	5,639	0	MW-03	16-16
Chromium	MG/KG	NS	59	59	6.34	97.10	28.37	0	MW-05	2-3
Cobalt	MG/KG	-	59	59	3.25	29.50	9.83	0	SB-12	11-13
Copper	MG/KG	1720	59	59	3.50	196.0	36.81	0	SB-15	13-15
Iron	MG/KG	-	59	59	5,120	4.32E+04	1.97E+04	0	SB-14	23-25

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Lead	MG/KG	450	59	59	2.19	6,400	164.3	2	SB-15	15-17
Magnesium	MG/KG	-	59	59	1,400	3.05E+04	5,152	0	MW-03	16-16
Manganese	MG/KG	2000	59	59	89.10	3,170	359.3	1	TP-06	6-7
Mercury	MG/KG	0.73	59	44	0.009	10.60	0.637	6	TP-03	1-3
Nickel	MG/KG	130	59	59	3.92	215.0	24.30	1	TP-06	2.5-3.5
Potassium	MG/KG	-	59	59	499.0	1.78E+04	4,147	0	SB-14	23-25
Selenium	MG/KG	4	59	35	0.625	2.30	1.08	0	SB-15	15-17
Silver	MG/KG	8.3	59	59	0.329	7.27	2.75	0	SB-15	15-17
Sodium	MG/KG	-	59	41	62.00	604.0	179.0	0	SB-15	15-17
Thallium	MG/KG	-	59	21	0.747	4.00	1.54	0	SB-14	23-25
Vanadium	MG/KG	-	59	59	8.80	86.70	30.94	0	SB-14	23-25
Zinc	MG/KG	2480	59	59	18.70	342.0	67.74	0	SB-15	13-15
Miscellaneous Parameters										
Cyanide, Total	MG/KG	40	59	21	0.703	26.00	3.42	0	SB-04	21-23

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	500	59	3	0.110	0.220	0.150	0	SB-09	7-9
Benzene	MG/KG	44	59	19	0.007	1,600	192.8	3	SB-03	13-13
Cyclohexane	MG/KG	-	59	8	0.200	31.00	9.56	0	SB-15	15-17
Ethylbenzene	MG/KG	390	59	24	0.006	3,500	316.3	3	SB-03	13-13
Isopropylbenzene	MG/KG	-	59	23	0.008	54.00	6.46	0	SB-03	13-13
Methylcyclohexane	MG/KG	-	59	16	0.018	170.0	20.78	0	SB-03	13-13
Styrene	MG/KG	-	59	9	0.015	1,500	200.0	0	SB-03	13-13
Toluene	MG/KG	500	59	21	0.011	3,000	274.8	3	SB-03	13-13
Xylene (total)	MG/KG	500	59	25	0.019	3,400	265.0	3	SB-03	13-13
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	59	28	0.056	270.0	20.46	0	SB-15	15-17
2,4-Dimethylphenol	MG/KG	-	59	1	3.30	3.30	3.30	0	SB-07	11-13
2,4-Dinitrotoluene	MG/KG	-	59	1	0.028	0.028	0.028	0	SB-03	11-13
2-Methylnaphthalene	MG/KG	-	59	39	0.040	1,000	49.32	0	SB-15	15-17
2-Nitroaniline	MG/KG	-	59	1	0.034	0.034	0.034	0	SB-03	11-13
3&4-Methylphenol (m,p-cresol)	MG/KG	500	59	2	0.054	0.960	0.507	0	SB-07	11-13
Acenaphthene	MG/KG	500	59	34	0.049	410.0	24.84	0	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

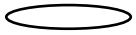
Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthylene	MG/KG	500	59	36	0.130	460.0	31.22	0	SB-15	15-17
Acetophenone	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Anthracene	MG/KG	500	59	42	0.042	150.0	14.84	0	SB-15	15-17
Benzaldehyde	MG/KG	-	59	1	0.014	0.014	0.014	0	SB-03	11-13
Benzo(a)anthracene	MG/KG	5.6	59	45	0.040	160.0	16.87	19	MW-02	7-9
Benzo(a)pyrene	MG/KG	1	59	42	0.081	95.00	15.17	33	MW-02	7-9
Benzo(b)fluoranthene	MG/KG	5.6	59	45	0.039	150.0	17.73	19	MW-02	7-9
Benzo(g,h,i)perylene	MG/KG	500	59	40	0.044	54.00	9.20	0	MW-02	7-9
Benzo(k)fluoranthene	MG/KG	56	59	39	0.049	56.00	7.07	0	TP-01	2-3
bis(2-Chloroethyl)ether	MG/KG	-	59	1	0.010	0.010	0.010	0	SB-03	11-13
bis(2-Ethylhexyl)phthalate	MG/KG	-	59	15	0.026	2.10	0.350	0	MW-05	13-15
Carbazole	MG/KG	-	59	17	0.058	23.00	3.55	0	SB-07	11-13
Chrysene	MG/KG	56	59	45	0.100	130.0	14.79	3	MW-02	7-9
Dibenz(a,h)anthracene	MG/KG	0.56	59	24	0.048	15.00	2.25	13	MW-02	7-9
Dibenzofuran	MG/KG	350	59	23	0.013	61.00	7.11	0	SB-07	11-13
Fluoranthene	MG/KG	500	59	47	0.050	310.0	32.36	0	MW-02	7-9
Fluorene	MG/KG	500	59	39	0.045	220.0	18.44	0	SB-15	15-17

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.


Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	59	39	0.041	43.00	6.15	12	MW-02	7-9
Naphthalene	MG/KG	500	59	42	0.110	9,000	567.5	3	SB-15	13-15
Nitrobenzene	MG/KG	69 CP-51	59	1	0.020	0.020	0.020	0	SB-03	11-13
Phenanthrene	MG/KG	500	59	48	0.043	580.0	47.29	1	SB-15	15-17
Pyrene	MG/KG	500	59	48	0.045	280.0	34.85	0	MW-02	7-9
Metals										
Aluminum	MG/KG	-	59	58	2,480	2.38E+04	1.05E+04	0	SB-14	23-25
Antimony	MG/KG	-	59	8	1.00	3.34	1.47	0	SB-15	15-17
Arsenic	MG/KG	16	59	38	0.614	31.60	4.12	2	SB-15	15-17
Barium	MG/KG	400	59	59	39.20	352.0	112.7	0	SB-15	15-17
Beryllium	MG/KG	590	59	59	0.057	0.672	0.272	0	TP-06	6-7
Cadmium	MG/KG	9.3	59	39	0.117	2.77	1.18	0	MW-06	17-19
Calcium	MG/KG	-	59	50	421.0	4.71E+04	5,639	0	MW-03	16-16
Chromium	MG/KG	1500	59	59	6.34	97.10	28.37	0	MW-05	2-3
Cobalt	MG/KG	-	59	59	3.25	29.50	9.83	0	SB-12	11-13
Copper	MG/KG	270	59	59	3.50	196.0	36.81	0	SB-15	13-15
Iron	MG/KG	-	59	59	5,120	4.32E+04	1.97E+04	0	SB-14	23-25

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-4C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN SITE CHARACTERIZATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Lead	MG/KG	1000	59	59	2.19	6,400	164.3	1	SB-15	15-17
Magnesium	MG/KG	-	59	59	1,400	3.05E+04	5,152	0	MW-03	16-16
Manganese	MG/KG	10000	59	59	89.10	3,170	359.3	0	TP-06	6-7
Mercury	MG/KG	2.8	59	44	0.009	10.60	0.637	3	TP-03	1-3
Nickel	MG/KG	310	59	59	3.92	215.0	24.30	0	TP-06	2.5-3.5
Potassium	MG/KG	-	59	59	499.0	1.78E+04	4,147	0	SB-14	23-25
Selenium	MG/KG	1500	59	35	0.625	2.30	1.08	0	SB-15	15-17
Silver	MG/KG	1500	59	59	0.329	7.27	2.75	0	SB-15	15-17
Sodium	MG/KG	-	59	41	62.00	604.0	179.0	0	SB-15	15-17
Thallium	MG/KG	-	59	21	0.747	4.00	1.54	0	SB-14	23-25
Vanadium	MG/KG	-	59	59	8.80	86.70	30.94	0	SB-14	23-25
Zinc	MG/KG	10000	59	59	18.70	342.0	67.74	0	SB-15	13-15
Miscellaneous Parameters										
Cyanide, Total	MG/KG	27	59	21	0.703	26.00	3.42	0	SB-04	21-23

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-02B	MW-02B	MW-08A	MW-08A	MW-08A
Sample ID					111413-DUP-1	MW-02B (3.5-4)	MW-08A (2.7-2.9)	MW-08A (9.5-10)	MW-08A (15-16)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.5-4.0	2.7-2.9	9.5-10.0	15.0-16.0
Date Sampled					11/14/13	11/14/13	10/29/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190					
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190					
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500					0.0044 J
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-					
Methylene chloride	MG/KG	0.05	0.05	500	0.0044 J	0.0021 J	0.0023 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-02B	MW-02B	MW-08A	MW-08A	MW-08A
Sample ID					111413-DUP-1	MW-02B (3.5-4)	MW-08A (2.7-2.9)	MW-08A (9.5-10)	MW-08A (15-16)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.5-4.0	2.7-2.9	9.5-10.0	15.0-16.0
Date Sampled					11/14/13	11/14/13	10/29/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					
n-Propylbenzene	MG/KG	3.9	3.9	500					
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0044	0.0021	0.0023	ND	0.0044
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.52	0.50			
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500	0.12 J				
Acenaphthene	MG/KG	20	98	500	0.20 J				
Acenaphthylene	MG/KG	100	107	500	4.8	3.9			

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-02B	MW-02B	MW-08A	MW-08A	MW-08A
Sample ID					111413-DUP-1	MW-02B (3.5-4)	MW-08A (2.7-2.9)	MW-08A (9.5-10)	MW-08A (15-16)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.5-4.0	2.7-2.9	9.5-10.0	15.0-16.0
Date Sampled					11/14/13	11/14/13	10/29/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	3.4	2.3	0.10 J		
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	16 D	11 D	0.29 J		
Benzo(a)pyrene	MG/KG	1	22	1	20 D	15 D	0.31 J		
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	22 D	14 D	0.38		
Benzo(g,h,i)perylene	MG/KG	100	1000	500	17 D	14 D	0.24 J		
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	10 D	5.4	0.19 J		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-	0.44	0.23 J			
Chrysene	MG/KG	1	1	56	17 D	11 D	0.32 J		
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	6.2	4.4	0.070 J		
Dibenzofuran	MG/KG	7	210	350	0.23 J	0.17 J			
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	27 D	17 D	0.58		
Fluorene	MG/KG	30	386	500	0.79	0.56			
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	15 D	12 D	0.23 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-02B	MW-02B	MW-08A	MW-08A	MW-08A
Sample ID					111413-DUP-1	MW-02B (3.5-4)	MW-08A (2.7-2.9)	MW-08A (9.5-10)	MW-08A (15-16)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.5-4.0	2.7-2.9	9.5-10.0	15.0-16.0
Date Sampled					11/14/13	11/14/13	10/29/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	0.39 J	0.42			
Phenanthrene	MG/KG	100	1000	500	9.3 D	5.4	0.33		
Phenol	MG/KG	0.33	0.33	500	0.11 J				
Pyrene	MG/KG	100	1000	500	32 D	23 D	0.54		
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	201.6	139.88	3.58	ND	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	202.5	140.28	3.58	ND	ND
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	9,900	10,100	8,810	7,500	15,800
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	4.1	4.0	1.6	1.1	0.88 J
Barium	MG/KG	350	820	400	93.7	100	67.7	66.0	183
Beryllium	MG/KG	7.2	47	590	0.28	0.28	0.24	0.27	0.073 J
Cadmium	MG/KG	2.5	7.5	9.3					
Calcium	MG/KG	10000 CP-51	-	-	45,200 J	16,000 J	2,000	2,540	2,250
Chromium	MG/KG	30	NS	1500	21.6	23.1	16.9	16.0	25.4
Cobalt	MG/KG	20 CP-51	-	-	7.4	9.4	7.1	6.2	9.0
Copper	MG/KG	50	1720	270	33.2	32.4	22.6	20.3	23.6
Iron	MG/KG	2000 CP-51	-	-	16,400	18,300	13,300	14,700	33,100
Lead	MG/KG	63	450	1000	127	118	18.4	3.9	5.1

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-02B	MW-02B	MW-08A	MW-08A	MW-08A
Sample ID					111413-DUP-1	MW-02B (3.5-4)	MW-08A (2.7-2.9)	MW-08A (9.5-10)	MW-08A (15-16)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.5-4.0	2.7-2.9	9.5-10.0	15.0-16.0
Date Sampled					11/14/13	11/14/13	10/29/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Metals									
Magnesium	MG/KG	-	-	-	3,550	3,900	3,130	2,390	7,030
Manganese	MG/KG	1600	2000	10000	321	338	386	532	299
Mercury	MG/KG	0.18	0.73	2.8	1.1	0.94	0.17		
Nickel	MG/KG	30	130	310	19.0	22.9	20.6	19.9	17.4
Potassium	MG/KG	-	-	-	3,700	3,780	2,500	2,330	11,400
Selenium	MG/KG	3.9	4	1500	0.89 J	1.1 J			
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	148	124	109	128	171
Thallium	MG/KG	5 CP-51	-	-	2.1	1.5	0.91	0.94	2.0
Vanadium	MG/KG	39 CP-51	-	-	24.6	25.3	20.9	21.0	37.3
Zinc	MG/KG	109	2480	10000	51.9	57.1	31.8	21.2	48.5
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-08B	MW-08B	MW-08B	MW-09	MW-09
Sample ID					MW-08B (3-3.2)	MW-08B (9.5-10.5)	MW-08B (15-16)	MW-09 (8.2-8.8)	MW-09 (14.8-15.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.0-3.2	9.5-10.5	15.0-16.0	8.2-8.8	14.8-15.5
Date Sampled					10/29/13	10/30/13	10/30/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190					
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190					
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500				0.0043 J	
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500				0.021	
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-					
Methylene chloride	MG/KG	0.05	0.05	500				0.0020 J	0.0020 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-08B	MW-08B	MW-08B	MW-09	MW-09
Sample ID					MW-08B (3-3.2)	MW-08B (9.5-10.5)	MW-08B (15-16)	MW-09 (8.2-8.8)	MW-09 (14.8-15.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.0-3.2	9.5-10.5	15.0-16.0	8.2-8.8	14.8-15.5
Date Sampled					10/29/13	10/30/13	10/30/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					
n-Propylbenzene	MG/KG	3.9	3.9	500					
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	ND	ND	0.0273	0.002
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-					
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500					
Acenaphthylene	MG/KG	100	107	500					

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-08B	MW-08B	MW-08B	MW-09	MW-09
Sample ID					MW-08B (3-3.2)	MW-08B (9.5-10.5)	MW-08B (15-16)	MW-09 (8.2-8.8)	MW-09 (14.8-15.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.0-3.2	9.5-10.5	15.0-16.0	8.2-8.8	14.8-15.5
Date Sampled					10/29/13	10/30/13	10/30/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500					
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.19 J				
Benzo(a)pyrene	MG/KG	1	22	1	0.22 J				
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.25 J				
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.16 J				
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.14 J				
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56	0.22 J				
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56					
Dibenzofuran	MG/KG	7	210	350					
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-		0.071 J			
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	0.36				
Fluorene	MG/KG	30	386	500					
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.16 J				

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-08B	MW-08B	MW-08B	MW-09	MW-09
Sample ID					MW-08B (3-3.2)	MW-08B (9.5-10.5)	MW-08B (15-16)	MW-09 (8.2-8.8)	MW-09 (14.8-15.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.0-3.2	9.5-10.5	15.0-16.0	8.2-8.8	14.8-15.5
Date Sampled					10/29/13	10/30/13	10/30/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500					
Phenanthrene	MG/KG	100	1000	500	0.15 J				
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	0.35				
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	2.2	ND	ND	ND	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	2.2	0.071	ND	ND	ND
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	9,380	10,200	11,800	8,230	6,930
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.7	0.57 J	0.83	1.0	1.3
Barium	MG/KG	350	820	400	79.4	118	139	76.8	42.5
Beryllium	MG/KG	7.2	47	590	0.29	0.25	0.23	0.22	0.21 J
Cadmium	MG/KG	2.5	7.5	9.3	0.074 J				
Calcium	MG/KG	10000 CP-51	-	-	1,520	3,240	3,150	2,130	1,540
Chromium	MG/KG	30	NS	1500	19.0	28.8	32.5	27.3	36.4
Cobalt	MG/KG	20 CP-51	-	-	7.5	8.0	9.5	7.4	6.5
Copper	MG/KG	50	1720	270	32.9	15.8	22.4	17.1	28.0
Iron	MG/KG	2000 CP-51	-	-	14,100	16,200	18,000	14,500	14,000
Lead	MG/KG	63	450	1000	15.5	4.2	4.7	4.9	3.5

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-08B	MW-08B	MW-08B	MW-09	MW-09
Sample ID					MW-08B (3-3.2)	MW-08B (9.5-10.5)	MW-08B (15-16)	MW-09 (8.2-8.8)	MW-09 (14.8-15.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.0-3.2	9.5-10.5	15.0-16.0	8.2-8.8	14.8-15.5
Date Sampled					10/29/13	10/30/13	10/30/13	10/30/13	10/30/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	3,100	6,030	6,650	3,840	3,310
Manganese	MG/KG	1600	2000	10000	541	215	251	262	252
Mercury	MG/KG	0.18	0.73	2.8	0.025 J	0.0031 J	0.0024 J	0.020 J	
Nickel	MG/KG	30	130	310	22.6	21.6	24.3	19.5	14.6
Potassium	MG/KG	-	-	-	2,730	6,200	7,280	3,300	2,320
Selenium	MG/KG	3.9	4	1500			0.53 J		
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	87.1	104	112	110	88.1
Thallium	MG/KG	5 CP-51	-	-	1.3	1.3	1.5	0.74 J	0.76 J
Vanadium	MG/KG	39 CP-51	-	-	21.0	25.3	31.4	21.2	25.7
Zinc	MG/KG	109	2480	10000	33.9	38.5	45.0	45.4	25.6
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-10	MW-10	MW-11A	MW-11A	MW-11A
Sample ID					MW-10 (7-8.5)	MW-10 (21-22)	MW-11A (3-3.5)	MW-11A (8.5-9.5)	MW-11A (11.5-12.7)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.5	21.0-22.0	3.0-3.5	8.5-9.5	11.5-12.7
Date Sampled					10/31/13	10/31/13	11/18/13	11/19/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190					
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190					
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500			0.0071		
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.0064	0.0039 J	0.029	0.011	
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-					
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-10	MW-10	MW-11A	MW-11A	MW-11A
Sample ID					MW-10 (7-8.5)	MW-10 (21-22)	MW-11A (3-3.5)	MW-11A (8.5-9.5)	MW-11A (11.5-12.7)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.5	21.0-22.0	3.0-3.5	8.5-9.5	11.5-12.7
Date Sampled					10/31/13	10/31/13	11/18/13	11/19/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					
n-Propylbenzene	MG/KG	3.9	3.9	500					
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0064	0.0039	0.0361	0.011	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-					
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500			0.087 J		
Acenaphthylene	MG/KG	100	107	500			0.16 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-10	MW-10	MW-11A	MW-11A	MW-11A
Sample ID					MW-10 (7-8.5)	MW-10 (21-22)	MW-11A (3-3.5)	MW-11A (8.5-9.5)	MW-11A (11.5-12.7)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.5	21.0-22.0	3.0-3.5	8.5-9.5	11.5-12.7
Date Sampled					10/31/13	10/31/13	11/18/13	11/19/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500			0.30 J		
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6			1.4		
Benzo(a)pyrene	MG/KG	1	22	1			1.4		
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6			1.8		
Benzo(g,h,i)perylene	MG/KG	100	1000	500			1.1 J		
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56			0.71		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-			0.088 J		
Chrysene	MG/KG	1	1	56			1.4		
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56			0.17 J		
Dibenzofuran	MG/KG	7	210	350					
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500			2.4		
Fluorene	MG/KG	30	386	500			0.13 J		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6			1.0		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-10	MW-10	MW-11A	MW-11A	MW-11A
Sample ID					MW-10 (7-8.5)	MW-10 (21-22)	MW-11A (3-3.5)	MW-11A (8.5-9.5)	MW-11A (11.5-12.7)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.5	21.0-22.0	3.0-3.5	8.5-9.5	11.5-12.7
Date Sampled					10/31/13	10/31/13	11/18/13	11/19/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500					
Phenanthrene	MG/KG	100	1000	500			1.1		
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500			2.7		0.081 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	ND	15.857	ND	0.081
Total Semivolatile Organic Compounds	MG/KG	-	-	-	ND	ND	15.945	ND	0.081
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	11,900	4,790	16,600	12,100	6,220
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.2	0.94	5.6	2.0	0.67 J
Barium	MG/KG	350	820	400	90.4	45.2	244	58.2	67.4
Beryllium	MG/KG	7.2	47	590	0.38	0.13 J		0.24	
Cadmium	MG/KG	2.5	7.5	9.3			0.74		
Calcium	MG/KG	10000 CP-51	-	-	1,130	3,970	5,150	1,170	1,520
Chromium	MG/KG	30	NS	1500	33.6	12.6	36.1	19.7	15.2
Cobalt	MG/KG	20 CP-51	-	-	6.8	4.9	10.2	7.3	6.5
Copper	MG/KG	50	1720	270	17.5	11.7	60.5	17.2	18.9
Iron	MG/KG	2000 CP-51	-	-	17,000	8,940	23,900	21,200	11,100
Lead	MG/KG	63	450	1000	4.8	2.5	352	8.0	2.8

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

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[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] >= #10/29/2013#

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-10	MW-10	MW-11A	MW-11A	MW-11A
Sample ID					MW-10 (7-8.5)	MW-10 (21-22)	MW-11A (3-3.5)	MW-11A (8.5-9.5)	MW-11A (11.5-12.7)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.5	21.0-22.0	3.0-3.5	8.5-9.5	11.5-12.7
Date Sampled					10/31/13	10/31/13	11/18/13	11/19/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	4,240	3,440	5,090	2,610	2,690
Manganese	MG/KG	1600	2000	10000	223	120	343	293	263
Mercury	MG/KG	0.18	0.73	2.8			0.64		
Nickel	MG/KG	30	130	310	22.2	12.4	22.7	11.7	17.6
Potassium	MG/KG	-	-	-	4,030	2,280	3,700	1,460	3,360
Selenium	MG/KG	3.9	4	1500			1.2 J	0.50 J	
Silver	MG/KG	2	8.3	1500			0.13 J		
Sodium	MG/KG	-	-	-	75.0	117	432	85.4	77.5
Thallium	MG/KG	5 CP-51	-	-	1.2	0.22 J	1.1 J	0.88	0.78 J
Vanadium	MG/KG	39 CP-51	-	-	24.3	13.4	36.7	23.4	16.3
Zinc	MG/KG	109	2480	10000	34.7	15.2	330	30.1	22.6
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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Concentration Exceeds Criteria 1

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-12A	MW-12A	MW-12A	MW-12A	MW-12A
Sample ID					MW-12A (2.8-3.2)	SBMW12A (7-8)	SBMW12A (7-10)	SBMW12A (10-11)	SBMW12A (10-12)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.8-3.2	7.0-8.0	7.0-10.0	10.0-11.0	10.0-12.0
Date Sampled					11/20/13	01/24/14	01/24/14	01/24/14	01/24/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-			NA		NA
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-			NA		NA
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190			NA		NA
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500			NA		NA
1,2-Dichloroethane	MG/KG	0.02	0.02	30			NA		NA
1,2-Dichloropropane	MG/KG	700 CP-51	-	-			NA		NA
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190			NA		NA
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130			NA		NA
2-Butanone	MG/KG	0.12	0.12	500	0.0052 J		NA		NA
2-Hexanone	MG/KG	-	-	-			NA		NA
Acetone	MG/KG	0.05	0.05	500	0.026		NA		NA
Benzene	MG/KG	0.06	0.06	44			NA		NA
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-			NA		NA
Chlorobenzene	MG/KG	1.1	1.1	500			NA		NA
Cyclohexane	MG/KG	-	-	-			NA		NA
Ethylbenzene	MG/KG	1	1	390			NA		NA
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-			NA		NA
Methylcyclohexane	MG/KG	-	-	-			NA		NA
Methylene chloride	MG/KG	0.05	0.05	500	0.0049 J		NA		NA

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-12A	MW-12A	MW-12A	MW-12A	MW-12A
Sample ID					MW-12A (2.8-3.2)	SBMW12A (7-8)	SBMW12A (7-10)	SBMW12A (10-11)	SBMW12A (10-12)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.8-3.2	7.0-8.0	7.0-10.0	10.0-11.0	10.0-12.0
Date Sampled					11/20/13	01/24/14	01/24/14	01/24/14	01/24/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500			NA		NA
n-Propylbenzene	MG/KG	3.9	3.9	500			NA		NA
sec-Butylbenzene	MG/KG	11	11	500			NA		NA
Styrene	MG/KG	300 CP-51	-	-			NA		NA
Tetrachloroethene	MG/KG	1.3	1.3	150			NA		NA
Toluene	MG/KG	0.7	0.7	500			NA		NA
Trichloroethene	MG/KG	0.47	0.47	200			NA		NA
Xylene (total)	MG/KG	0.26	1.6	500			NA		NA
Total BTEX	MG/KG	-	-	-	ND	ND	NA	ND	NA
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0361	ND	NA	ND	NA
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		NA		NA	
2,4-Dimethylphenol	MG/KG	-	-	-		NA		NA	
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		NA		NA	
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500		NA		NA	
3,3'-Dichlorobenzidine	MG/KG	-	-	-		NA		NA	
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500		NA		NA	
Acenaphthene	MG/KG	20	98	500		NA		NA	
Acenaphthylene	MG/KG	100	107	500	0.11 J	NA		NA	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-12A	MW-12A	MW-12A	MW-12A	MW-12A
Sample ID					MW-12A (2.8-3.2)	SBMW12A (7-8)	SBMW12A (7-10)	SBMW12A (10-11)	SBMW12A (10-12)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.8-3.2	7.0-8.0	7.0-10.0	10.0-11.0	10.0-12.0
Date Sampled					11/20/13	01/24/14	01/24/14	01/24/14	01/24/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-		NA		NA	
Anthracene	MG/KG	100	1000	500	0.16 J	NA		NA	
Benzaldehyde	MG/KG	-	-	-		NA		NA	
Benzo(a)anthracene	MG/KG	1	1	5.6	0.83	NA		NA	
Benzo(a)pyrene	MG/KG	1	22	1	0.89	NA		NA	
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	1.2	NA		NA	
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.68 J	NA		NA	
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.46	NA		NA	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-		NA		NA	
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-		NA		NA	
Carbazole	MG/KG	-	-	-		NA		NA	
Chrysene	MG/KG	1	1	56	0.92	NA		NA	
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.14 J	NA		NA	
Dibenzofuran	MG/KG	7	210	350		NA		NA	
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-		NA		NA	
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-		NA	0.12 J	NA	
Fluoranthene	MG/KG	100	1000	500	1.3	NA		NA	
Fluorene	MG/KG	30	386	500		NA		NA	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.70	NA		NA	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-12A	MW-12A	MW-12A	MW-12A	MW-12A
Sample ID					MW-12A (2.8-3.2)	SBMW12A (7-8)	SBMW12A (7-10)	SBMW12A (10-11)	SBMW12A (10-12)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.8-3.2	7.0-8.0	7.0-10.0	10.0-11.0	10.0-12.0
Date Sampled					11/20/13	01/24/14	01/24/14	01/24/14	01/24/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500		NA		NA	
Phenanthrene	MG/KG	100	1000	500	0.53	NA		NA	
Phenol	MG/KG	0.33	0.33	500		NA		NA	
Pyrene	MG/KG	100	1000	500	1.5	NA		NA	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	9.42	NA	ND	NA	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	9.42	NA	0.12	NA	ND
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	11,500	NA	8,400	NA	14,500
Antimony	MG/KG	12 CP-51	-	-	0.46 J	NA		NA	0.39 J
Arsenic	MG/KG	13	16	16	5.2	NA	1.7	NA	1.2
Barium	MG/KG	350	820	400	119	NA	60.6	NA	155
Beryllium	MG/KG	7.2	47	590		NA		NA	
Cadmium	MG/KG	2.5	7.5	9.3	0.34	NA		NA	
Calcium	MG/KG	10000 CP-51	-	-	13,400	NA	1,420	NA	1,200
Chromium	MG/KG	30	NS	1500	23.8	NA	19.0	NA	31.1
Cobalt	MG/KG	20 CP-51	-	-	7.1	NA	5.4	NA	11.7
Copper	MG/KG	50	1720	270	66.0	NA	33.4	NA	50.2
Iron	MG/KG	2000 CP-51	-	-	17,000	NA	14,400	NA	25,700
Lead	MG/KG	63	450	1000	211	NA	2.9	NA	2.3

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					MW-12A	MW-12A	MW-12A	MW-12A	MW-12A
Sample ID					MW-12A (2.8-3.2)	SBMW12A (7-8)	SBMW12A (7-10)	SBMW12A (10-11)	SBMW12A (10-12)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					2.8-3.2	7.0-8.0	7.0-10.0	10.0-11.0	10.0-12.0
Date Sampled					11/20/13	01/24/14	01/24/14	01/24/14	01/24/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	3,270	NA	2,410	NA	6,180
Manganese	MG/KG	1600	2000	10000	349	NA	278	NA	377
Mercury	MG/KG	0.18	0.73	2.8	0.31	NA	0.0049 J	NA	
Nickel	MG/KG	30	130	310	17.9	NA	20.2	NA	24.8
Potassium	MG/KG	-	-	-	2,130	NA	2,350	NA	9,630
Selenium	MG/KG	3.9	4	1500		NA		NA	
Silver	MG/KG	2	8.3	1500		NA		NA	
Sodium	MG/KG	-	-	-	231	NA	157	NA	201
Thallium	MG/KG	5 CP-51	-	-	0.76 J	NA		NA	0.23 J
Vanadium	MG/KG	39 CP-51	-	-	25.4	NA	19.1	NA	39.7
Zinc	MG/KG	109	2480	10000	204	NA	26.4	NA	58.3
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27		NA		NA	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-16	SB-16	SB-16	SB-16
Sample ID					SB-1 (3.5-4)	110113-DUP-1	SB-16 (3.2-3.6)	SB-16 (4.5-5)	SB-16 (9-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.2-3.6	3.2-3.6	4.5-5.0	9.0-10.0
Date Sampled					11/14/13	11/01/13	11/01/13	11/01/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190					0.029
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190					0.031
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					0.0066 J
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500		0.015	0.017		0.048
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					0.0043 J
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					0.032
Methylcyclohexane	MG/KG	-	-	-					0.017
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-16	SB-16	SB-16	SB-16
Sample ID					SB-1 (3.5-4)	110113-DUP-1	SB-16 (3.2-3.6)	SB-16 (4.5-5)	SB-16 (9-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.2-3.6	3.2-3.6	4.5-5.0	9.0-10.0
Date Sampled					11/14/13	11/01/13	11/01/13	11/01/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					0.033
n-Propylbenzene	MG/KG	3.9	3.9	500					0.041
sec-Butylbenzene	MG/KG	11	11	500					0.019
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					0.0034 J
Xylene (total)	MG/KG	0.26	1.6	500					0.0036 J
Total BTEX	MG/KG	-	-	-	ND	ND	ND	ND	0.0079
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	0.015	0.017	ND	0.2679
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-				2.1	
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		0.088 J			6.3
Acenaphthylene	MG/KG	100	107	500	0.40		0.12 J	16	2.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-16	SB-16	SB-16	SB-16
Sample ID					SB-1 (3.5-4)	110113-DUP-1	SB-16 (3.2-3.6)	SB-16 (4.5-5)	SB-16 (9-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.2-3.6	3.2-3.6	4.5-5.0	9.0-10.0
Date Sampled					11/14/13	11/01/13	11/01/13	11/01/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.18 J	0.18 J	0.090 J	2.8	6.6 D
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.99	0.55	0.34 J	13	4.9
Benzo(a)pyrene	MG/KG	1	22	1	1.5	0.58	0.44	24	4.0
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	1.6	0.60	0.44	22	2.7
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.93	0.43	0.39	30 D	2.2
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.81	0.42	0.31 J	5.9	1.9
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-		0.11 J			
Chrysene	MG/KG	1	1	56	0.99	0.56	0.41	15	4.6
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.22 J	0.11 J	0.094 J	2.7	0.36 J
Dibenzofuran	MG/KG	7	210	350					
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	1.0	1.1	0.62	18	9.6 D
Fluorene	MG/KG	30	386	500		0.082 J		0.98 J	4.0
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.95	0.43	0.35 J	19	1.8

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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TABLE 4-5
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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-16	SB-16	SB-16	SB-16
Sample ID					SB-1 (3.5-4)	110113-DUP-1	SB-16 (3.2-3.6)	SB-16 (4.5-5)	SB-16 (9-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.2-3.6	3.2-3.6	4.5-5.0	9.0-10.0
Date Sampled					11/14/13	11/01/13	11/01/13	11/01/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500				0.47 J	
Phenanthrene	MG/KG	100	1000	500	0.27 J	0.75	0.30 J	5.7	22 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	1.2	1.1	0.81	31 D	12 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	11.04	6.98	4.714	208.65	85.86
Total Semivolatile Organic Compounds	MG/KG	-	-	-	11.04	7.09	4.714	208.65	85.86
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	14,200	7,670	12,000	5,700	39,500
Antimony	MG/KG	12 CP-51	-	-		0.34 J			
Arsenic	MG/KG	13	16	16	2.3	2.6	3.0	2.2	3.3
Barium	MG/KG	350	820	400	102	90.1	82.3	52.6	189
Beryllium	MG/KG	7.2	47	590	0.34	0.27	0.37	0.28	0.73
Cadmium	MG/KG	2.5	7.5	9.3					
Calcium	MG/KG	10000 CP-51	-	-	1,980	7,250 J	30,300 J	2,020	1,780
Chromium	MG/KG	30	NS	1500	32.5	14.3	21.3	10.7	46.0
Cobalt	MG/KG	20 CP-51	-	-	7.8	5.0 J	10.1 J	5.2	9.7
Copper	MG/KG	50	1720	270	24.2	21.6	29.1	19.0	79.0
Iron	MG/KG	2000 CP-51	-	-	19,400	13,300	16,700	8,840	23,900
Lead	MG/KG	63	450	1000	13.9	41.2	49.2	31.4	9.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-01	SB-16	SB-16	SB-16	SB-16
Sample ID					SB-1 (3.5-4)	110113-DUP-1	SB-16 (3.2-3.6)	SB-16 (4.5-5)	SB-16 (9-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					3.5-4.0	3.2-3.6	3.2-3.6	4.5-5.0	9.0-10.0
Date Sampled					11/14/13	11/01/13	11/01/13	11/01/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Metals									
Magnesium	MG/KG	-	-	-	4,550	3,900	3,590	1,430	7,180
Manganese	MG/KG	1600	2000	10000	302	249	315	176	585
Mercury	MG/KG	0.18	0.73	2.8	0.037	0.088	0.25	0.14	0.032 J
Nickel	MG/KG	30	130	310	24.1	10.7	15.3	13.5	38.9
Potassium	MG/KG	-	-	-	3,640	1,650	2,410	1,020	2,240
Selenium	MG/KG	3.9	4	1500	0.90 J	2.6		0.65 J	1.2 J
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	92.7	75.8	126	72.6	126
Thallium	MG/KG	5 CP-51	-	-	1.7	0.55 J	0.49 J	0.26 J	2.8
Vanadium	MG/KG	39 CP-51	-	-	30.6	19.1	25.5	13.7	56.6
Zinc	MG/KG	109	2480	10000	40.9	34.8	48.6	61.4	60.2
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-16	SB-16	SB-17	SB-17	SB-17
Sample ID					SB-16 (13-14)	SB-16 (18-19)	SB-17 (4-4.5)	SB-17 (10.5-11.5)	SB-17 (12.5-13.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-14.0	18.0-19.0	4.0-4.5	10.5-11.5	12.5-13.5
Date Sampled					11/07/13	11/07/13	11/20/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-	0.0025 J				
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-	0.0020 J				
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		3.5 D			0.019
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500		0.37 D			
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-		0.018 J			
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		1.1 D			
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500				0.0075	
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.012	0.020 J		0.027	0.0078
Benzene	MG/KG	0.06	0.06	44		0.084 J	0.0052 J		
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390		1.2 D			
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.17 DJ			0.0042 J
Methylcyclohexane	MG/KG	-	-	-		0.23 DJ		0.0034 J	
Methylene chloride	MG/KG	0.05	0.05	500			0.010	0.0031 J	0.0039 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-16	SB-16	SB-17	SB-17	SB-17
Sample ID					SB-16 (13-14)	SB-16 (18-19)	SB-17 (4-4.5)	SB-17 (10.5-11.5)	SB-17 (12.5-13.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-14.0	18.0-19.0	4.0-4.5	10.5-11.5	12.5-13.5
Date Sampled					11/07/13	11/07/13	11/20/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		0.33 J		0.0037 J	0.021
n-Propylbenzene	MG/KG	3.9	3.9	500		0.44 D			0.0046 J
sec-Butylbenzene	MG/KG	11	11	500		0.057 J			0.0037 J
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500		0.14 J	0.0026 J		
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		5.5 D			
Total BTEX	MG/KG	-	-	-	ND	6.924	0.0078	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0165	13.159	0.0178	0.0447	0.0642
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		4.4	0.38 J		0.80
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.14 J	6.7 D	2.2		0.21 J
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		16 D	1.7 J		3.3
Acenaphthylene	MG/KG	100	107	500	0.12 J	2.9	12	0.091 J	1.1

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-16	SB-16	SB-17	SB-17	SB-17
Sample ID					SB-16 (13-14)	SB-16 (18-19)	SB-17 (4-4.5)	SB-17 (10.5-11.5)	SB-17 (12.5-13.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-14.0	18.0-19.0	4.0-4.5	10.5-11.5	12.5-13.5
Date Sampled					11/07/13	11/07/13	11/20/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.17 J	3.6	16		2.9
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.13 J	2.5	65 D	0.66	2.4
Benzo(a)pyrene	MG/KG	1	22	1	0.096 J	2.4	77 D	0.56	1.7
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.099 J	1.4	110 D	0.61	1.5
Benzo(g,h,i)perylene	MG/KG	100	1000	500		1.5	51 D	0.37 J	0.73 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.056 J	1.5	39 D	0.18 J	0.56
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-		0.21 J	4.2		
Chrysene	MG/KG	1	1	56	0.12 J	2.7	60 D	0.62	2.4
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56		0.21 J	13		0.20 J
Dibenzofuran	MG/KG	7	210	350	0.11 J	0.41	4.5		
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	0.28 J	4.8	120 D	0.70	4.6
Fluorene	MG/KG	30	386	500	0.19 J	4.4	6.3		2.5
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		1.1	64 D	0.34 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-16	SB-16	SB-17	SB-17	SB-17
Sample ID					SB-16 (13-14)	SB-16 (18-19)	SB-17 (4-4.5)	SB-17 (10.5-11.5)	SB-17 (12.5-13.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-14.0	18.0-19.0	4.0-4.5	10.5-11.5	12.5-13.5
Date Sampled					11/07/13	11/07/13	11/20/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	0.26 J	22 D	3.5		
Phenanthrene	MG/KG	100	1000	500	0.54	14 D	51 D	0.10 J	11 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	0.24 J	6.9 D	100 D	1.1	6.9 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	2.441	94.61	791.7	5.331	42
Total Semivolatile Organic Compounds	MG/KG	-	-	-	2.551	99.63	800.78	5.331	42.8
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	9,220	6,710	8,120	6,350	9,480
Antimony	MG/KG	12 CP-51	-	-			0.44 J		
Arsenic	MG/KG	13	16	16	1.0 J	1.1	4.9	2.2	0.87
Barium	MG/KG	350	820	400	90.0	68.7	79.7	45.7	94.8
Beryllium	MG/KG	7.2	47	590					
Cadmium	MG/KG	2.5	7.5	9.3			0.11 J		
Calcium	MG/KG	10000 CP-51	-	-	1,480	1,030	64,100	858	1,550
Chromium	MG/KG	30	NS	1500	24.5	17.9	16.7	15.5	24.1
Cobalt	MG/KG	20 CP-51	-	-	6.4 J	6.6	5.0	4.0	7.2 J
Copper	MG/KG	50	1720	270	16.3	19.8	78.7	15.9	18.7
Iron	MG/KG	2000 CP-51	-	-	14,100	11,300	12,400	11,400	14,900 J
Lead	MG/KG	63	450	1000	3.6	2.9	264	4.3	4.1

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-16	SB-16	SB-17	SB-17	SB-17
Sample ID					SB-16 (13-14)	SB-16 (18-19)	SB-17 (4-4.5)	SB-17 (10.5-11.5)	SB-17 (12.5-13.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					13.0-14.0	18.0-19.0	4.0-4.5	10.5-11.5	12.5-13.5
Date Sampled					11/07/13	11/07/13	11/20/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	3,620	2,980	2,380	2,030	3,880
Manganese	MG/KG	1600	2000	10000	277	150	156	83.7	190
Mercury	MG/KG	0.18	0.73	2.8			0.99	0.011 J	
Nickel	MG/KG	30	130	310	18.6	16.4	59.1	9.9	21.0 J
Potassium	MG/KG	-	-	-	3,950	3,080	1,300	1,420	4,260
Selenium	MG/KG	3.9	4	1500					0.86 J
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	71.6	77.0	256	28.0 J	51.0
Thallium	MG/KG	5 CP-51	-	-	1.4	0.98	1.2	0.38 J	1.0
Vanadium	MG/KG	39 CP-51	-	-	23.4	16.2	22.9	26.7	22.7
Zinc	MG/KG	109	2480	10000	29.3	23.9	99.4	20.6	31.0 J
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27			46.6	3.8	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-17	SB-18	SB-18	SB-18	SB-18
Sample ID					SB-17 (15-16)	SB-18 (3-3.5)	SB-18 (8.5-10)	SB-18 (12.5-13.5)	SB-18 (15.8-16.8)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-16.0	3.0-3.5	8.5-10.0	12.5-13.5	15.8-16.8
Date Sampled					11/22/13	11/20/13	11/22/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		0.12	11	9.4	3.4
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190			3.9	3.0	1.7
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500		0.0073			
Benzene	MG/KG	0.06	0.06	44		0.068	1.1 J	1.1 J	
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-		0.012			
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-			4.4	6.2	
Ethylbenzene	MG/KG	1	1	390		0.015	22	15	1.6
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-			1.4 J	1.6	0.83
Methylcyclohexane	MG/KG	-	-	-			17	21	4.4
Methylene chloride	MG/KG	0.05	0.05	500		0.0028 J			

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-17	SB-18	SB-18	SB-18	SB-18
Sample ID					SB-17 (15-16)	SB-18 (3-3.5)	SB-18 (8.5-10)	SB-18 (12.5-13.5)	SB-18 (15.8-16.8)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-16.0	3.0-3.5	8.5-10.0	12.5-13.5	15.8-16.8
Date Sampled					11/22/13	11/20/13	11/22/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500			0.96 J	1.1 J	
n-Propylbenzene	MG/KG	3.9	3.9	500			1.4 J	1.6	0.77
sec-Butylbenzene	MG/KG	11	11	500					0.23 J
Styrene	MG/KG	300 CP-51	-	-		0.087			
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500		0.19			
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		0.36	11.9	8.2	1.41
Total BTEX	MG/KG	-	-	-	ND	0.633	35	24.3	3.01
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	0.8621	75.06	68.2	14.34
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		7.6	5.7	6.4 DJ	150 D
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		51 D	23	27 D	180 D
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		13	22	37 D	540 D
Acenaphthylene	MG/KG	100	107	500		50 D	6.4	3.5	58 DJ

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-17	SB-18	SB-18	SB-18	SB-18
Sample ID					SB-17 (15-16)	SB-18 (3-3.5)	SB-18 (8.5-10)	SB-18 (12.5-13.5)	SB-18 (15.8-16.8)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-16.0	3.0-3.5	8.5-10.0	12.5-13.5	15.8-16.8
Date Sampled					11/22/13	11/20/13	11/22/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500		70 D	20	15 D	200 D
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6		90 D	28 D	11 D	140 D
Benzo(a)pyrene	MG/KG	1	22	1		80 D	21	8.9 D	150 D
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		110 D	22	8.0 D	130 D
Benzo(g,h,i)perylene	MG/KG	100	1000	500		37 D	9.3	4.5	77 D
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		40 D	11	3.9	40 DJ
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-		23	4.9	2.6	19
Chrysene	MG/KG	1	1	56		80 D	20	8.9 D	130 D
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56		12	3.2	1.2	20
Dibenzofuran	MG/KG	7	210	350		41 D	12	9.5 D	92 D
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-	0.088 J			0.12 J	
Fluoranthene	MG/KG	100	1000	500		220 D	62 D	29 D	460 D
Fluorene	MG/KG	30	386	500		57 D	18	18 D	350 D
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		44 D	11	4.4	62 DJ

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-17	SB-18	SB-18	SB-18	SB-18
Sample ID					SB-17 (15-16)	SB-18 (3-3.5)	SB-18 (8.5-10)	SB-18 (12.5-13.5)	SB-18 (15.8-16.8)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-16.0	3.0-3.5	8.5-10.0	12.5-13.5	15.8-16.8
Date Sampled					11/22/13	11/20/13	11/22/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500		140 D	130 D	93 D	380 D
Phenanthrene	MG/KG	100	1000	500		200 D	63 D	55 D	940 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500		170 D	53 D	30 D	600 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	1,464	522.9	358.3	4,457
Total Semivolatile Organic Compounds	MG/KG	-	-	-	0.088	1,535.6	545.5	376.92	4,718
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	8,470	13,400	17,200	13,700	8,150
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.0	2.8	3.8	2.6	2.6
Barium	MG/KG	350	820	400	85.5	106	88.5	62.2	59.9
Beryllium	MG/KG	7.2	47	590			0.52		
Cadmium	MG/KG	2.5	7.5	9.3		0.16 J			
Calcium	MG/KG	10000 CP-51	-	-	1,550	2,580	6,880	1,220	947
Chromium	MG/KG	30	NS	1500	23.0	25.4	24.0	23.4	16.7
Cobalt	MG/KG	20 CP-51	-	-	6.7	9.3	7.2	7.7	11.3
Copper	MG/KG	50	1720	270	19.5	28.1	12.4	19.1	21.1
Iron	MG/KG	2000 CP-51	-	-	13,400	19,200	16,400	19,600	20,200
Lead	MG/KG	63	450	1000	3.6	26.2	26.2	6.3	4.8

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-17	SB-18	SB-18	SB-18	SB-18
Sample ID					SB-17 (15-16)	SB-18 (3-3.5)	SB-18 (8.5-10)	SB-18 (12.5-13.5)	SB-18 (15.8-16.8)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					15.0-16.0	3.0-3.5	8.5-10.0	12.5-13.5	15.8-16.8
Date Sampled					11/22/13	11/20/13	11/22/13	11/22/13	11/22/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	3,730	3,750	3,230	3,430	3,240
Manganese	MG/KG	1600	2000	10000	292	498	244	213	161
Mercury	MG/KG	0.18	0.73	2.8		0.12	0.13	0.011 J	
Nickel	MG/KG	30	130	310	19.0	21.6	14.6	15.2	19.0
Potassium	MG/KG	-	-	-	4,310	2,860	952	2,040	2,170
Selenium	MG/KG	3.9	4	1500	0.48 J	0.92 J	1.3 J	0.65 J	
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	57.1	132	116	63.0	64.0
Thallium	MG/KG	5 CP-51	-	-	1.1	1.3	0.76 J	0.99	0.58 J
Vanadium	MG/KG	39 CP-51	-	-	21.2	27.1	29.5	29.9	17.3
Zinc	MG/KG	109	2480	10000	29.2	204	41.5	29.1	27.0
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27	2.2	2.1			

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-18	SB-19	SB-19	SB-19	SB-20
Sample ID					SB-18 (23-25)	SB-19 (9-10)	SB-19 (10.5-11.5)	SB-19 (21.6-22.7)	SB-20 (3-3.3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					23.0-25.0	9.0-10.0	10.5-11.5	21.6-22.7	3.0-3.3
Date Sampled					11/22/13	11/07/13	11/07/13	11/07/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190	0.0036 J		0.87 D	0.0047 J	
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-			0.036 J		
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		0.17	0.63 D	0.0029 J	
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					0.0026 J
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500			0.0084 J		0.026
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390		0.049	0.16 DJ		
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.027	0.15 J		
Methylcyclohexane	MG/KG	-	-	-		0.12	1.6 D		
Methylene chloride	MG/KG	0.05	0.05	500					

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TABLE 4-5
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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-18	SB-19	SB-19	SB-19	SB-20
Sample ID					SB-18 (23-25)	SB-19 (9-10)	SB-19 (10.5-11.5)	SB-19 (21.6-22.7)	SB-20 (3-3.3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					23.0-25.0	9.0-10.0	10.5-11.5	21.6-22.7	3.0-3.3
Date Sampled					11/22/13	11/07/13	11/07/13	11/07/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		0.013 J			
n-Propylbenzene	MG/KG	3.9	3.9	500		0.051	0.19 DJ		
sec-Butylbenzene	MG/KG	11	11	500			0.031 J		
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500			0.011 J		
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		0.159	0.75 D	0.0037 J	
Total BTEX	MG/KG	-	-	-	ND	0.208	0.921	0.0037	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0036	0.589	4.4364	0.0113	0.0286
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		0.84	5.1		
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		0.92	7.8 D		
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	0.080 J	0.51	1.5		
Acenaphthylene	MG/KG	100	107	500		1.8	13 D		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-18	SB-19	SB-19	SB-19	SB-20
Sample ID					SB-18 (23-25)	SB-19 (9-10)	SB-19 (10.5-11.5)	SB-19 (21.6-22.7)	SB-20 (3-3.3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					23.0-25.0	9.0-10.0	10.5-11.5	21.6-22.7	3.0-3.3
Date Sampled					11/22/13	11/07/13	11/07/13	11/07/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.086 J	0.71	2.7		0.076 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.075 J	0.40	1.6		0.086 J
Benzo(a)pyrene	MG/KG	1	22	1		0.44	2.0		0.090 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		0.37	1.4		0.11 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500		0.35 J	1.6		
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		0.18 J	0.85		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-	0.076 J				
Carbazole	MG/KG	-	-	-					
Chrysene	MG/KG	1	1	56		0.43	1.8		0.084 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56			0.13 J		
Dibenzofuran	MG/KG	7	210	350					
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-	0.090 J				
Fluoranthene	MG/KG	100	1000	500	0.19 J	1.4	5.2		0.18 J
Fluorene	MG/KG	30	386	500		1.0	4.6		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		0.26 J	1.1		

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-18	SB-19	SB-19	SB-19	SB-20
Sample ID					SB-18 (23-25)	SB-19 (9-10)	SB-19 (10.5-11.5)	SB-19 (21.6-22.7)	SB-20 (3-3.3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					23.0-25.0	9.0-10.0	10.5-11.5	21.6-22.7	3.0-3.3
Date Sampled					11/22/13	11/07/13	11/07/13	11/07/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500		1.0	22 D		
Phenanthrene	MG/KG	100	1000	500	0.31 J	3.2	14 D		0.19 J
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	0.21 J	2.0	8.0 D		0.17 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	0.951	14.97	89.28	ND	0.986
Total Semivolatile Organic Compounds	MG/KG	-	-	-	1.117	15.81	94.38	ND	0.986
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	6,130	12,600	11,100	42,900	8,100
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	0.95 J	1.2	1.4	1.6	2.1
Barium	MG/KG	350	820	400	54.9	136	100	139	39.3
Beryllium	MG/KG	7.2	47	590		0.26		1.0	0.27
Cadmium	MG/KG	2.5	7.5	9.3				0.12 J	
Calcium	MG/KG	10000 CP-51	-	-	1,130	2,070	1,980	25,700	17,700
Chromium	MG/KG	30	NS	1500	17.4	31.9	27.4	403	23.3
Cobalt	MG/KG	20 CP-51	-	-	5.4	9.9	8.1	31.1	4.0
Copper	MG/KG	50	1720	270	19.5	28.5	26.2		8.1
Iron	MG/KG	2000 CP-51	-	-	12,100	22,600	17,200	38,200	10,800
Lead	MG/KG	63	450	1000	3.0	4.6	4.0	3.0	9.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-18	SB-19	SB-19	SB-19	SB-20
Sample ID					SB-18 (23-25)	SB-19 (9-10)	SB-19 (10.5-11.5)	SB-19 (21.6-22.7)	SB-20 (3-3.3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					23.0-25.0	9.0-10.0	10.5-11.5	21.6-22.7	3.0-3.3
Date Sampled					11/22/13	11/07/13	11/07/13	11/07/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	2,480	5,360	4,920	67,000	2,270
Manganese	MG/KG	1600	2000	10000	167	397	413	1,380	153
Mercury	MG/KG	0.18	0.73	2.8		0.0049 J			0.018 J
Nickel	MG/KG	30	130	310	17.3	27.9	22.1	408	8.4
Potassium	MG/KG	-	-	-	2,380	5,710	5,300	17,700	706
Selenium	MG/KG	3.9	4	1500		0.68 J	0.60 J		
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	47.0 J	469	385	635	417
Thallium	MG/KG	5 CP-51	-	-	0.49 J	2.0	2.2	5.6	
Vanadium	MG/KG	39 CP-51	-	-	15.5	33.0	27.2	37.2	17.4
Zinc	MG/KG	109	2480	10000	19.1	41.4	35.6	74.3	20.4
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-20	SB-20	SB-21	SB-21	SB-21
Sample ID					SB-20 (7-8)	SB-20 (14.5-15.5)	SB-21 (2.5-3.5)	SB-21 (9-10)	SB-21 (20.7-21.1)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.0	14.5-15.5	2.5-3.5	9.0-10.0	20.7-21.1
Date Sampled					10/31/13	10/31/13	11/04/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190				3.0	0.16
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190				1.4	0.0077 J
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500	0.0034 J		0.017		
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.023	0.0044 J	0.079	0.017 J	0.012
Benzene	MG/KG	0.06	0.06	44			0.0035 J	0.11	
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390				1.1	0.0070 J
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-				0.15	0.024
Methylcyclohexane	MG/KG	-	-	-				0.081	0.0037 J
Methylene chloride	MG/KG	0.05	0.05	500	0.0021 J				

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias. NA - Not analyzed.

Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-20	SB-20	SB-21	SB-21	SB-21
Sample ID					SB-20 (7-8)	SB-20 (14.5-15.5)	SB-21 (2.5-3.5)	SB-21 (9-10)	SB-21 (20.7-21.1)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.0	14.5-15.5	2.5-3.5	9.0-10.0	20.7-21.1
Date Sampled					10/31/13	10/31/13	11/04/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500				0.063	0.032
n-Propylbenzene	MG/KG	3.9	3.9	500				0.10	0.018
sec-Butylbenzene	MG/KG	11	11	500				0.0087 J	0.0059 J
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500				0.46	
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500				9.3	0.0031 J
Total BTEX	MG/KG	-	-	-	ND	ND	0.0035	10.97	0.0101
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0285	0.0044	0.0995	15.7897	0.2734
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-			0.37 J	10	2.3
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-			1.3 J	62 D	
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500			9.0	18	22 D
Acenaphthylene	MG/KG	100	107	500			1.7	8.5	2.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-20	SB-20	SB-21	SB-21	SB-21
Sample ID					SB-20 (7-8)	SB-20 (14.5-15.5)	SB-21 (2.5-3.5)	SB-21 (9-10)	SB-21 (20.7-21.1)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.0	14.5-15.5	2.5-3.5	9.0-10.0	20.7-21.1
Date Sampled					10/31/13	10/31/13	11/04/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500			14	34 D	13 D
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6			22	29 D	7.7 D
Benzo(a)pyrene	MG/KG	1	22	1			18	21	4.6
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6			20	21	
Benzo(g,h,i)perylene	MG/KG	100	1000	500			11	9.6	2.1
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56			11	13	2.1
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					0.73
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					0.13 J
Carbazole	MG/KG	-	-	-			5.5	14	0.22 J
Chrysene	MG/KG	1	1	56			18	20	5.8
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56			3.7	3.6	0.45
Dibenzofuran	MG/KG	7	210	350			5.9	32 D	0.42
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500			50 D	75 D	14 D
Fluorene	MG/KG	30	386	500			9.3	39 D	10 D
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6			12	11	1.8

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-20	SB-20	SB-21	SB-21	SB-21
Sample ID					SB-20 (7-8)	SB-20 (14.5-15.5)	SB-21 (2.5-3.5)	SB-21 (9-10)	SB-21 (20.7-21.1)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.0	14.5-15.5	2.5-3.5	9.0-10.0	20.7-21.1
Date Sampled					10/31/13	10/31/13	11/04/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500			3.3	220 D	0.21 J
Phenanthrene	MG/KG	100	1000	500			44 D	120 D	40 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500			40 D	58 D	20 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	ND	288.3	762.7	146.46
Total Semivolatile Organic Compounds	MG/KG	-	-	-	ND	ND	300.07	818.7	150.26
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	14,400	7,050	10,400	9,390	17,800
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	3.7	1.0 J	2.8	1.2	1.4
Barium	MG/KG	350	820	400	117	64.2	75.8 J	93.3	162
Beryllium	MG/KG	7.2	47	590	0.47	0.23 J	0.36		0.43
Cadmium	MG/KG	2.5	7.5	9.3					
Calcium	MG/KG	10000 CP-51	-	-	2,530	1,540	28,000 J	1,400	2,550
Chromium	MG/KG	30	NS	1500	59.1	18.3	20.8	22.3	140
Cobalt	MG/KG	20 CP-51	-	-	10.1	7.3	6.0 J	6.9	11.6
Copper	MG/KG	50	1720	270	27.9	18.7	28.0	17.4	16.5
Iron	MG/KG	2000 CP-51	-	-	21,300	13,100	13,200 J	13,600	23,800
Lead	MG/KG	63	450	1000	8.2	3.3	67.4 J	3.6	5.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

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[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] >= #10/29/2013#

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-20	SB-20	SB-21	SB-21	SB-21
Sample ID					SB-20 (7-8)	SB-20 (14.5-15.5)	SB-21 (2.5-3.5)	SB-21 (9-10)	SB-21 (20.7-21.1)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					7.0-8.0	14.5-15.5	2.5-3.5	9.0-10.0	20.7-21.1
Date Sampled					10/31/13	10/31/13	11/04/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	5,860	2,590	12,300 J	3,560	11,500
Manganese	MG/KG	1600	2000	10000	260	196	287 J	236	373
Mercury	MG/KG	0.18	0.73	2.8	0.0045 J		0.21		
Nickel	MG/KG	30	130	310	23.8	20.2	15.8	19.3	89.1
Potassium	MG/KG	-	-	-	4,570	2,710	2,100	4,090	11,300
Selenium	MG/KG	3.9	4	1500				0.61 J	0.71 J
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	713	120	550	197	275
Thallium	MG/KG	5 CP-51	-	-	1.5	0.85 J	0.86	1.2	2.6
Vanadium	MG/KG	39 CP-51	-	-	38.7	19.6	23.6 J	22.6	32.0
Zinc	MG/KG	109	2480	10000	48.7	22.1	61.9 J	28.9	55.7
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-21	SB-21	SB-22	SB-22	SB-22
Sample ID					110713-DUP-1	SB-21 (21.5-22.5)	SB-22 (2-2.3)	SB-22 (10-11.5)	SB-22 (18.5-19.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					21.5-22.5	21.5-22.5	2.0-2.3	10.0-11.5	18.5-19.5
Date Sampled					11/07/13	11/07/13	10/31/13	10/31/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		0.0053 J			
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190					
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500			0.0058 J		
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500			0.041	0.0080	
Benzene	MG/KG	0.06	0.06	44			0.0041 J		
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-	-					
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-21	SB-21	SB-22	SB-22	SB-22
Sample ID					110713-DUP-1	SB-21 (21.5-22.5)	SB-22 (2-2.3)	SB-22 (10-11.5)	SB-22 (18.5-19.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					21.5-22.5	21.5-22.5	2.0-2.3	10.0-11.5	18.5-19.5
Date Sampled					11/07/13	11/07/13	10/31/13	10/31/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					
n-Propylbenzene	MG/KG	3.9	3.9	500					
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500					
Total BTEX	MG/KG	-	-	-	ND	ND	0.0041	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	ND	0.0053	0.0509	0.008	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-			0.38 J		
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	0.52	0.34 J	3.8		
Acenaphthylene	MG/KG	100	107	500			3.3		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-21	SB-21	SB-22	SB-22	SB-22
Sample ID					110713-DUP-1	SB-21 (21.5-22.5)	SB-22 (2-2.3)	SB-22 (10-11.5)	SB-22 (18.5-19.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					21.5-22.5	21.5-22.5	2.0-2.3	10.0-11.5	18.5-19.5
Date Sampled					11/07/13	11/07/13	10/31/13	10/31/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.55	0.34 J	9.2		
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	0.40	0.22 J	18		
Benzo(a)pyrene	MG/KG	1	22	1	0.29 J	0.17 J	18		
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.21 J	0.13 J	15		
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.14 J	0.085 J	9.7		
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.15 J		14		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-		1.4			
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-		0.073 J			
Carbazole	MG/KG	-	-	-			1.3 J		
Chrysene	MG/KG	1	1	56	0.37 J	0.25 J	17		
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56			2.2		
Dibenzofuran	MG/KG	7	210	350			2.7		
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	0.71	0.41	35 D		
Fluorene	MG/KG	30	386	500	0.39 J	0.23 J	4.9		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.12 J		11		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-21	SB-21	SB-22	SB-22	SB-22
Sample ID					110713-DUP-1	SB-21 (21.5-22.5)	SB-22 (2-2.3)	SB-22 (10-11.5)	SB-22 (18.5-19.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					21.5-22.5	21.5-22.5	2.0-2.3	10.0-11.5	18.5-19.5
Date Sampled					11/07/13	11/07/13	10/31/13	10/31/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500			0.57 J		
Phenanthrene	MG/KG	100	1000	500	1.8	1.2	20		
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	0.97	0.61	29 D		
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	6.62	3.985	211.05	ND	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	6.62	5.458	215.05	ND	ND
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	23,900	30,200	10,100	11,600	8,820
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.5	2.2	2.7	1.2	1.1
Barium	MG/KG	350	820	400	106	118	68.4	114	111
Beryllium	MG/KG	7.2	47	590	0.69	0.86	0.33	0.26	0.21 J
Cadmium	MG/KG	2.5	7.5	9.3		0.024 J			
Calcium	MG/KG	10000 CP-51	-	-	4,050	5,060	5,660	1,210	1,900
Chromium	MG/KG	30	NS	1500	218	203	20.5	28.1	40.7
Cobalt	MG/KG	20 CP-51	-	-	18.9	22.1	6.4	8.3	7.2
Copper	MG/KG	50	1720	270	4.7	2.8	21.3	20.8	14.4
Iron	MG/KG	2000 CP-51	-	-	22,700	33,200	14,700	17,000	16,100
Lead	MG/KG	63	450	1000	4.4	4.6	53.5	4.7	3.4

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-21	SB-21	SB-22	SB-22	SB-22
Sample ID					110713-DUP-1	SB-21 (21.5-22.5)	SB-22 (2-2.3)	SB-22 (10-11.5)	SB-22 (18.5-19.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					21.5-22.5	21.5-22.5	2.0-2.3	10.0-11.5	18.5-19.5
Date Sampled					11/07/13	11/07/13	10/31/13	10/31/13	10/31/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**	Field Duplicate (1-1)				
Metals									
Magnesium	MG/KG	-	-	-	24,600 J	35,600 J	3,500	4,320	5,580
Manganese	MG/KG	1600	2000	10000	461 J	842 J	265	220	442
Mercury	MG/KG	0.18	0.73	2.8			0.19		
Nickel	MG/KG	30	130	310	277	300	19.9	24.1	35.8
Potassium	MG/KG	-	-	-	9,080	10,200	1,680	4,910	4,720
Selenium	MG/KG	3.9	4	1500	1.4 J	1.2 J			
Silver	MG/KG	2	8.3	1500			0.075 J		
Sodium	MG/KG	-	-	-	474	608	455	171	136
Thallium	MG/KG	5 CP-51	-	-	2.8	3.6	0.73 J	1.3	1.2
Vanadium	MG/KG	39 CP-51	-	-	34.6	44.7	22.6	27.2	22.9
Zinc	MG/KG	109	2480	10000	87.5	107	56.5	35.8	29.6
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-23	SB-23	SB-24	SB-24	SB-25
Sample ID					SB-23 (4.5-5)	SB-23 (13.5-14)	SB-24 (9-10)	SB-24 (14-15)	SB-25 (7.2-8.2)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					4.5-5.0	13.5-14.0	9.0-10.0	14.0-15.0	7.2-8.2
Date Sampled					11/04/13	11/06/13	11/07/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		64	0.0016 J		4.0
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30		0.34			
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		18			0.39
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130		1.3			
2-Butanone	MG/KG	0.12	0.12	500					0.0047 J
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.031 J	0.091	0.017	0.0037 J	0.012
Benzene	MG/KG	0.06	0.06	44		26			0.37
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500		0.59			
Cyclohexane	MG/KG	-	-	-		0.068 J			0.0046 J
Ethylbenzene	MG/KG	1	1	390		74			0.99
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		1.9			0.027
Methylcyclohexane	MG/KG	-	-	-		0.22			0.013
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-23	SB-23	SB-24	SB-24	SB-25
Sample ID					SB-23 (4.5-5)	SB-23 (13.5-14)	SB-24 (9-10)	SB-24 (14-15)	SB-25 (7.2-8.2)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					4.5-5.0	13.5-14.0	9.0-10.0	14.0-15.0	7.2-8.2
Date Sampled					11/04/13	11/06/13	11/07/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		1.6			0.032
n-Propylbenzene	MG/KG	3.9	3.9	500		1.1			0.043
sec-Butylbenzene	MG/KG	11	11	500		0.19			
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500		1.0			3.6
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		66			9.6
Total BTEX	MG/KG	-	-	-	ND	167	ND	ND	14.56
Total Volatile Organic Compounds	MG/KG	-	-	-	0.031	256.399	0.0186	0.0037	19.0863
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		22			45 DJ
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.39 J	230 D			340 D
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	9.4	170 D	0.084 J		41 DJ
Acenaphthylene	MG/KG	100	107	500	2.0	30			150 D

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-23	SB-23	SB-24	SB-24	SB-25
Sample ID					SB-23 (4.5-5)	SB-23 (13.5-14)	SB-24 (9-10)	SB-24 (14-15)	SB-25 (7.2-8.2)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					4.5-5.0	13.5-14.0	9.0-10.0	14.0-15.0	7.2-8.2
Date Sampled					11/04/13	11/06/13	11/07/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	15	84 D	0.25 J		180 D
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	18	66 D			120 D
Benzo(a)pyrene	MG/KG	1	22	1	15	9.7 DJ			21 DJ
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	17	35			89 D
Benzo(g,h,i)perylene	MG/KG	100	1000	500	8.3	22			17
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	6.8	20			23
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-		87 D	0.35		
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-			0.075 J		
Carbazole	MG/KG	-	-	-	5.5		0.97		77 DJ
Chrysene	MG/KG	1	1	56	14	36			120 D
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	2.7				15
Dibenzofuran	MG/KG	7	210	350	6.6		0.15 J		150 D
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	45 D	100 D	0.18 J		280 D
Fluorene	MG/KG	30	386	500	9.7	78 D	0.36		230 D
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	9.0	20			30 DJ

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-23	SB-23	SB-24	SB-24	SB-25
Sample ID					SB-23 (4.5-5)	SB-23 (13.5-14)	SB-24 (9-10)	SB-24 (14-15)	SB-25 (7.2-8.2)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					4.5-5.0	13.5-14.0	9.0-10.0	14.0-15.0	7.2-8.2
Date Sampled					11/04/13	11/06/13	11/07/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	0.94 J	380 D			840 D
Phenanthrene	MG/KG	100	1000	500	47 D	260 D	0.27 J		510 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	36 D	150 D	0.17 J		220 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	256.23	1,690.7	1.314	ND	3,226
Total Semivolatile Organic Compounds	MG/KG	-	-	-	268.33	1,799.7	2.859	ND	3,498
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	7,960	5,180	8,030	6,170	13,500
Antimony	MG/KG	12 CP-51	-	-		2.3			
Arsenic	MG/KG	13	16	16	4.5	13.4	2.0	1.1	1.9
Barium	MG/KG	350	820	400	62.6	137	47.0	60.9	121
Beryllium	MG/KG	7.2	47	590	0.32		0.20		0.24
Cadmium	MG/KG	2.5	7.5	9.3		24.6			
Calcium	MG/KG	10000 CP-51	-	-	56,900	9,560	912	1,330	1,570
Chromium	MG/KG	30	NS	1500	15.6	269	15.2	29.6	23.9
Cobalt	MG/KG	20 CP-51	-	-	6.1	5.6	6.1	6.3	9.8
Copper	MG/KG	50	1720	270	24.6	222	22.0	22.6	36.5
Iron	MG/KG	2000 CP-51	-	-	13,000	41,200	12,400	12,300	18,100
Lead	MG/KG	63	450	1000	67.9	1,240	5.3	3.3	4.3

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-23	SB-23	SB-24	SB-24	SB-25
Sample ID					SB-23 (4.5-5)	SB-23 (13.5-14)	SB-24 (9-10)	SB-24 (14-15)	SB-25 (7.2-8.2)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					4.5-5.0	13.5-14.0	9.0-10.0	14.0-15.0	7.2-8.2
Date Sampled					11/04/13	11/06/13	11/07/13	11/07/13	11/07/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	8,640	2,510	3,350	3,260	4,650
Manganese	MG/KG	1600	2000	10000	267	260	163	146	337
Mercury	MG/KG	0.18	0.73	2.8	0.15	1.9		0.0029 J	0.0056 J
Nickel	MG/KG	30	130	310	11.9	74.1	16.7	16.6	34.7
Potassium	MG/KG	-	-	-	1,830	1,040	1,970	2,860	4,570
Selenium	MG/KG	3.9	4	1500		2.5	0.60 J		0.81 J
Silver	MG/KG	2	8.3	1500		0.85 J			
Sodium	MG/KG	-	-	-	561	1,770	115	89.5	321
Thallium	MG/KG	5 CP-51	-	-			0.76 J	1.3	1.6
Vanadium	MG/KG	39 CP-51	-	-	22.7	18.5	17.0	16.3	30.2
Zinc	MG/KG	109	2480	10000	44.5	7,040	24.9	24.3	35.9
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-25	SB-25	SB-26	SB-26	SB-26
Sample ID					SB-25 (9-10)	SB-25 (13-14)	SB-26 (2.3-2.6)	SB-26 (8-10)	SB-26 (12.5-14.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-10.0	13.0-14.0	2.3-2.6	8.0-10.0	12.5-14.5
Date Sampled					11/07/13	11/07/13	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-	0.0012 J				
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190	0.073			76	4.9
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190	0.023			36	2.0
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					
2-Hexanone	MG/KG	-	-	-					5.3
Acetone	MG/KG	0.05	0.05	500	0.0070	0.0069	0.017		
Benzene	MG/KG	0.06	0.06	44	0.056		0.0023 J		
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390	0.025			44	0.74
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-	0.0021 J			4.0 J	0.60
Methylcyclohexane	MG/KG	-	-	-			0.0050 J	23 J	0.84 J
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-25	SB-25	SB-26	SB-26	SB-26
Sample ID					SB-25 (9-10)	SB-25 (13-14)	SB-26 (2.3-2.6)	SB-26 (8-10)	SB-26 (12.5-14.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-10.0	13.0-14.0	2.3-2.6	8.0-10.0	12.5-14.5
Date Sampled					11/07/13	11/07/13	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500	0.0029 J				1.5
n-Propylbenzene	MG/KG	3.9	3.9	500	0.0026 J			2.1 J	0.98
sec-Butylbenzene	MG/KG	11	11	500					0.36
Styrene	MG/KG	300 CP-51	-	-	0.025			8.6	
Tetrachloroethene	MG/KG	1.3	1.3	150			0.0025 J		
Toluene	MG/KG	0.7	0.7	500	0.085	0.0014 J	0.0026 J	19	
Trichloroethene	MG/KG	0.47	0.47	200	0.0016 J				
Xylene (total)	MG/KG	0.26	1.6	500	0.203	0.0044 J		134	1.6
Total BTEX	MG/KG	-	-	-	0.369	0.0058	0.0049	197	2.34
Total Volatile Organic Compounds	MG/KG	-	-	-	0.5074	0.0127	0.0294	346.7	18.82
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-	1.8		4.2	0.94	12 D
2,4-Dimethylphenol	MG/KG	-	-	-	1.8				
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	12 D		4.0	4.4	7.0 D
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500	0.31 J				
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500	0.63				
Acenaphthene	MG/KG	20	98	500	1.6		4.2	4.5	38 D
Acenaphthylene	MG/KG	100	107	500	3.2		39 D	1.2	3.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-25	SB-25	SB-26	SB-26	SB-26
Sample ID					SB-25 (9-10)	SB-25 (13-14)	SB-26 (2.3-2.6)	SB-26 (8-10)	SB-26 (12.5-14.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-10.0	13.0-14.0	2.3-2.6	8.0-10.0	12.5-14.5
Date Sampled					11/07/13	11/07/13	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-			0.18 J		
Anthracene	MG/KG	100	1000	500	6.5 D		23 D	3.0	16 D
Benzaldehyde	MG/KG	-	-	-			0.22 J		
Benzo(a)anthracene	MG/KG	1	1	5.6	4.3		50 D	2.3	10 D
Benzo(a)pyrene	MG/KG	1	22	1	3.0		56 D	1.8	7.5 D
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	3.1		71 D	2.2	7.8 D
Benzo(g,h,i)perylene	MG/KG	100	1000	500	1.2		72 D	0.98	3.4
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	1.5		18 D	0.80	2.4
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-	0.43				
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-	0.089 J				
Carbazole	MG/KG	-	-	-	3.8		0.84	1.2	0.68
Chrysene	MG/KG	1	1	56	3.3		53 D	1.9	8.6 D
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.35 J		7.2 DJ	0.27 J	0.82
Dibenzofuran	MG/KG	7	210	350	5.1		0.66	2.6	12 D
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-			0.093 J		
Fluoranthene	MG/KG	100	1000	500	9.8 D		150 D	5.4	30 D
Fluorene	MG/KG	30	386	500	7.5 D		16 DJ	3.5	22 D
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	1.3		63 D	1.3	4.2

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-25	SB-25	SB-26	SB-26	SB-26
Sample ID					SB-25 (9-10)	SB-25 (13-14)	SB-26 (2.3-2.6)	SB-26 (8-10)	SB-26 (12.5-14.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-10.0	13.0-14.0	2.3-2.6	8.0-10.0	12.5-14.5
Date Sampled					11/07/13	11/07/13	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	29 D		5.5	20 D	17 D
Phenanthrene	MG/KG	100	1000	500	19 D	0.093 J	140 D	12 D	55 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	7.9 D		190 D	5.5	34 D
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	114.55	0.093	961.9	71.05	267.42
Total Semivolatile Organic Compounds	MG/KG	-	-	-	128.509	0.093	968.093	75.79	292.1
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	15,400	5,340	7,120	18,700	18,200
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	1.8	0.84 J	11.5	2.6	3.3
Barium	MG/KG	350	820	400	151	62.0	205	79.9	102
Beryllium	MG/KG	7.2	47	590	0.27		0.32	0.42	0.30
Cadmium	MG/KG	2.5	7.5	9.3			0.11 J		
Calcium	MG/KG	10000 CP-51	-	-	1,330	933	34,600	2,030	4,410
Chromium	MG/KG	30	NS	1500	34.1	14.8	42.1	29.5	49.9
Cobalt	MG/KG	20 CP-51	-	-	10.6	4.7	15.8	6.1	14.3
Copper	MG/KG	50	1720	270	31.8	16.8	219	16.7	37.2
Iron	MG/KG	2000 CP-51	-	-	20,600	9,760	40,000	21,100	29,400
Lead	MG/KG	63	450	1000	5.3	3.4	236	8.0	3.3

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-25	SB-25	SB-26	SB-26	SB-26
Sample ID					SB-25 (9-10)	SB-25 (13-14)	SB-26 (2.3-2.6)	SB-26 (8-10)	SB-26 (12.5-14.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					9.0-10.0	13.0-14.0	2.3-2.6	8.0-10.0	12.5-14.5
Date Sampled					11/07/13	11/07/13	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	5,580	2,550	2,040	4,070	8,060
Manganese	MG/KG	1600	2000	10000	422	118	280	143	387
Mercury	MG/KG	0.18	0.73	2.8	0.0026 J		1.7		
Nickel	MG/KG	30	130	310	30.0	14.1	260	17.8	25.4
Potassium	MG/KG	-	-	-	6,100	2,570	1,190	1,380	3,690
Selenium	MG/KG	3.9	4	1500	0.72 J				
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	291	91.7	239	218	190
Thallium	MG/KG	5 CP-51	-	-	2.5	0.88 J	0.31 J		
Vanadium	MG/KG	39 CP-51	-	-	35.5	13.4	22.1	38.4	45.7
Zinc	MG/KG	109	2480	10000	44.7	20.4	246	36.5	58.1
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27			22.5		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-26	SB-27	SB-27	SB-27	SB-27
Sample ID					SB-26 (17.5-19.1)	011114-DUP-1	SB-27 (4-4.5)	SB-27 (9-10)	SB-27 (11-12.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					17.5-19.1	4.0-4.5	4.0-4.5	9.0-10.0	11.0-12.5
Date Sampled					01/12/14	01/11/14	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190				0.0064	
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190				0.0029 J	
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500				0.0073	0.0034 J
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.0038 J		0.0065	0.032	0.013
Benzene	MG/KG	0.06	0.06	44					0.014
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					0.012 J
Ethylbenzene	MG/KG	1	1	390				0.0026 J	0.0052 J
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-					0.0073
Methylcyclohexane	MG/KG	-	-	-				0.0057 J	0.025 J
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-26	SB-27	SB-27	SB-27	SB-27
Sample ID					SB-26 (17.5-19.1)	011114-DUP-1	SB-27 (4-4.5)	SB-27 (9-10)	SB-27 (11-12.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					17.5-19.1	4.0-4.5	4.0-4.5	9.0-10.0	11.0-12.5
Date Sampled					01/12/14	01/11/14	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500					0.0049 J
n-Propylbenzene	MG/KG	3.9	3.9	500					0.0053 J
sec-Butylbenzene	MG/KG	11	11	500					0.0050 J
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150			0.0026 J		
Toluene	MG/KG	0.7	0.7	500					0.0063
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500	0.0024 J			0.0107	0.0095
Total BTEX	MG/KG	-	-	-	0.0024	ND	ND	0.0133	0.035
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0062	ND	0.0091	0.0676	0.1109
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-					
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		0.23 J		0.14 J	5.8
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500		0.69	0.092 J	5.7 J	4.3
Acenaphthylene	MG/KG	100	107	500		0.30 J	1.9		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-26	SB-27	SB-27	SB-27	SB-27
Sample ID					SB-26 (17.5-19.1)	011114-DUP-1	SB-27 (4-4.5)	SB-27 (9-10)	SB-27 (11-12.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					17.5-19.1	4.0-4.5	4.0-4.5	9.0-10.0	11.0-12.5
Date Sampled					01/12/14	01/11/14	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500		1.9	1.5	15 D	2.0
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6		3.7	3.0	15 D	0.55
Benzo(a)pyrene	MG/KG	1	22	1		2.7	3.0	12 D	0.38 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6		3.9	4.5	16 D	0.51
Benzo(g,h,i)perylene	MG/KG	100	1000	500		1.9	2.6	6.0	0.33 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		1.1	1.6	4.2	0.13 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-			0.12 J		
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-		0.70		1.7	1.9
Chrysene	MG/KG	1	1	56		3.7	3.0	13 D	0.95
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56		0.49	0.46	1.5	
Dibenzofuran	MG/KG	7	210	350		0.38		6.6 J	4.3
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500		7.3 D	8.2 D	42 D	2.9
Fluorene	MG/KG	30	386	500		0.80	0.32 J	8.4 D	4.7
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6		1.9	2.8	8.0 DJ	0.28 J

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-26	SB-27	SB-27	SB-27	SB-27
Sample ID					SB-26 (17.5-19.1)	011114-DUP-1	SB-27 (4-4.5)	SB-27 (9-10)	SB-27 (11-12.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					17.5-19.1	4.0-4.5	4.0-4.5	9.0-10.0	11.0-12.5
Date Sampled					01/12/14	01/11/14	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500		0.20 J		0.16 J	9.7 DJ
Phenanthrene	MG/KG	100	1000	500		7.5 D	4.9	27 D	10 D
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500		6.7 D	9.5 D	29 D	2.7
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	ND	45.01	47.372	203.1	45.23
Total Semivolatile Organic Compounds	MG/KG	-	-	-	ND	46.09	47.492	211.4	51.43
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	10,500	14,800	10,700	18,900	9,260
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	0.66 J	2.6 J	6.5 J	1.4	0.74 J
Barium	MG/KG	350	820	400	119	166 J	82.2 J	210	84.3
Beryllium	MG/KG	7.2	47	590	0.17 J	0.30	0.26	0.24	
Cadmium	MG/KG	2.5	7.5	9.3					
Calcium	MG/KG	10000 CP-51	-	-	1,190	15,500 J	8,340 J	5,050	1,090
Chromium	MG/KG	30	NS	1500	27.2	33.2	23.0	38.5	19.5
Cobalt	MG/KG	20 CP-51	-	-	7.6	11.3	7.2	13.2	5.4
Copper	MG/KG	50	1720	270	18.2	61.9	41.4	31.6	15.6
Iron	MG/KG	2000 CP-51	-	-	15,600	21,100	15,800	30,800	14,400
Lead	MG/KG	63	450	1000	2.2	126 J	51.4 J	19.0	5.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias. NA - Not analyzed.

Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-26	SB-27	SB-27	SB-27	SB-27
Sample ID					SB-26 (17.5-19.1)	011114-DUP-1	SB-27 (4-4.5)	SB-27 (9-10)	SB-27 (11-12.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					17.5-19.1	4.0-4.5	4.0-4.5	9.0-10.0	11.0-12.5
Date Sampled					01/12/14	01/11/14	01/11/14	01/12/14	01/12/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		Field Duplicate (1-1)			
Metals									
Magnesium	MG/KG	-	-	-	4,520	7,950 J	4,020 J	7,930	3,990
Manganese	MG/KG	1600	2000	10000	257	458	303	434	149
Mercury	MG/KG	0.18	0.73	2.8		0.28	0.28	0.16	0.23
Nickel	MG/KG	30	130	310	24.8	33.1	26.6	29.8	11.6
Potassium	MG/KG	-	-	-	5,090	6,730 J	2,880 J	8,680	6,330
Selenium	MG/KG	3.9	4	1500					
Silver	MG/KG	2	8.3	1500		0.13 J			
Sodium	MG/KG	-	-	-	80.3	370	273	380	134
Thallium	MG/KG	5 CP-51	-	-		0.40 J		0.22 J	0.48 J
Vanadium	MG/KG	39 CP-51	-	-	26.9	39.6	29.4	46.1	30.8
Zinc	MG/KG	109	2480	10000	34.5	121 J	63.4 J	65.7	39.8
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27			1.1		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-27	SB-28	SB-28	SB-28	SB-29
Sample ID					SB-27 (22-23.5)	SB-28 (10-12)	SB-28 (17-19)	SB-28 (22-23)	SB-29 (2.5-3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					22.0-23.5	10.0-12.0	17.0-19.0	22.0-23.0	2.5-3.0
Date Sampled					01/12/14	01/12/14	01/12/14	01/12/14	01/11/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190	0.0066 J	0.0076	0.019	0.10	
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		0.0026 J	0.0071	0.012 J	
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500	0.025			0.015 J	
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.12	0.0068	0.0091	0.062	0.0039 J
Benzene	MG/KG	0.06	0.06	44		0.029	0.010	0.17	
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390		0.0036 J	0.0062	0.42	
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.0033 J	0.0043 J	0.033	
Methylcyclohexane	MG/KG	-	-	-					
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-27	SB-28	SB-28	SB-28	SB-29
Sample ID					SB-27 (22-23.5)	SB-28 (10-12)	SB-28 (17-19)	SB-28 (22-23)	SB-29 (2.5-3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					22.0-23.5	10.0-12.0	17.0-19.0	22.0-23.0	2.5-3.0
Date Sampled					01/12/14	01/12/14	01/12/14	01/12/14	01/11/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		0.0028 J			
n-Propylbenzene	MG/KG	3.9	3.9	500		0.0030 J	0.0028 J	0.010 J	
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500		0.0025 J	0.0045 J	0.021	
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		0.0084	0.0138	0.28	
Total BTEX	MG/KG	-	-	-	ND	0.0435	0.0345	0.891	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.1516	0.0696	0.0768	1.123	0.0039
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-			0.25 J	1.2 J	
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.33 J	0.12 J	0.55	7.1 DJ	
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	0.67	0.43	2.3	21 D	0.21 J
Acenaphthylene	MG/KG	100	107	500	0.097 J				0.52 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-27	SB-28	SB-28	SB-28	SB-29
Sample ID					SB-27 (22-23.5)	SB-28 (10-12)	SB-28 (17-19)	SB-28 (22-23)	SB-29 (2.5-3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					22.0-23.5	10.0-12.0	17.0-19.0	22.0-23.0	2.5-3.0
Date Sampled					01/12/14	01/12/14	01/12/14	01/12/14	01/11/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	1.3	0.17 J	1.3	38 D	0.68
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	1.2	0.22 J	0.52	49 D	1.8
Benzo(a)pyrene	MG/KG	1	22	1	1.1	0.19 J	0.38 J	38 D	1.6
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	1.3	0.26 J	0.46	55 D	2.2
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.75	0.10 J	0.23 J	20 D	1.3
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.49		0.15 J	17 D	0.60
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-	0.87	0.15 J	0.56	14 DJ	0.21 J
Chrysene	MG/KG	1	1	56	1.2	0.24 J	0.56	42 D	2.1
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.18 J			5.7	0.28 J
Dibenzofuran	MG/KG	7	210	350	0.57	0.14 J	1.4	18 D	0.088 J
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-					
Fluoranthene	MG/KG	100	1000	500	3.3	0.48	2.1	130 D	3.8
Fluorene	MG/KG	30	386	500	0.97	0.26 J	2.2	27 D	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.89	0.14 J	0.25 J	27 DJ	1.5

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-27	SB-28	SB-28	SB-28	SB-29
Sample ID					SB-27 (22-23.5)	SB-28 (10-12)	SB-28 (17-19)	SB-28 (22-23)	SB-29 (2.5-3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					22.0-23.5	10.0-12.0	17.0-19.0	22.0-23.0	2.5-3.0
Date Sampled					01/12/14	01/12/14	01/12/14	01/12/14	01/11/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	0.61	0.66	1.8	17 D	
Phenanthrene	MG/KG	100	1000	500	4.0	0.60	6.1	130 D	2.5
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	3.0	0.42	2.0	93 D	2.8
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	21.387	4.29	20.9	716.8	21.89
Total Semivolatile Organic Compounds	MG/KG	-	-	-	22.827	4.58	23.11	750	22.188
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	15,400	15,400	10,800	12,100	12,100
Antimony	MG/KG	12 CP-51	-	-					
Arsenic	MG/KG	13	16	16	9.2	2.4	8.8	2.9	2.5
Barium	MG/KG	350	820	400	719	118	95.2	66.8	159
Beryllium	MG/KG	7.2	47	590	0.24 J	0.41	0.22	0.19 J	0.32
Cadmium	MG/KG	2.5	7.5	9.3	3.0	0.11 J		0.027 J	
Calcium	MG/KG	10000 CP-51	-	-	12,500	18,000	9,870	14,200	7,640
Chromium	MG/KG	30	NS	1500	89.1	25.4	24.4	14.3	27.9
Cobalt	MG/KG	20 CP-51	-	-	12.0	8.6	6.0	11.0	9.2
Copper	MG/KG	50	1720	270	72.6	22.9	24.1	31.9	72.5
Iron	MG/KG	2000 CP-51	-	-	63,900	21,100	12,800	19,400	17,900
Lead	MG/KG	63	450	1000	801	18.3	16.0	50.4 J	197

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-27	SB-28	SB-28	SB-28	SB-29
Sample ID					SB-27 (22-23.5)	SB-28 (10-12)	SB-28 (17-19)	SB-28 (22-23)	SB-29 (2.5-3)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					22.0-23.5	10.0-12.0	17.0-19.0	22.0-23.0	2.5-3.0
Date Sampled					01/12/14	01/12/14	01/12/14	01/12/14	01/11/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	10,100	4,320	4,140	5,700	5,700
Manganese	MG/KG	1600	2000	10000	662	541	186	251	356
Mercury	MG/KG	0.18	0.73	2.8	0.17	0.046	0.091	0.099	0.25
Nickel	MG/KG	30	130	310	33.7	19.1	18.5	16.0	31.2
Potassium	MG/KG	-	-	-	9,390	3,450	3,570	2,390	5,730
Selenium	MG/KG	3.9	4	1500					
Silver	MG/KG	2	8.3	1500					0.22 J
Sodium	MG/KG	-	-	-	246	286	388	526 J	455
Thallium	MG/KG	5 CP-51	-	-					
Vanadium	MG/KG	39 CP-51	-	-	46.3	34.7	25.3	38.1	32.6
Zinc	MG/KG	109	2480	10000	425	300	43.6	774	124
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27	1.7				

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-29	SB-29	SB-30	SB-30	SB-31
Sample ID					SB-29 (5.8-7)	SB-29 (20.8-21.9)	SB-30 (3-3.5)	SB-30 (5.8-7.0)	SB-31 (4-4.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					5.8-7.0	20.8-21.9	3.0-3.5	5.8-7.0	4.0-4.5
Date Sampled					01/12/14	01/12/14	11/15/13	11/19/13	11/20/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		2.9			
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		1.0			
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500					
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.0096				
Benzene	MG/KG	0.06	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390		1.8			
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		0.34 J			
Methylcyclohexane	MG/KG	-	-	-		0.12 J			
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias. NA - Not analyzed.

Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-29	SB-29	SB-30	SB-30	SB-31
Sample ID					SB-29 (5.8-7)	SB-29 (20.8-21.9)	SB-30 (3-3.5)	SB-30 (5.8-7.0)	SB-31 (4-4.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					5.8-7.0	20.8-21.9	3.0-3.5	5.8-7.0	4.0-4.5
Date Sampled					01/12/14	01/12/14	11/15/13	11/19/13	11/20/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		0.18 J			
n-Propylbenzene	MG/KG	3.9	3.9	500		0.26 J			
sec-Butylbenzene	MG/KG	11	11	500					
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500					
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500		2.54			
Total BTEX	MG/KG	-	-	-	ND	4.34	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0096	9.14	ND	ND	ND
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		1.3			
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.23 J	10 D	0.15 J		
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-					
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	0.32 J	1.0	0.12 J		
Acenaphthylene	MG/KG	100	107	500		1.3	0.36 J		2.4

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. D - Result reported from a secondary dilution analysis.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-29	SB-29	SB-30	SB-30	SB-31
Sample ID					SB-29 (5.8-7)	SB-29 (20.8-21.9)	SB-30 (3-3.5)	SB-30 (5.8-7.0)	SB-31 (4-4.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					5.8-7.0	20.8-21.9	3.0-3.5	5.8-7.0	4.0-4.5
Date Sampled					01/12/14	01/12/14	11/15/13	11/19/13	11/20/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	0.84	3.6	0.76		0.83 J
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	1.1	2.0	1.4		5.2
Benzo(a)pyrene	MG/KG	1	22	1	0.89	1.8	1.5		8.4
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	1.1	1.9	1.8		11
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.53	1.3	1.8		15 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	0.44	0.52	1.3		3.5
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-					
Carbazole	MG/KG	-	-	-	0.14 J	0.16 J	0.41		
Chrysene	MG/KG	1	1	56	1.1	2.2	1.5		5.7
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	0.16 J	0.21 J	0.43		1.5 J
Dibenzofuran	MG/KG	7	210	350	0.20 J	0.38 J			
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-			0.081 J		
Fluoranthene	MG/KG	100	1000	500	2.5	4.8	2.6		8.1
Fluorene	MG/KG	30	386	500	0.45	2.8	0.17 J		0.50 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.62	1.2	1.4		11

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-29	SB-29	SB-30	SB-30	SB-31
Sample ID					SB-29 (5.8-7)	SB-29 (20.8-21.9)	SB-30 (3-3.5)	SB-30 (5.8-7.0)	SB-31 (4-4.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					5.8-7.0	20.8-21.9	3.0-3.5	5.8-7.0	4.0-4.5
Date Sampled					01/12/14	01/12/14	11/15/13	11/19/13	11/20/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	0.74	49 D	0.11 J		0.74 J
Phenanthrene	MG/KG	100	1000	500	2.6	16 D	1.5		3.1
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	2.3	6.7	2.5		12
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	15.92	106.33	19.4	ND	88.97
Total Semivolatile Organic Compounds	MG/KG	-	-	-	16.26	108.17	19.891	ND	88.97
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	11,900	23,000	10,500	19,400	5,360
Antimony	MG/KG	12 CP-51	-	-					1.9
Arsenic	MG/KG	13	16	16	2.6	3.2	103	5.4	13.9
Barium	MG/KG	350	820	400	114	192	246	199	169
Beryllium	MG/KG	7.2	47	590	0.32	0.57	0.29		
Cadmium	MG/KG	2.5	7.5	9.3			1.3	0.28	0.99
Calcium	MG/KG	10000 CP-51	-	-	4,040	3,770	6,030	1,670	8,050
Chromium	MG/KG	30	NS	1500	22.9	41.3	36.7	32.4	15.5
Cobalt	MG/KG	20 CP-51	-	-	7.0	13.2	8.8	16.0	9.8
Copper	MG/KG	50	1720	270	23.9	46.3	145	46.5	117
Iron	MG/KG	2000 CP-51	-	-	16,800	28,500	20,800	33,200	75,000
Lead	MG/KG	63	450	1000	57.4	55.6	1,010	2.8	545

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-29	SB-29	SB-30	SB-30	SB-31
Sample ID					SB-29 (5.8-7)	SB-29 (20.8-21.9)	SB-30 (3-3.5)	SB-30 (5.8-7.0)	SB-31 (4-4.5)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					5.8-7.0	20.8-21.9	3.0-3.5	5.8-7.0	4.0-4.5
Date Sampled					01/12/14	01/12/14	11/15/13	11/19/13	11/20/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	3,900	6,950	4,620	7,940	1,790
Manganese	MG/KG	1600	2000	10000	305	575	349	365	699
Mercury	MG/KG	0.18	0.73	2.8	0.10	0.63	1.5		5.0
Nickel	MG/KG	30	130	310	17.6	34.6	62.4	22.1	19.2
Potassium	MG/KG	-	-	-	3,000	6,570	2,990	12,200	1,080
Selenium	MG/KG	3.9	4	1500					
Silver	MG/KG	2	8.3	1500			0.21 J		
Sodium	MG/KG	-	-	-	293	300	128	98.4	156
Thallium	MG/KG	5 CP-51	-	-			1.4	3.6	
Vanadium	MG/KG	39 CP-51	-	-	28.3	47.6	32.0	50.5	28.0
Zinc	MG/KG	109	2480	10000	77.9	100	361	68.2	244
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27		6.6	0.61 J		4.2

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-31	SB-31	SB-31	SB-32	SB-32
Sample ID					SB-31 (8.8-9.5)	SB-31 (11.5-12.5)	SB-31 (13-14.5)	SB-32 (3-3.5)	SB-32 (8.8-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					8.8-9.5	11.5-12.5	13.0-14.5	3.0-3.5	8.8-10.0
Date Sampled					11/22/13	11/22/13	11/22/13	11/15/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-					
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-					
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190	0.058	7.6	6.3		
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500					
1,2-Dichloroethane	MG/KG	0.02	0.02	30					
1,2-Dichloropropane	MG/KG	700 CP-51	-	-					
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190	0.010 J	2.2	2.2		
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130					
2-Butanone	MG/KG	0.12	0.12	500	0.015				
2-Hexanone	MG/KG	-	-	-					
Acetone	MG/KG	0.05	0.05	500	0.060				0.0036 J
Benzene	MG/KG	0.06	0.06	44	0.0073 J				
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-					
Chlorobenzene	MG/KG	1.1	1.1	500					
Cyclohexane	MG/KG	-	-	-					
Ethylbenzene	MG/KG	1	1	390	0.010 J	0.28 J	0.85		
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-	0.025	1.0	0.72		
Methylcyclohexane	MG/KG	-	-	-	0.0076 J	1.9	0.41		
Methylene chloride	MG/KG	0.05	0.05	500					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

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SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-31	SB-31	SB-31	SB-32	SB-32
Sample ID					SB-31 (8.8-9.5)	SB-31 (11.5-12.5)	SB-31 (13-14.5)	SB-32 (3-3.5)	SB-32 (8.8-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					8.8-9.5	11.5-12.5	13.0-14.5	3.0-3.5	8.8-10.0
Date Sampled					11/22/13	11/22/13	11/22/13	11/15/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Volatile Organic Compounds									
n-Butylbenzene	MG/KG	12	12	500		0.79			
n-Propylbenzene	MG/KG	3.9	3.9	500	0.017	1.0	0.80		
sec-Butylbenzene	MG/KG	11	11	500		0.10 J			
Styrene	MG/KG	300 CP-51	-	-					
Tetrachloroethene	MG/KG	1.3	1.3	150					
Toluene	MG/KG	0.7	0.7	500	0.0073 J				
Trichloroethene	MG/KG	0.47	0.47	200					
Xylene (total)	MG/KG	0.26	1.6	500	0.035	0.30 J	1.05		
Total BTEX	MG/KG	-	-	-	0.0596	0.58	1.9	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.2522	15.17	12.33	ND	0.0036
Semivolatile Organic Compounds									
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		12	3.7		
2,4-Dimethylphenol	MG/KG	-	-	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-	0.73 J	100 D	26 D		
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-	-		0.64 J			
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500					
Acenaphthene	MG/KG	20	98	500	4.7	65 D	16 D		
Acenaphthylene	MG/KG	100	107	500	2.6	9.0	2.2	0.54	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-31	SB-31	SB-31	SB-32	SB-32
Sample ID					SB-31 (8.8-9.5)	SB-31 (11.5-12.5)	SB-31 (13-14.5)	SB-32 (3-3.5)	SB-32 (8.8-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					8.8-9.5	11.5-12.5	13.0-14.5	3.0-3.5	8.8-10.0
Date Sampled					11/22/13	11/22/13	11/22/13	11/15/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Acetophenone	MG/KG	-	-	-					
Anthracene	MG/KG	100	1000	500	8.3	25	7.3 D	0.42	
Benzaldehyde	MG/KG	-	-	-					
Benzo(a)anthracene	MG/KG	1	1	5.6	21	19	5.3	1.8	
Benzo(a)pyrene	MG/KG	1	22	1	22	15	3.9	2.0	
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	27	13	2.7	2.0	
Benzo(g,h,i)perylene	MG/KG	100	1000	500	14	7.9	2.0	1.6	
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56	8.4	5.5	2.2	1.3	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-					
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-				0.095 J	
Carbazole	MG/KG	-	-	-	2.1		0.20 J	0.10 J	
Chrysene	MG/KG	1	1	56	16	18	4.4	1.7	
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56	4.6	1.5 J	0.35 J	0.24 J	
Dibenzofuran	MG/KG	7	210	350	2.6		1.2		
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-					
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-			0.091 J		
Fluoranthene	MG/KG	100	1000	500	30 D	48 D	11 D	2.3	
Fluorene	MG/KG	30	386	500	5.3	28 D	8.9 D	0.084 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	16	7.0	1.6	1.5	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-31	SB-31	SB-31	SB-32	SB-32
Sample ID					SB-31 (8.8-9.5)	SB-31 (11.5-12.5)	SB-31 (13-14.5)	SB-32 (3-3.5)	SB-32 (8.8-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					8.8-9.5	11.5-12.5	13.0-14.5	3.0-3.5	8.8-10.0
Date Sampled					11/22/13	11/22/13	11/22/13	11/15/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Semivolatile Organic Compounds									
Naphthalene	MG/KG	12	12	500	3.1	41 D	35 D		
Phenanthrene	MG/KG	100	1000	500	20	110 D	29 D	0.72	
Phenol	MG/KG	0.33	0.33	500					
Pyrene	MG/KG	100	1000	500	25	60 D	20 D	2.6	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	228.73	572.9	177.85	18.804	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	-	233.43	585.54	183.041	18.999	ND
Metals									
Aluminum	MG/KG	10000 CP-51	-	-	11,500	14,200	12,900	12,200	16,500
Antimony	MG/KG	12 CP-51	-	-				1.1 J	
Arsenic	MG/KG	13	16	16	3.1	2.3	1.1	28.4 J	1.2
Barium	MG/KG	350	820	400	75.2	58.7	120	197	154
Beryllium	MG/KG	7.2	47	590	0.23			0.34	
Cadmium	MG/KG	2.5	7.5	9.3				1.5 J	
Calcium	MG/KG	10000 CP-51	-	-	16,600	1,060	1,180	7,190	843
Chromium	MG/KG	30	NS	1500	15.8	35.6	36.2	26.5	27.5
Cobalt	MG/KG	20 CP-51	-	-	5.3	7.2	11.4	10.5	11.9
Copper	MG/KG	50	1720	270	14.4	12.8	18.5	89.1 J	31.8
Iron	MG/KG	2000 CP-51	-	-	13,600	24,700	18,200	59,100 J	27,800
Lead	MG/KG	63	450	1000	60.7	6.7	4.7	379	4.6

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

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[SITEID] = '04' AND [MATRIX] = 'SO' AND [LOGDATE] >= #10/29/2013#

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					SB-31	SB-31	SB-31	SB-32	SB-32
Sample ID					SB-31 (8.8-9.5)	SB-31 (11.5-12.5)	SB-31 (13-14.5)	SB-32 (3-3.5)	SB-32 (8.8-10)
Matrix					Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)					8.8-9.5	11.5-12.5	13.0-14.5	3.0-3.5	8.8-10.0
Date Sampled					11/22/13	11/22/13	11/22/13	11/15/13	11/19/13
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**					
Metals									
Magnesium	MG/KG	-	-	-	2,360	4,250	5,390	3,570	5,660
Manganese	MG/KG	1600	2000	10000	300	193	300	784 J	454
Mercury	MG/KG	0.18	0.73	2.8	0.13	0.013 J	0.0032 J	1.8 J+	
Nickel	MG/KG	30	130	310	13.0	14.8	26.9	21.6	23.6
Potassium	MG/KG	-	-	-	794	2,720	5,270	3,290	7,430
Selenium	MG/KG	3.9	4	1500	0.59 J	0.46 J			0.95 J
Silver	MG/KG	2	8.3	1500					
Sodium	MG/KG	-	-	-	159	219	156	179	101
Thallium	MG/KG	5 CP-51	-	-	0.57 J	1.2	1.4	2.2	2.2
Vanadium	MG/KG	39 CP-51	-	-	21.4	33.4	28.6	40.5	34.3
Zinc	MG/KG	109	2480	10000	40.1	33.2	40.2	341 J	49.8
Miscellaneous Parameters									
Cyanide, Total	MG/KG	27	40	27					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-09	TP-09
Sample ID					TP-9 (2.7-2.9)	TP-9 (3.9-4.2)
Matrix					Soil	Soil
Depth Interval (ft)					2.7-2.9	3.9-4.2
Date Sampled					01/15/14	01/15/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	-	-		
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	3.4 CP-51	-		
1,2,4-Trimethylbenzene	MG/KG	3.6	3.6	190		
1,2-Dichlorobenzene	MG/KG	1.1	1.1	500		
1,2-Dichloroethane	MG/KG	0.02	0.02	30		
1,2-Dichloropropane	MG/KG	700 CP-51	-	-		
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	8.4	190		
1,4-Dichlorobenzene	MG/KG	1.8	1.8	130		
2-Butanone	MG/KG	0.12	0.12	500		
2-Hexanone	MG/KG	-	-	-		
Acetone	MG/KG	0.05	0.05	500	0.0074 J	
Benzene	MG/KG	0.06	0.06	44		
Carbon disulfide	MG/KG	2.7 CP-51	2.7 CP-51	-		
Chlorobenzene	MG/KG	1.1	1.1	500		
Cyclohexane	MG/KG	-	-	-		
Ethylbenzene	MG/KG	1	1	390		
Isopropylbenzene	MG/KG	2.3 CP-51	2.3 CP-51	-		
Methylcyclohexane	MG/KG	-	-	-		
Methylene chloride	MG/KG	0.05	0.05	500		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Criteria (3)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria 1

Concentration Exceeds Criteria (2)

Border Concentration Exceeds Criteria (3)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-09	TP-09
Sample ID					TP-9 (2.7-2.9)	TP-9 (3.9-4.2)
Matrix					Soil	Soil
Depth Interval (ft)					2.7-2.9	3.9-4.2
Date Sampled					01/15/14	01/15/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		
Volatile Organic Compounds						
n-Butylbenzene	MG/KG	12	12	500		
n-Propylbenzene	MG/KG	3.9	3.9	500		
sec-Butylbenzene	MG/KG	11	11	500		
Styrene	MG/KG	300 CP-51	-	-		
Tetrachloroethene	MG/KG	1.3	1.3	150		
Toluene	MG/KG	0.7	0.7	500		
Trichloroethene	MG/KG	0.47	0.47	200		
Xylene (total)	MG/KG	0.26	1.6	500		
Total BTEX	MG/KG	-	-	-	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	-	0.0074	ND
Semivolatile Organic Compounds						
1,1'-Biphenyl	MG/KG	60 CP-51	-	-		
2,4-Dimethylphenol	MG/KG	-	-	-		
2-Methylnaphthalene	MG/KG	0.41 CP-51	36.4 CP-51	-		
2-Methylphenol (o-cresol)	MG/KG	0.33	0.33	500		
3,3'-Dichlorobenzidine	MG/KG	-	-	-		
4-Methylphenol (p-cresol)	MG/KG	0.33	0.33	500		
Acenaphthene	MG/KG	20	98	500		
Acenaphthylene	MG/KG	100	107	500		0.092 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-09	TP-09
Sample ID					TP-9 (2.7-2.9)	TP-9 (3.9-4.2)
Matrix					Soil	Soil
Depth Interval (ft)					2.7-2.9	3.9-4.2
Date Sampled					01/15/14	01/15/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		
Semivolatile Organic Compounds						
Acetophenone	MG/KG	-	-	-		
Anthracene	MG/KG	100	1000	500		
Benzaldehyde	MG/KG	-	-	-		
Benzo(a)anthracene	MG/KG	1	1	5.6		0.17 J
Benzo(a)pyrene	MG/KG	1	22	1	0.071 J	0.21 J
Benzo(b)fluoranthene	MG/KG	1	1.7	5.6	0.086 J	0.27 J
Benzo(g,h,i)perylene	MG/KG	100	1000	500	0.078 J	0.24 J
Benzo(k)fluoranthene	MG/KG	0.8	1.7	56		0.080 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	435 CP-51	-		
Butylbenzylphthalate	MG/KG	100 CP-51	122 CP-51	-		
Carbazole	MG/KG	-	-	-		
Chrysene	MG/KG	1	1	56		0.18 J
Dibenz(a,h)anthracene	MG/KG	0.33	1000	0.56		
Dibenzofuran	MG/KG	7	210	350		
Diethylphthalate	MG/KG	7.1 CP-51	7.1 CP-51	-		
Di-n-butylphthalate	MG/KG	0.014 CP-51	8.1 CP-51	-		
Fluoranthene	MG/KG	100	1000	500	0.078 J	0.39
Fluorene	MG/KG	30	386	500		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	8.2	5.6	0.079 J	0.23 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-09	TP-09
Sample ID					TP-9 (2.7-2.9)	TP-9 (3.9-4.2)
Matrix					Soil	Soil
Depth Interval (ft)					2.7-2.9	3.9-4.2
Date Sampled					01/15/14	01/15/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		
Semivolatile Organic Compounds						
Naphthalene	MG/KG	12	12	500	0.16 J	0.18 J
Phenanthrene	MG/KG	100	1000	500		0.28 J
Phenol	MG/KG	0.33	0.33	500		
Pyrene	MG/KG	100	1000	500	0.11 J	0.54
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	-	0.662	2.862
Total Semivolatile Organic Compounds	MG/KG	-	-	-	0.662	2.862
Metals						
Aluminum	MG/KG	10000 CP-51	-	-	15,100	18,700
Antimony	MG/KG	12 CP-51	-	-		
Arsenic	MG/KG	13	16	16	1.4	1.4
Barium	MG/KG	350	820	400	157	202
Beryllium	MG/KG	7.2	47	590		
Cadmium	MG/KG	2.5	7.5	9.3		0.12 J
Calcium	MG/KG	10000 CP-51	-	-	1,920	2,070
Chromium	MG/KG	30	NS	1500	45.3	44.4
Cobalt	MG/KG	20 CP-51	-	-	8.7	15.9 J
Copper	MG/KG	50	1720	270	62.3	65.8
Iron	MG/KG	2000 CP-51	-	-	23,200	30,500
Lead	MG/KG	63	450	1000	28.4	24.7 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 4-5
SUMMARY OF DETECTED COMPOUNDS IN REMEDIAL INVESTIGATION SOIL SAMPLES
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Location ID					TP-09	TP-09
Sample ID					TP-9 (2.7-2.9)	TP-9 (3.9-4.2)
Matrix					Soil	Soil
Depth Interval (ft)					2.7-2.9	3.9-4.2
Date Sampled					01/15/14	01/15/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	**Criteria (3)**		
Metals						
Magnesium	MG/KG	-	-	-	7,280	9,540
Manganese	MG/KG	1600	2000	10000	393	492
Mercury	MG/KG	0.18	0.73	2.8	0.079	0.14
Nickel	MG/KG	30	130	310	27.7	38.8
Potassium	MG/KG	-	-	-	10,200	13,500
Selenium	MG/KG	3.9	4	1500	0.85 J	
Silver	MG/KG	2	8.3	1500	0.23 J	0.24 J
Sodium	MG/KG	-	-	-	182	241
Thallium	MG/KG	5 CP-51	-	-		1.7
Vanadium	MG/KG	39 CP-51	-	-	43.9	57.8
Zinc	MG/KG	109	2480	10000	87.6	112
Miscellaneous Parameters						
Cyanide, Total	MG/KG	27	40	27		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 4-6A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	MG/KG	20 CP-51	80	2	0.001	0.003	0.002	0	SB-16	13-14
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	80	1	0.002	0.002	0.002	0	SB-16	13-14
1,2,4-Trimethylbenzene	MG/KG	3.6	80	28	0.002	76.00	7.05	8	SB-26	8-10
1,2-Dichlorobenzene	MG/KG	1.1	80	1	0.370	0.370	0.370	0	SB-16	18-19
1,2-Dichloroethane	MG/KG	0.02	80	1	0.340	0.340	0.340	1	SB-23	13.5-14
1,2-Dichloropropane	MG/KG	700 CP-51	80	2	0.018	0.036	0.027	0	SB-19	10.5-11.5
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	80	23	0.003	36.00	3.21	2	SB-26	8-10
1,4-Dichlorobenzene	MG/KG	1.8	80	1	1.30	1.30	1.30	0	SB-23	13.5-14
2-Butanone	MG/KG	0.12	80	15	0.003	0.025	0.009	0	SB-27	22-23.5
2-Hexanone	MG/KG	-	80	1	5.30	5.30	5.30	0	SB-26	12.5-14.5
Acetone	MG/KG	0.05	80	45	0.004	0.120	0.022	5	SB-27	22-23.5
Benzene	MG/KG	0.06	80	17	0.002	26.00	1.71	8	SB-23	13.5-14
Carbon disulfide	MG/KG	2.7 CP-51	80	1	0.012	0.012	0.012	0	SB-18	3-3.5
Chlorobenzene	MG/KG	1.1	80	1	0.590	0.590	0.590	0	SB-23	13.5-14
Cyclohexane	MG/KG	-	80	5	0.005	6.20	2.14	0	SB-18	12.5-13.5
Ethylbenzene	MG/KG	1	80	24	0.003	74.00	6.84	8	SB-23	13.5-14
Isopropylbenzene	MG/KG	2.3 CP-51	80	23	0.002	4.00	0.567	1	SB-26	8-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Methylcyclohexane	MG/KG	-	80	21	0.003	23.00	3.38	0	SB-26	8-10
Methylene chloride	MG/KG	0.05	80	11	0.002	0.010	0.004	0	SB-17	4-4.5
n-Butylbenzene	MG/KG	12	80	17	0.003	1.60	0.392	0	SB-23	13.5-14
n-Propylbenzene	MG/KG	3.9	80	23	0.003	2.10	0.476	0	SB-26	8-10
sec-Butylbenzene	MG/KG	11	80	11	0.004	0.360	0.092	0	SB-26	12.5-14.5
Styrene	MG/KG	300 CP-51	80	3	0.025	8.60	2.90	0	SB-26	8-10
Tetrachloroethene	MG/KG	1.3	80	2	0.003	0.003	0.003	0	SB-27	4-4.5
Toluene	MG/KG	0.7	80	16	0.001	19.00	1.53	3	SB-26	8-10
Trichloroethene	MG/KG	0.47	80	2	0.002	0.003	0.003	0	SB-16	9-10
Xylene (total)	MG/KG	0.26	80	27	0.002	134.0	9.38	15	SB-26	8-10
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	60 CP-51	80	23	0.250	150.0	12.97	1	SB-18	15.8-16.8
2,4-Dimethylphenol	MG/KG	-	80	1	1.80	1.80	1.80	0	SB-25	9-10
2-Methylnaphthalene	MG/KG	0.41 CP-51	80	36	0.120	340.0	30.97	26	SB-25	7.2-8.2
2-Methylphenol (o-cresol)	MG/KG	0.33	80	1	0.310	0.310	0.310	0	SB-25	9-10
3,3'-Dichlorobenzidine	MG/KG	-	80	1	0.640	0.640	0.640	0	SB-31	11.5-12.5
4-Methylphenol (p-cresol)	MG/KG	0.33	80	2	0.120	0.630	0.375	1	SB-25	9-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.


Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthene	MG/KG	20	80	43	0.080	540.0	25.27	9	SB-18	15.8-16.8
Acenaphthylene	MG/KG	100	80	42	0.091	150.0	10.57	1	SB-25	7.2-8.2
Acetophenone	MG/KG	-	80	1	0.180	0.180	0.180	0	SB-26	2.3-2.6
Anthracene	MG/KG	100	80	53	0.076	200.0	16.13	2	SB-18	15.8-16.8
Benzaldehyde	MG/KG	-	80	1	0.220	0.220	0.220	0	SB-26	2.3-2.6
Benzo(a)anthracene	MG/KG	1	80	55	0.075	140.0	15.84	38	SB-18	15.8-16.8
Benzo(a)pyrene	MG/KG	1	80	55	0.071	150.0	12.79	38	SB-18	15.8-16.8
Benzo(b)fluoranthene	MG/KG	1	80	54	0.086	130.0	16.28	39	SB-18	15.8-16.8
Benzo(g,h,i)perylene	MG/KG	100	80	53	0.078	77.00	9.16	0	SB-18	15.8-16.8
Benzo(k)fluoranthene	MG/KG	0.8	80	51	0.056	40.00	6.37	32	SB-18	15.8-16.8
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	80	6	0.120	87.00	15.01	1	SB-23	13.5-14
Butylbenzylphthalate	MG/KG	100 CP-51	80	6	0.073	0.130	0.090	0	SB-21	20.7-21.1
Carbazole	MG/KG	-	80	35	0.088	77.00	5.40	0	SB-25	7.2-8.2
Chrysene	MG/KG	1	80	54	0.084	130.0	14.36	38	SB-18	15.8-16.8
Dibenz(a,h)anthracene	MG/KG	0.33	80	42	0.070	20.00	2.82	27	SB-18	15.8-16.8
Dibenzofuran	MG/KG	7	80	32	0.088	150.0	12.93	8	SB-25	7.2-8.2
Diethylphthalate	MG/KG	7.1 CP-51	80	1	0.071	0.071	0.071	0	MW-08B	9.5-10.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Di-n-butylphthalate	MG/KG	0.014 CP-51	80	7	0.081	0.120	0.098	7	SB-18	12.5-13.5
Fluoranthene	MG/KG	100	80	57	0.078	460.0	36.71	6	SB-18	15.8-16.8
Fluorene	MG/KG	30	80	46	0.082	350.0	21.53	5	SB-18	15.8-16.8
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	80	51	0.079	64.00	9.57	39	SB-17	4-4.5
Naphthalene	MG/KG	12	80	39	0.110	840.0	63.33	16	SB-25	7.2-8.2
Phenanthrene	MG/KG	100	80	57	0.093	940.0	53.41	8	SB-18	15.8-16.8
Phenol	MG/KG	0.33	80	1	0.110	0.110	0.110	0	MW-02B	3.5-4
Pyrene	MG/KG	100	80	58	0.081	600.0	37.20	5	SB-18	15.8-16.8
Metals										
Aluminum	MG/KG	10000 CP-51	80	80	4,790	4.29E+04	1.24E+04	49	SB-19	21.6-22.7
Antimony	MG/KG	12 CP-51	80	7	0.340	2.30	0.990	0	SB-23	13.5-14
Arsenic	MG/KG	13	80	80	0.570	103.0	4.32	4	SB-30	3-3.5
Barium	MG/KG	350	80	80	39.30	719.0	116.7	1	SB-27	22-23.5
Beryllium	MG/KG	7.2	80	52	0.073	1.00	0.330	0	SB-19	21.6-22.7
Cadmium	MG/KG	2.5	80	17	0.024	24.60	1.98	2	SB-23	13.5-14
Calcium	MG/KG	10000 CP-51	80	80	843.0	6.41E+04	7,474	15	SB-17	4-4.5
Chromium	MG/KG	30	80	80	10.70	403.0	40.93	28	SB-19	21.6-22.7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6A
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
UNRESTRICTED USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cobalt	MG/KG	20 CP-51	80	80	4.00	31.10	8.91	2	SB-19	21.6-22.7
Copper	MG/KG	50	80	79	2.80	222.0	36.92	15	SB-23	13.5-14
Iron	MG/KG	2000 CP-51	80	80	8,840	7.50E+04	2.07E+04	80	SB-31	4-4.5
Lead	MG/KG	63	80	80	2.20	1,240	82.62	15	SB-23	13.5-14
Magnesium	MG/KG	-	80	80	1,430	6.70E+04	6,044	0	SB-19	21.6-22.7
Manganese	MG/KG	1600	80	80	83.70	1,380	336.9	0	SB-19	21.6-22.7
Mercury	MG/KG	0.18	80	50	0.002	5.00	0.404	18	SB-31	4-4.5
Nickel	MG/KG	30	80	80	8.40	408.0	38.07	16	SB-19	21.6-22.7
Potassium	MG/KG	-	80	80	706.0	1.77E+04	4,368	0	SB-19	21.6-22.7
Selenium	MG/KG	3.9	80	28	0.460	2.60	0.945	0	SB-16	3.2-3.6
Silver	MG/KG	2	80	8	0.075	0.850	0.261	0	SB-23	13.5-14
Sodium	MG/KG	-	80	80	28.00	1,770	235.7	0	SB-23	13.5-14
Thallium	MG/KG	5 CP-51	80	63	0.220	5.60	1.32	1	SB-19	21.6-22.7
Vanadium	MG/KG	39 CP-51	80	80	13.40	57.80	28.86	12	TP-09	3.9-4.2
Zinc	MG/KG	109	80	80	15.20	7,040	171.8	14	SB-23	13.5-14
Miscellaneous Parameters										
Cyanide, Total	MG/KG	27	80	10	0.610	46.60	9.14	1	SB-17	4-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	MG/KG	-	80	2	0.001	0.003	0.002	0	SB-16	13-14
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	80	1	0.002	0.002	0.002	0	SB-16	13-14
1,2,4-Trimethylbenzene	MG/KG	3.6	80	28	0.002	76.00	7.05	8	SB-26	8-10
1,2-Dichlorobenzene	MG/KG	1.1	80	1	0.370	0.370	0.370	0	SB-16	18-19
1,2-Dichloroethane	MG/KG	0.02	80	1	0.340	0.340	0.340	1	SB-23	13.5-14
1,2-Dichloropropane	MG/KG	-	80	2	0.018	0.036	0.027	0	SB-19	10.5-11.5
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	8.4	80	23	0.003	36.00	3.21	2	SB-26	8-10
1,4-Dichlorobenzene	MG/KG	1.8	80	1	1.30	1.30	1.30	0	SB-23	13.5-14
2-Butanone	MG/KG	0.12	80	15	0.003	0.025	0.009	0	SB-27	22-23.5
2-Hexanone	MG/KG	-	80	1	5.30	5.30	5.30	0	SB-26	12.5-14.5
Acetone	MG/KG	0.05	80	45	0.004	0.120	0.022	5	SB-27	22-23.5
Benzene	MG/KG	0.06	80	17	0.002	26.00	1.71	8	SB-23	13.5-14
Carbon disulfide	MG/KG	2.7 CP-51	80	1	0.012	0.012	0.012	0	SB-18	3-3.5
Chlorobenzene	MG/KG	1.1	80	1	0.590	0.590	0.590	0	SB-23	13.5-14
Cyclohexane	MG/KG	-	80	5	0.005	6.20	2.14	0	SB-18	12.5-13.5
Ethylbenzene	MG/KG	1	80	24	0.003	74.00	6.84	8	SB-23	13.5-14
Isopropylbenzene	MG/KG	2.3 CP-51	80	23	0.002	4.00	0.567	1	SB-26	8-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

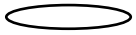
Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Methylcyclohexane	MG/KG	-	80	21	0.003	23.00	3.38	0	SB-26	8-10
Methylene chloride	MG/KG	0.05	80	11	0.002	0.010	0.004	0	SB-17	4-4.5
n-Butylbenzene	MG/KG	12	80	17	0.003	1.60	0.392	0	SB-23	13.5-14
n-Propylbenzene	MG/KG	3.9	80	23	0.003	2.10	0.476	0	SB-26	8-10
sec-Butylbenzene	MG/KG	11	80	11	0.004	0.360	0.092	0	SB-26	12.5-14.5
Styrene	MG/KG	-	80	3	0.025	8.60	2.90	0	SB-26	8-10
Tetrachloroethene	MG/KG	1.3	80	2	0.003	0.003	0.003	0	SB-27	4-4.5
Toluene	MG/KG	0.7	80	16	0.001	19.00	1.53	3	SB-26	8-10
Trichloroethene	MG/KG	0.47	80	2	0.002	0.003	0.003	0	SB-16	9-10
Xylene (total)	MG/KG	1.6	80	27	0.002	134.0	9.38	8	SB-26	8-10
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	80	23	0.250	150.0	12.97	0	SB-18	15.8-16.8
2,4-Dimethylphenol	MG/KG	-	80	1	1.80	1.80	1.80	0	SB-25	9-10
2-Methylnaphthalene	MG/KG	36.4 CP-51	80	36	0.120	340.0	30.97	6	SB-25	7.2-8.2
2-Methylphenol (o-cresol)	MG/KG	0.33	80	1	0.310	0.310	0.310	0	SB-25	9-10
3,3'-Dichlorobenzidine	MG/KG	-	80	1	0.640	0.640	0.640	0	SB-31	11.5-12.5
4-Methylphenol (p-cresol)	MG/KG	0.33	80	2	0.120	0.630	0.375	1	SB-25	9-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.


Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthene	MG/KG	98	80	43	0.080	540.0	25.27	2	SB-18	15.8-16.8
Acenaphthylene	MG/KG	107	80	42	0.091	150.0	10.57	1	SB-25	7.2-8.2
Acetophenone	MG/KG	-	80	1	0.180	0.180	0.180	0	SB-26	2.3-2.6
Anthracene	MG/KG	1000	80	53	0.076	200.0	16.13	0	SB-18	15.8-16.8
Benzaldehyde	MG/KG	-	80	1	0.220	0.220	0.220	0	SB-26	2.3-2.6
Benzo(a)anthracene	MG/KG	1	80	55	0.075	140.0	15.84	38	SB-18	15.8-16.8
Benzo(a)pyrene	MG/KG	22	80	55	0.071	150.0	12.79	6	SB-18	15.8-16.8
Benzo(b)fluoranthene	MG/KG	1.7	80	54	0.086	130.0	16.28	32	SB-18	15.8-16.8
Benzo(g,h,i)perylene	MG/KG	1000	80	53	0.078	77.00	9.16	0	SB-18	15.8-16.8
Benzo(k)fluoranthene	MG/KG	1.7	80	51	0.056	40.00	6.37	24	SB-18	15.8-16.8
bis(2-Ethylhexyl)phthalate	MG/KG	435 CP-51	80	6	0.120	87.00	15.01	0	SB-23	13.5-14
Butylbenzylphthalate	MG/KG	122 CP-51	80	6	0.073	0.130	0.090	0	SB-21	20.7-21.1
Carbazole	MG/KG	-	80	35	0.088	77.00	5.40	0	SB-25	7.2-8.2
Chrysene	MG/KG	1	80	54	0.084	130.0	14.36	38	SB-18	15.8-16.8
Dibenz(a,h)anthracene	MG/KG	1000	80	42	0.070	20.00	2.82	0	SB-18	15.8-16.8
Dibenzofuran	MG/KG	210	80	32	0.088	150.0	12.93	0	SB-25	7.2-8.2
Diethylphthalate	MG/KG	7.1 CP-51	80	1	0.071	0.071	0.071	0	MW-08B	9.5-10.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Di-n-butylphthalate	MG/KG	8.1 CP-51	80	7	0.081	0.120	0.098	0	SB-18	12.5-13.5
Fluoranthene	MG/KG	1000	80	57	0.078	460.0	36.71	0	SB-18	15.8-16.8
Fluorene	MG/KG	386	80	46	0.082	350.0	21.53	0	SB-18	15.8-16.8
Indeno(1,2,3-cd)pyrene	MG/KG	8.2	80	51	0.079	64.00	9.57	17	SB-17	4-4.5
Naphthalene	MG/KG	12	80	39	0.110	840.0	63.33	16	SB-25	7.2-8.2
Phenanthrene	MG/KG	1000	80	57	0.093	940.0	53.41	0	SB-18	15.8-16.8
Phenol	MG/KG	0.33	80	1	0.110	0.110	0.110	0	MW-02B	3.5-4
Pyrene	MG/KG	1000	80	58	0.081	600.0	37.20	0	SB-18	15.8-16.8
Metals										
Aluminum	MG/KG	-	80	80	4,790	4.29E+04	1.24E+04	0	SB-19	21.6-22.7
Antimony	MG/KG	-	80	7	0.340	2.30	0.990	0	SB-23	13.5-14
Arsenic	MG/KG	16	80	80	0.570	103.0	4.32	2	SB-30	3-3.5
Barium	MG/KG	820	80	80	39.30	719.0	116.7	0	SB-27	22-23.5
Beryllium	MG/KG	47	80	52	0.073	1.00	0.330	0	SB-19	21.6-22.7
Cadmium	MG/KG	7.5	80	17	0.024	24.60	1.98	1	SB-23	13.5-14
Calcium	MG/KG	-	80	80	843.0	6.41E+04	7,474	0	SB-17	4-4.5
Chromium	MG/KG	NS	80	80	10.70	403.0	40.93	0	SB-19	21.6-22.7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6B
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
PROTECTION OF GROUNDWATER
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cobalt	MG/KG	-	80	80	4.00	31.10	8.91	0	SB-19	21.6-22.7
Copper	MG/KG	1720	80	79	2.80	222.0	36.92	0	SB-23	13.5-14
Iron	MG/KG	-	80	80	8,840	7.50E+04	2.07E+04	0	SB-31	4-4.5
Lead	MG/KG	450	80	80	2.20	1,240	82.62	4	SB-23	13.5-14
Magnesium	MG/KG	-	80	80	1,430	6.70E+04	6,044	0	SB-19	21.6-22.7
Manganese	MG/KG	2000	80	80	83.70	1,380	336.9	0	SB-19	21.6-22.7
Mercury	MG/KG	0.73	80	50	0.002	5.00	0.404	8	SB-31	4-4.5
Nickel	MG/KG	130	80	80	8.40	408.0	38.07	4	SB-19	21.6-22.7
Potassium	MG/KG	-	80	80	706.0	1.77E+04	4,368	0	SB-19	21.6-22.7
Selenium	MG/KG	4	80	28	0.460	2.60	0.945	0	SB-16	3.2-3.6
Silver	MG/KG	8.3	80	8	0.075	0.850	0.261	0	SB-23	13.5-14
Sodium	MG/KG	-	80	80	28.00	1,770	235.7	0	SB-23	13.5-14
Thallium	MG/KG	-	80	63	0.220	5.60	1.32	0	SB-19	21.6-22.7
Vanadium	MG/KG	-	80	80	13.40	57.80	28.86	0	TP-09	3.9-4.2
Zinc	MG/KG	2480	80	80	15.20	7,040	171.8	1	SB-23	13.5-14
Miscellaneous Parameters										
Cyanide, Total	MG/KG	40	80	10	0.610	46.60	9.14	1	SB-17	4-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Restricted Use. Protection of Groundwater.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	MG/KG	-	80	2	0.001	0.003	0.002	0	SB-16	13-14
1,2,4-Trichlorobenzene	MG/KG	-	80	1	0.002	0.002	0.002	0	SB-16	13-14
1,2,4-Trimethylbenzene	MG/KG	190	80	28	0.002	76.00	7.05	0	SB-26	8-10
1,2-Dichlorobenzene	MG/KG	500	80	1	0.370	0.370	0.370	0	SB-16	18-19
1,2-Dichloroethane	MG/KG	30	80	1	0.340	0.340	0.340	0	SB-23	13.5-14
1,2-Dichloropropane	MG/KG	-	80	2	0.018	0.036	0.027	0	SB-19	10.5-11.5
1,3,5-Trimethylbenzene (Mesitylene)	MG/KG	190	80	23	0.003	36.00	3.21	0	SB-26	8-10
1,4-Dichlorobenzene	MG/KG	130	80	1	1.30	1.30	1.30	0	SB-23	13.5-14
2-Butanone	MG/KG	500	80	15	0.003	0.025	0.009	0	SB-27	22-23.5
2-Hexanone	MG/KG	-	80	1	5.30	5.30	5.30	0	SB-26	12.5-14.5
Acetone	MG/KG	500	80	45	0.004	0.120	0.022	0	SB-27	22-23.5
Benzene	MG/KG	44	80	17	0.002	26.00	1.71	0	SB-23	13.5-14
Carbon disulfide	MG/KG	-	80	1	0.012	0.012	0.012	0	SB-18	3-3.5
Chlorobenzene	MG/KG	500	80	1	0.590	0.590	0.590	0	SB-23	13.5-14
Cyclohexane	MG/KG	-	80	5	0.005	6.20	2.14	0	SB-18	12.5-13.5
Ethylbenzene	MG/KG	390	80	24	0.003	74.00	6.84	0	SB-23	13.5-14
Isopropylbenzene	MG/KG	-	80	23	0.002	4.00	0.567	0	SB-26	8-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

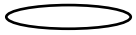
Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Methylcyclohexane	MG/KG	-	80	21	0.003	23.00	3.38	0	SB-26	8-10
Methylene chloride	MG/KG	500	80	11	0.002	0.010	0.004	0	SB-17	4-4.5
n-Butylbenzene	MG/KG	500	80	17	0.003	1.60	0.392	0	SB-23	13.5-14
n-Propylbenzene	MG/KG	500	80	23	0.003	2.10	0.476	0	SB-26	8-10
sec-Butylbenzene	MG/KG	500	80	11	0.004	0.360	0.092	0	SB-26	12.5-14.5
Styrene	MG/KG	-	80	3	0.025	8.60	2.90	0	SB-26	8-10
Tetrachloroethene	MG/KG	150	80	2	0.003	0.003	0.003	0	SB-27	4-4.5
Toluene	MG/KG	500	80	16	0.001	19.00	1.53	0	SB-26	8-10
Trichloroethene	MG/KG	200	80	2	0.002	0.003	0.003	0	SB-16	9-10
Xylene (total)	MG/KG	500	80	27	0.002	134.0	9.38	0	SB-26	8-10
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	80	23	0.250	150.0	12.97	0	SB-18	15.8-16.8
2,4-Dimethylphenol	MG/KG	-	80	1	1.80	1.80	1.80	0	SB-25	9-10
2-Methylnaphthalene	MG/KG	-	80	36	0.120	340.0	30.97	0	SB-25	7.2-8.2
2-Methylphenol (o-cresol)	MG/KG	500	80	1	0.310	0.310	0.310	0	SB-25	9-10
3,3'-Dichlorobenzidine	MG/KG	-	80	1	0.640	0.640	0.640	0	SB-31	11.5-12.5
4-Methylphenol (p-cresol)	MG/KG	500	80	2	0.120	0.630	0.375	0	SB-25	9-10

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.


Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Acenaphthene	MG/KG	500	80	43	0.080	540.0	25.27	1	SB-18	15.8-16.8
Acenaphthylene	MG/KG	500	80	42	0.091	150.0	10.57	0	SB-25	7.2-8.2
Acetophenone	MG/KG	-	80	1	0.180	0.180	0.180	0	SB-26	2.3-2.6
Anthracene	MG/KG	500	80	53	0.076	200.0	16.13	0	SB-18	15.8-16.8
Benzaldehyde	MG/KG	-	80	1	0.220	0.220	0.220	0	SB-26	2.3-2.6
Benzo(a)anthracene	MG/KG	5.6	80	55	0.075	140.0	15.84	21	SB-18	15.8-16.8
Benzo(a)pyrene	MG/KG	1	80	55	0.071	150.0	12.79	38	SB-18	15.8-16.8
Benzo(b)fluoranthene	MG/KG	5.6	80	54	0.086	130.0	16.28	21	SB-18	15.8-16.8
Benzo(g,h,i)perylene	MG/KG	500	80	53	0.078	77.00	9.16	0	SB-18	15.8-16.8
Benzo(k)fluoranthene	MG/KG	56	80	51	0.056	40.00	6.37	0	SB-18	15.8-16.8
bis(2-Ethylhexyl)phthalate	MG/KG	-	80	6	0.120	87.00	15.01	0	SB-23	13.5-14
Butylbenzylphthalate	MG/KG	-	80	6	0.073	0.130	0.090	0	SB-21	20.7-21.1
Carbazole	MG/KG	-	80	35	0.088	77.00	5.40	0	SB-25	7.2-8.2
Chrysene	MG/KG	56	80	54	0.084	130.0	14.36	4	SB-18	15.8-16.8
Dibenz(a,h)anthracene	MG/KG	0.56	80	42	0.070	20.00	2.82	20	SB-18	15.8-16.8
Dibenzofuran	MG/KG	350	80	32	0.088	150.0	12.93	0	SB-25	7.2-8.2
Diethylphthalate	MG/KG	-	80	1	0.071	0.071	0.071	0	MW-08B	9.5-10.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Di-n-butylphthalate	MG/KG	-	80	7	0.081	0.120	0.098	0	SB-18	12.5-13.5
Fluoranthene	MG/KG	500	80	57	0.078	460.0	36.71	0	SB-18	15.8-16.8
Fluorene	MG/KG	500	80	46	0.082	350.0	21.53	0	SB-18	15.8-16.8
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	80	51	0.079	64.00	9.57	19	SB-17	4-4.5
Naphthalene	MG/KG	500	80	39	0.110	840.0	63.33	1	SB-25	7.2-8.2
Phenanthrene	MG/KG	500	80	57	0.093	940.0	53.41	2	SB-18	15.8-16.8
Phenol	MG/KG	500	80	1	0.110	0.110	0.110	0	MW-02B	3.5-4
Pyrene	MG/KG	500	80	58	0.081	600.0	37.20	1	SB-18	15.8-16.8
Metals										
Aluminum	MG/KG	-	80	80	4,790	4.29E+04	1.24E+04	0	SB-19	21.6-22.7
Antimony	MG/KG	-	80	7	0.340	2.30	0.990	0	SB-23	13.5-14
Arsenic	MG/KG	16	80	80	0.570	103.0	4.32	2	SB-30	3-3.5
Barium	MG/KG	400	80	80	39.30	719.0	116.7	1	SB-27	22-23.5
Beryllium	MG/KG	590	80	52	0.073	1.00	0.330	0	SB-19	21.6-22.7
Cadmium	MG/KG	9.3	80	17	0.024	24.60	1.98	1	SB-23	13.5-14
Calcium	MG/KG	-	80	80	843.0	6.41E+04	7,474	0	SB-17	4-4.5
Chromium	MG/KG	1500	80	80	10.70	403.0	40.93	0	SB-19	21.6-22.7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4-6C
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN REMEDIAL INVESTIGATION SOIL SAMPLES
COMMERCIAL USE
CEDAR STREET WORKS FORMER MGP SITE - CONSOLIDATED EDISON COMPANY

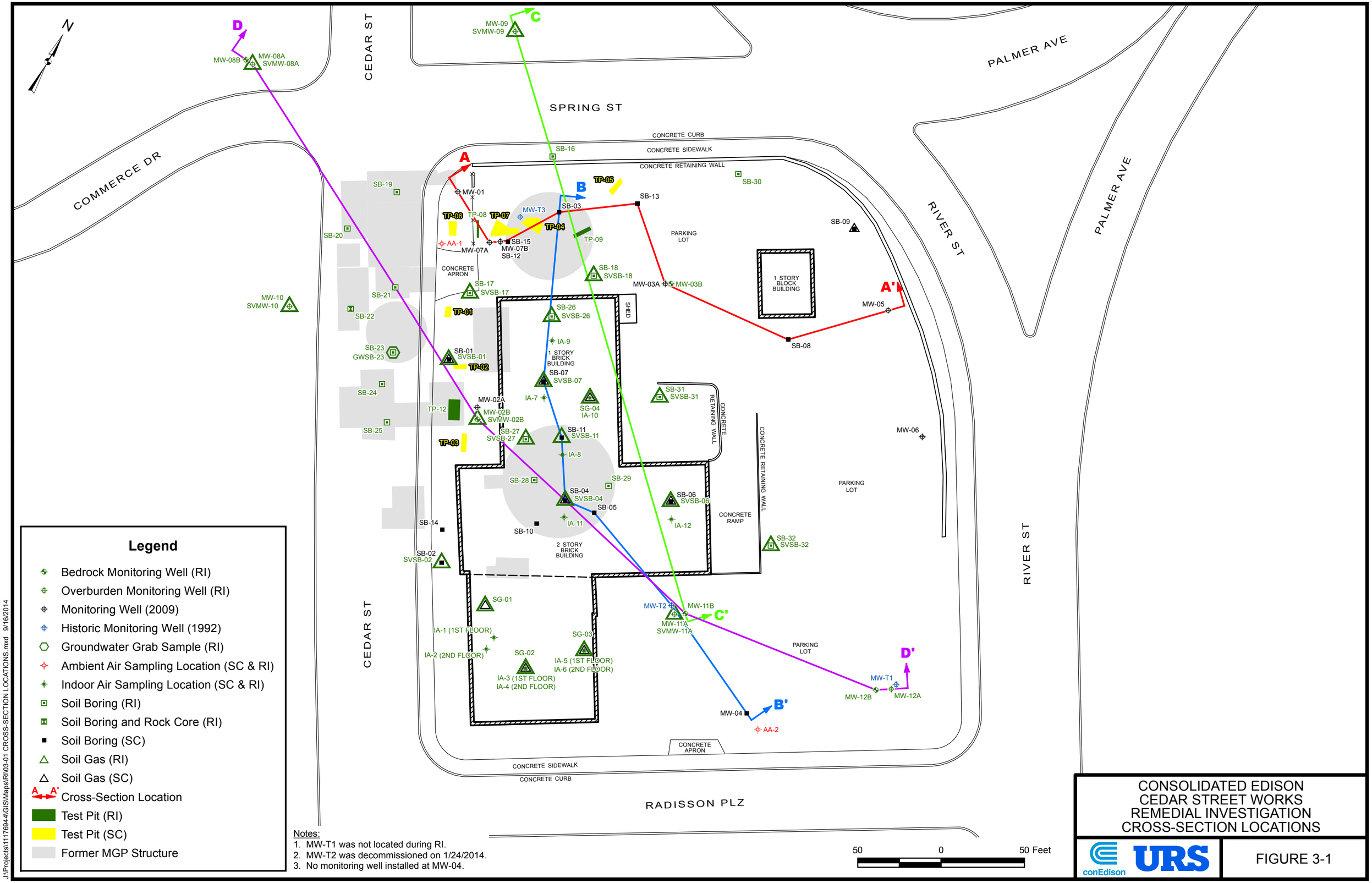
Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cobalt	MG/KG	-	80	80	4.00	31.10	8.91	0	SB-19	21.6-22.7
Copper	MG/KG	270	80	79	2.80	222.0	36.92	0	SB-23	13.5-14
Iron	MG/KG	-	80	80	8,840	7.50E+04	2.07E+04	0	SB-31	4-4.5
Lead	MG/KG	1000	80	80	2.20	1,240	82.62	2	SB-23	13.5-14
Magnesium	MG/KG	-	80	80	1,430	6.70E+04	6,044	0	SB-19	21.6-22.7
Manganese	MG/KG	10000	80	80	83.70	1,380	336.9	0	SB-19	21.6-22.7
Mercury	MG/KG	2.8	80	50	0.002	5.00	0.404	1	SB-31	4-4.5
Nickel	MG/KG	310	80	80	8.40	408.0	38.07	1	SB-19	21.6-22.7
Potassium	MG/KG	-	80	80	706.0	1.77E+04	4,368	0	SB-19	21.6-22.7
Selenium	MG/KG	1500	80	28	0.460	2.60	0.945	0	SB-16	3.2-3.6
Silver	MG/KG	1500	80	8	0.075	0.850	0.261	0	SB-23	13.5-14
Sodium	MG/KG	-	80	80	28.00	1,770	235.7	0	SB-23	13.5-14
Thallium	MG/KG	-	80	63	0.220	5.60	1.32	0	SB-19	21.6-22.7
Vanadium	MG/KG	-	80	80	13.40	57.80	28.86	0	TP-09	3.9-4.2
Zinc	MG/KG	10000	80	80	15.20	7,040	171.8	0	SB-23	13.5-14
Miscellaneous Parameters										
Cyanide, Total	MG/KG	27	80	10	0.610	46.60	9.14	1	SB-17	4-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

RIR Figures



Legend

- Bedrock Monitoring Well (RI)
- Overburden Monitoring Well (RI)
- Monitoring Well (2009)
- Historic Monitoring Well (1992)
- Groundwater Grab Sample (RI)
- Ambient Air Sampling Location (SC & RI)
- Indoor Air Sampling Location (SC & RI)
- Soil Boring (RI)
- Soil Boring and Rock Core (RI)
- Soil Boring (SC)
- Soil Gas (RI)
- Soil Gas (SC)
- A A' Cross-Section Location
- Test Pit (RI)
- Test Pit (SC)
- Former MGP Structure

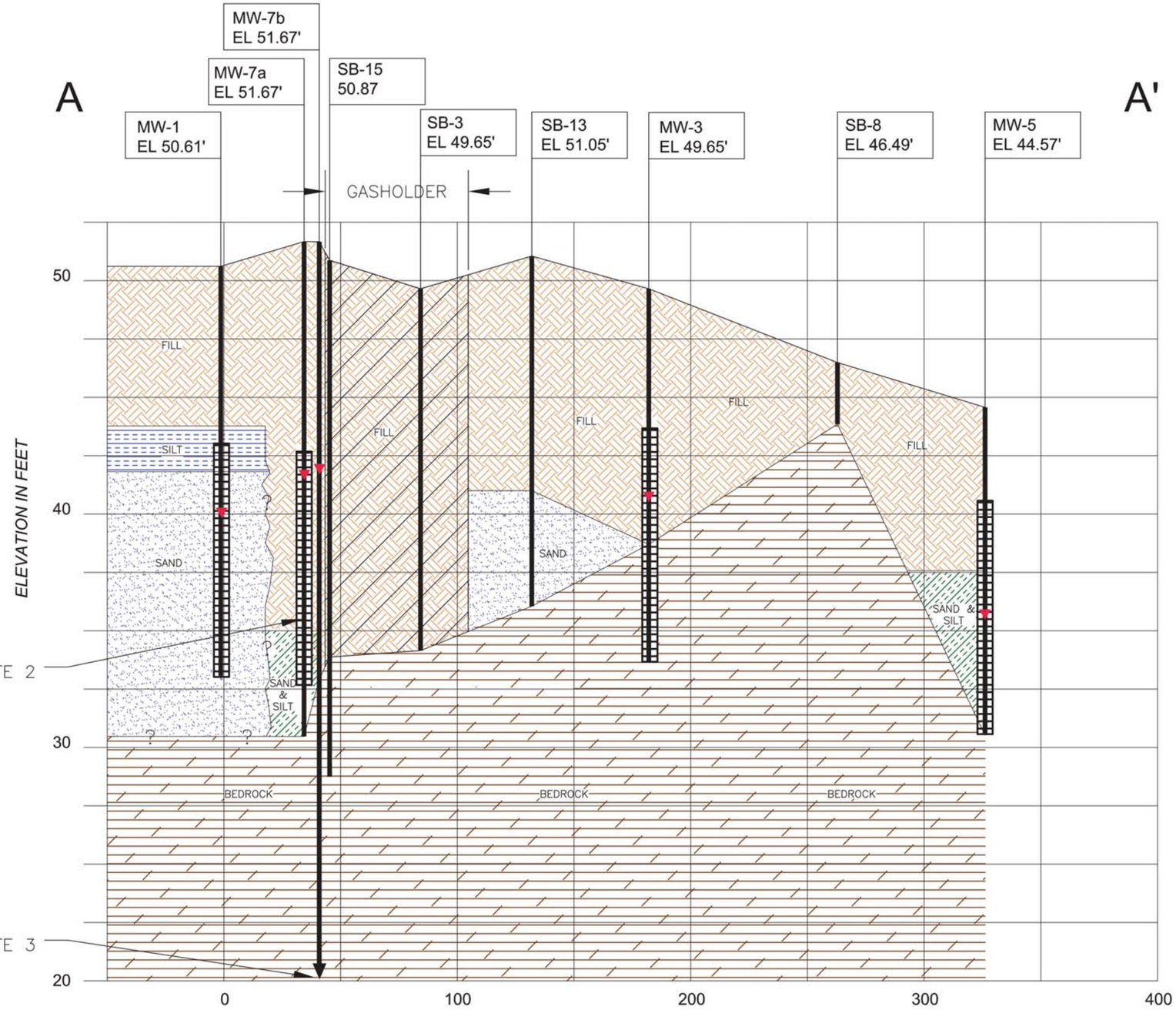
Notes:
1. MW-T1 was not located during RI.
2. MW-T2 was decommissioned on 1/24/2014.
3. No monitoring well installed at MW-04.

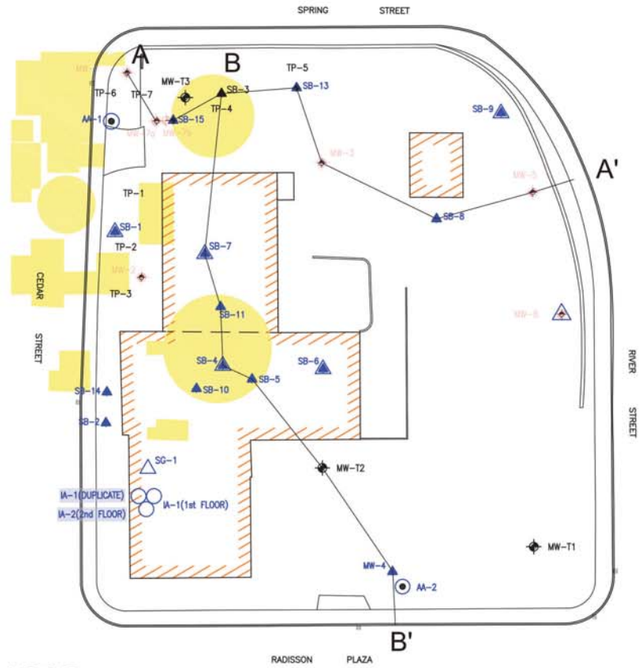
CONSOLIDATED EDISON CEDAR STREET WORKS REMEDIAL INVESTIGATION CROSS-SECTION LOCATIONS

conEdison URS

FIGURE 3-1

J:\Projects\11176944\GIS\Maps\RI\03-01 CROSS-SECTION LOCATIONS.mxd 9/16/2014





NOTES:

1. ELEVATIONS BASED ON NAVD 88.

2. NAPL WAS OBSERVED IN THE MW–7b SOIL BORING, 17–19 FT BELOW GROUND SURFACE.

3. THE TOTAL DEPTH OF MW–7b IS 43 FT. THE MONITORING WELL IS SCREENED FROM 30–40 FT BELOW GROUND SURFACE.

50 25 0 50 100

HORIZONTAL SCALE

5 2.5 0 5 10

VERTICAL SCALE

FILL (SAND, SILT, GRAVEL, BRICK, CONCRETE)

SAND

SILT

SAND & SILT

BEDROCK

GASHOLDER

WELL SCREEN FOR MONITORING WELL

SOIL BORING

ELEVATION OF WATER TABLE

SOURCE: Draft Data Summary for Site Characterization Activities at the Cedar Street Works Site; Parsons; July 2009; Figure 3

CEDAR STREET WORKS SITE CROSS SECTION A-A'

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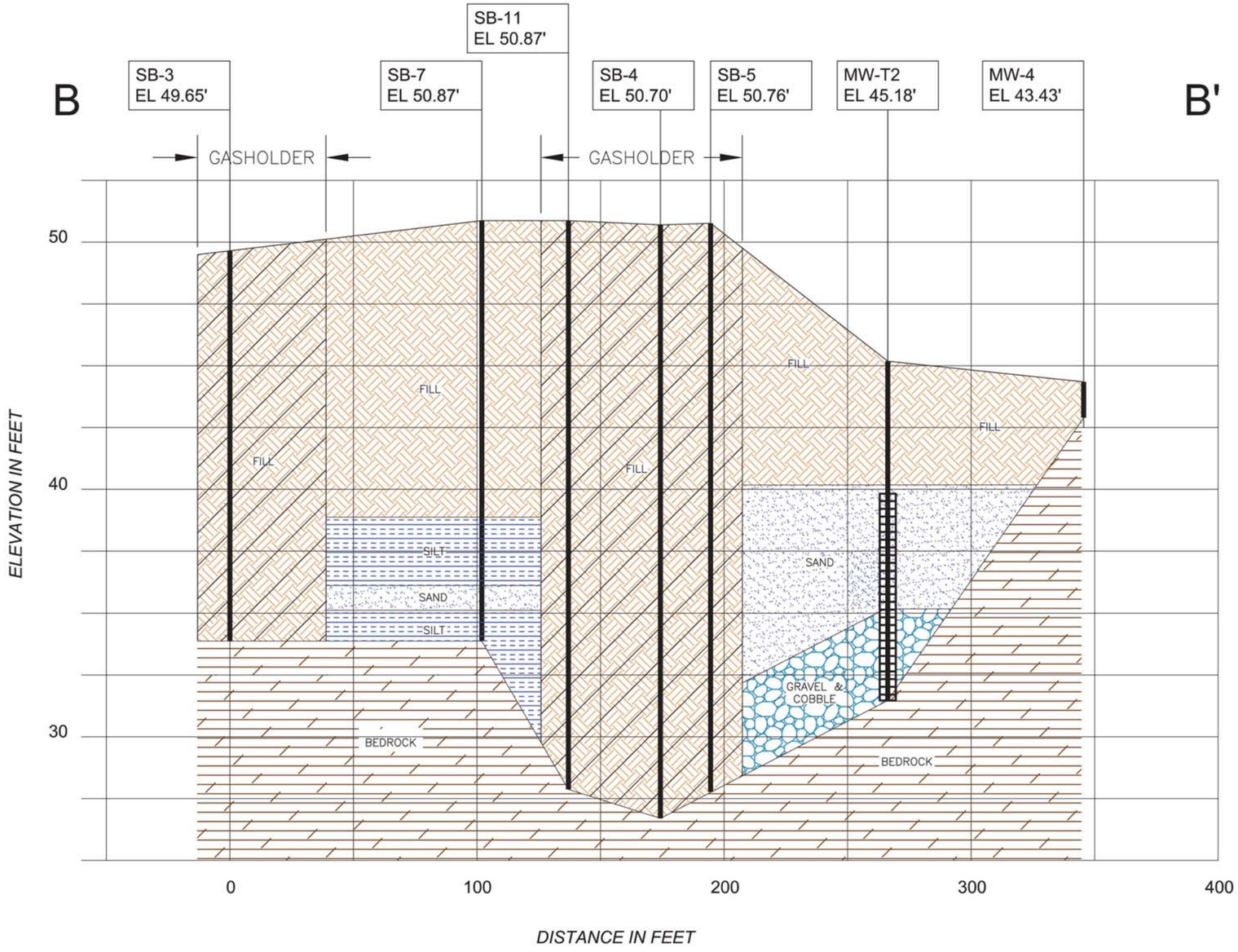
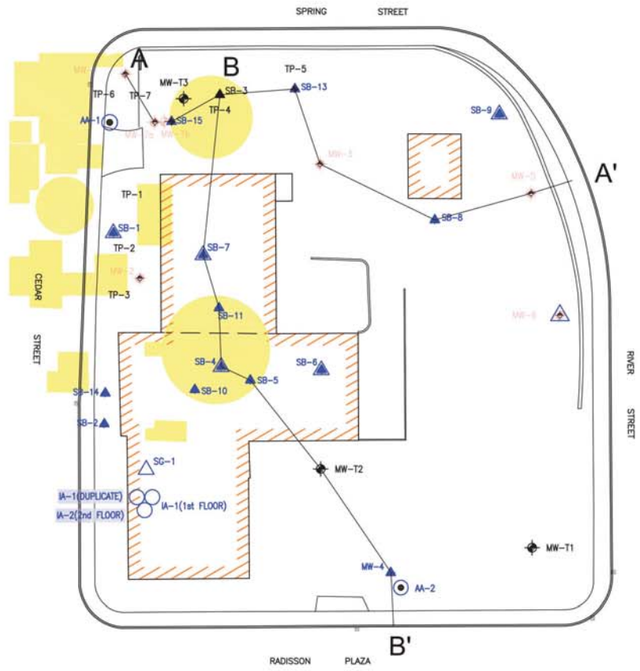
FIGURE 3-2

AG20987-1117694-081214-GCM





SOURCE: Draft Data Summary for Site Characterization Activities at the Cedar Street Works Site; Parsons; July 2009; Figure 4

CEDAR STREET WORKS SITE
CROSS SECTION B-B'

conEdison URS

FIGURE 3-3

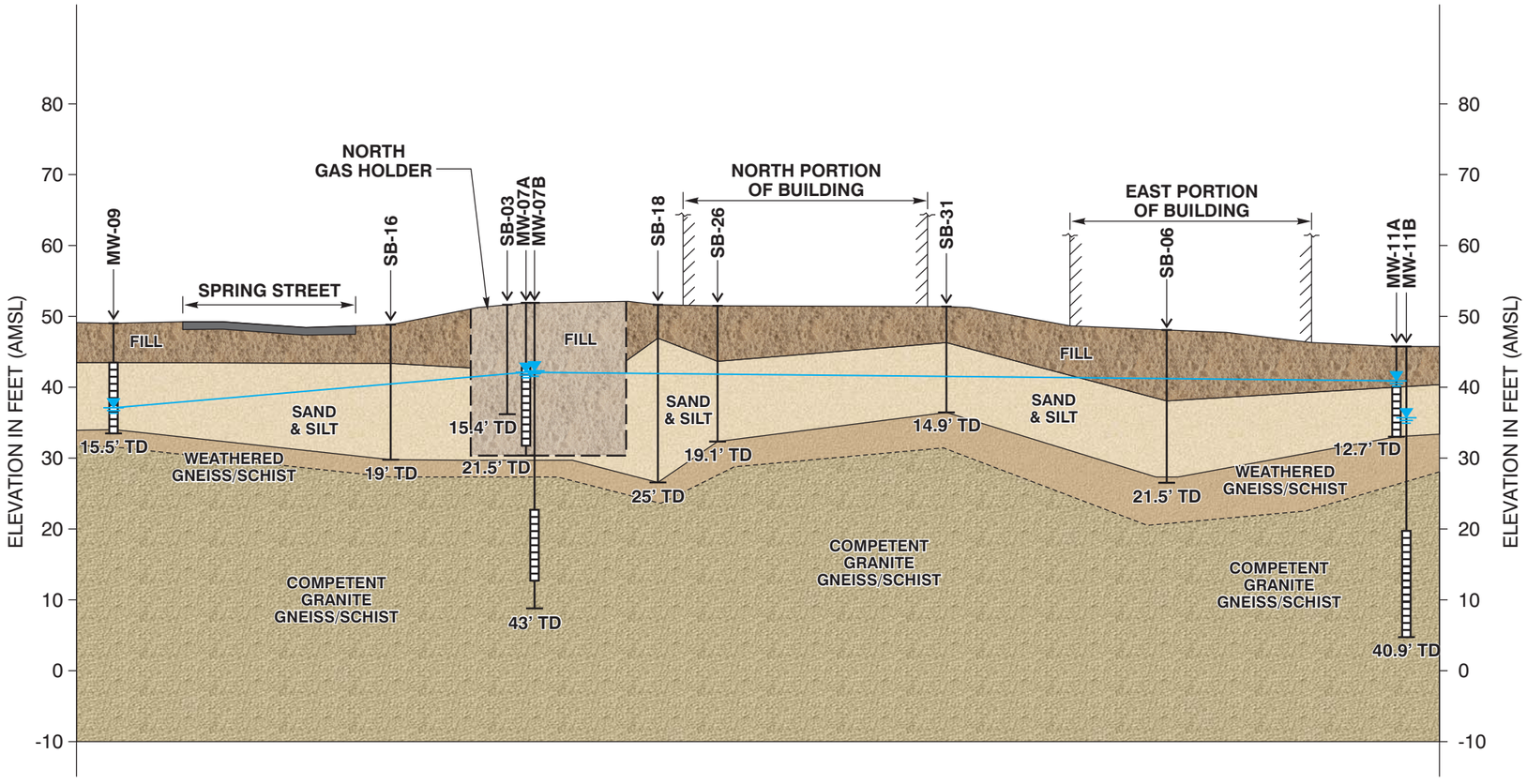
AG20988-11176944-081214-GCM

NORTH-NORTHWEST

C

SOUTH-SOUTHEAST

C'



Fill

Weathered Gneiss/Schist

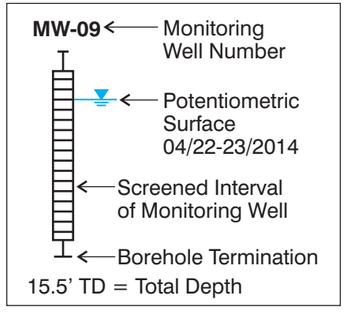
Fill Within Former Holder

Sand & Silt

Competent Granite Gneiss/Schist

NOTES:

1. Geologic conditions shown are representative of conditions encountered at each boring location to the depth drilled. Extrapolations between borings have been interpreted using standardly accepted geologic practices and principles. Actual conditions may vary between borings from those shown.
2. Elevations based on North American Vertical Datum, 1988.



Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 20'
10x Vertical Exaggeration

CONSOLIDATED EDISON
CEDAR STREET WORKS
REMEDIAL INVESTIGATION
CROSS SECTION C-C'

conEdison URS

FIGURE 3-4

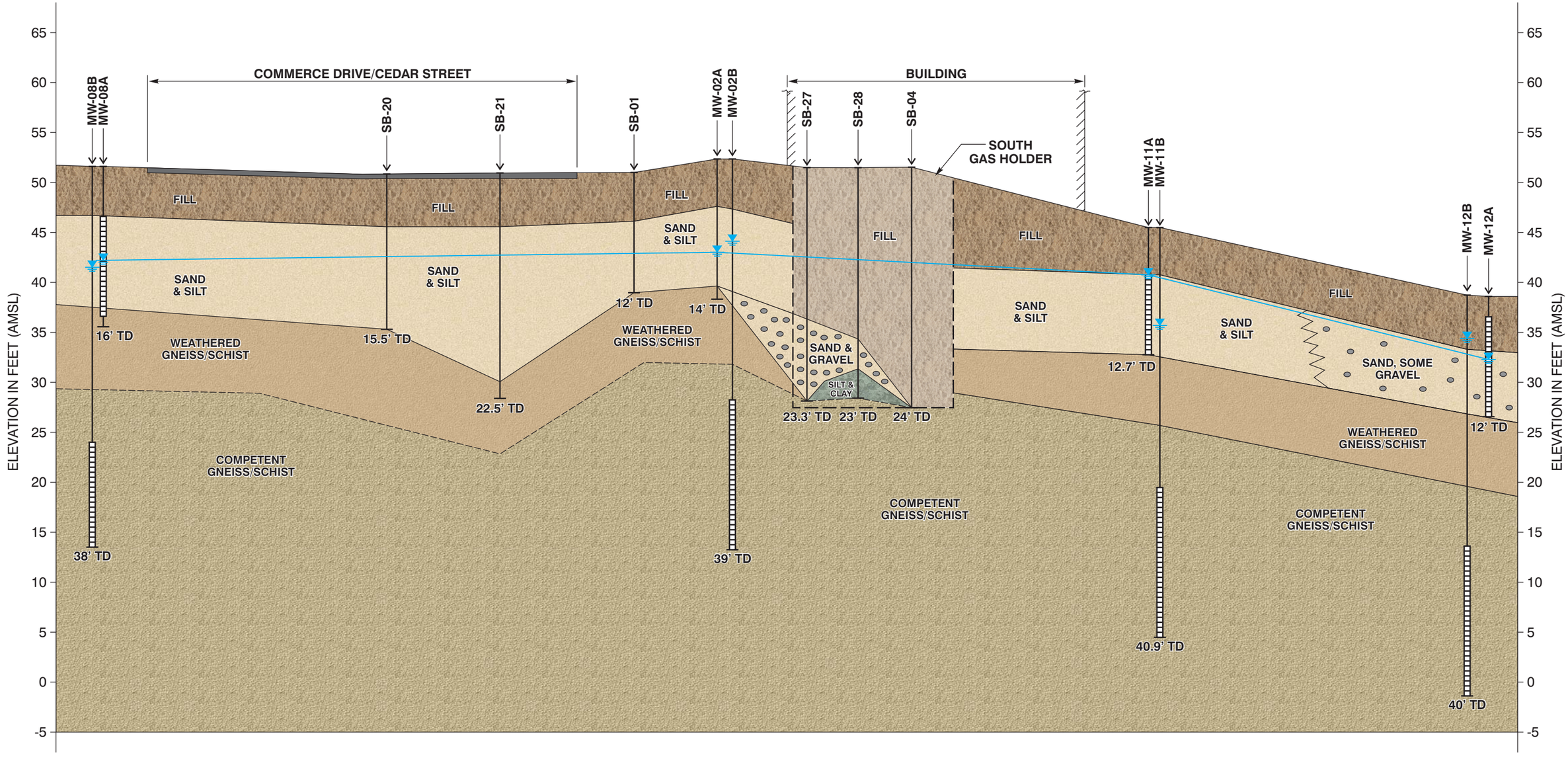
AG20994-111769944-082014-GCM

NORTHWEST

D

SOUTHEAST

D’



Fill

Weathered Gneiss/Schist

Sand & Gravel

Fill Within Former Holder

Sand & Silt

Competent Granite Gneiss/Schist

Silt & Clay

MW-02A ← Monitoring Well Number

← Potentiometric Surface 04/22-23/2014

← Screened Interval of Monitoring Well

← Borehole Termination

14’ TD = Total Depth

Horizontal Scale: 1” = 40’
Vertical Scale: 1” = 10’
10x Vertical Exaggeration

NOTES:

1. Geologic conditions shown are representative of conditions encountered at each boring location to the depth drilled. Extrapolations between borings have been interpreted using standardly accepted geologic practices and principles. Actual conditions may vary between borings from those shown.
2. Elevations based on North American Vertical Datum, 1988.

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CEDAR STREET WORKS
REMEDIAL INVESTIGATION
CROSS SECTION D-D’

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FIGURE 3-5

AG20995-111769440820l4-GCM

N

MW-08B
MW-08A
MW-09
CEDAR ST
SPRING ST
COMMERCE DR
PALMER AVE
PALMER AVE
RIVER ST
CONCRETE CURB
CONCRETE SIDEWALK
CONCRETE RETAINING WALL
SB-16
SB-19
SB-20
SB-21
SB-22
SB-23
SB-24
SB-25
SB-30
TP-05
SB-13
SB-03
MW-01
TP-06
TP-08
TP-07
TP-04
TP-09
MW-07A
SB-15
MW-07B
SB-12
PARKING LOT
SB-09
CONCRETE APRON
SB-18
MW-03A
MW-03B
1 STORY BLOCK BUILDING
MW-10
SB-17
TP-01
SB-26
SHED
MW-05
SB-08
SB-01
TP-02
1 STORY BRICK BUILDING
SB-07
SB-31
TP-12
MW-02A
MW-02B
CONCRETE RETAINING WALL
CONCRETE RETAINING WALL
MW-06
SB-27
SB-11
TP-03
SB-29
SB-28
SB-04
SB-06
PARKING LOT
SB-14
SB-10
SB-05
CONCRETE RAMP
SB-32
2 STORY BRICK BUILDING
SB-02
MW-11A
MW-11B
PARKING LOT
MW-12B
CONCRETE APRON
CONCRETE SIDEWALK
CONCRETE CURB
RADISSON PLZ
CEDAR ST
RIVER ST

50 0 50 Feet

Legend

Former MGP Structure

Boring Log Observations

Blebs, Globs, Sheen
Staining, Odor
Petroleum Impacts
Saturation & Sheens
Hardened Tar
Tar Saturated
No Observed Impacts
Petroleum Impacts
Staining & Odors

CONSOLIDATED EDISON
CEDAR STREET WORKS
REMEDIAL INVESTIGATION
QUALITATIVE OBSERVATIONS

URS

FIGURE 4-1

J:\Projects\11793445\Maps\RI\03-06 QUALITATIVE OBSERVATIONS (0-325).mxd 6/15/2014

Appendix B
Supporting Calculations

Calculation of Steady-State Pumping Rate
Thiem Analysis

		Well Type	Bedrock Well	Bedrock Well	Bedrock Well	Bedrock Well	Overburden Well	Overburden Well	Overburden Well	Overburden Well	
		Well Name	MW-02B	MW-03B	MW-11B	MW-12B	MW-10	MW-11A	MW-12A	MW-1	
		Test Date	3/25/2014	3/25/2014	3/25/2014	3/20/2014	11/15/2013	11/21/2013	3/20/2014	2/16/2009	
		Field Test Method	Well Development	Well Development	Well Development	Well Development	Well Development	Well Development	Well Development	Low Flow Sampling+L26	
		Sosil Classification	Bedrock	Bedrock	Bedrock	Bedrock	Mix of SP, SM, and SW	SM (5'), ML (0.5'), SW (2.5')	SW (7'); weathered rock (3')	ML (2'); SP (8')	
Field Data	**Equation Inputs**	**Units**									**Calculation Notes**
Approximate Steady-state depth to water s(t)	s(t)	(ft)	10.81	34.1	18.75	8.10	10.7	8.11	7.80	10.50	From the well development logs (Appendix M to the 3/2015 RIR)
Initial depth to water	s(0)	(ft)	8.60	14.38	11.90	6.60	10.6	8.10	6.50	10.49	From the well development logs (Appendix M to the 3/2015 RIR)
Saturated sandpack/open-interval length	B	(ft)	15.0	5.0	15.0	15.0	10.0	8.0	10.0	10.0	All screen lengths from well construction logs (Appendix L to the 3/2015 RIR)
Estimated radius of influence	Ro	(ft)	100	100	100	100	100	100	100	100	
Radius of pumping well/borehole	rw	(ft)	0.240	0.240	0.240	0.240	0.250	0.250	0.250	0.250	All borehole diameters from well construction logs (Appendix L to the 3/2015 RIR)
Observed Steady-State Pumping Rate, Q (gpm)	Q	gpm	1.00	0.82	0.938	0.600	0.0528	0.079	0.500	0.079	From the well development logs (Appendix M to the 3/2015 RIR)
Calculated Pumping Rate and Hydraulic Conductivity											
Calculated Steady-State Pumping Rate, Q (gpm)	Q	gpm	1.00	0.82	0.938	0.600	0.0528	0.079	0.500	0.079	
Hydraulic conductivity (Estimated K to match observed Q below)	K	(cm/sec)	2.0E-03	5.4E-04	6.0E-04	1.7E-03	3.4E-03	6.4E-02	2.5E-03	5.1E-02	
Hydraulic conductivity (conversion)	K	(ft/day)	5.6	1.5	1.7	4.9	9.7	181.4	7.1	144.6	
Hydraulic conductivity (conversion)	K	(ft/min)	3.88E-03	1.06E-03	1.17E-03	3.43E-03	6.73E-03	1.26E-01	4.90E-03	1.00E-01	

Notes:

1) Calculation based on Thiem Equation, in Kruseman, G.P., and N.A. de Ridder. Analysis and Evaluation of Pumping Test Data. International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands, 377 p. 1990.

2) If no drawdown is observed during a test:

a) enter steady state depth to water as 0.01 feet more than initial depth to water

b) calculate K

c) replace the calculated K value as a text value with a ">" symbol

d) replace the steady state depth with the actual value, same as initial depth to water

3) Results are relatively insensitive to radius of influence, which is an estimated value (it is in the log term of the Thiem equation). In most cases it should be estimated as between 100 and 500 ft. Erring toward the high side in estimating the radius of influence produces a slightly conservative (high) K estimate.

Soil Classifications

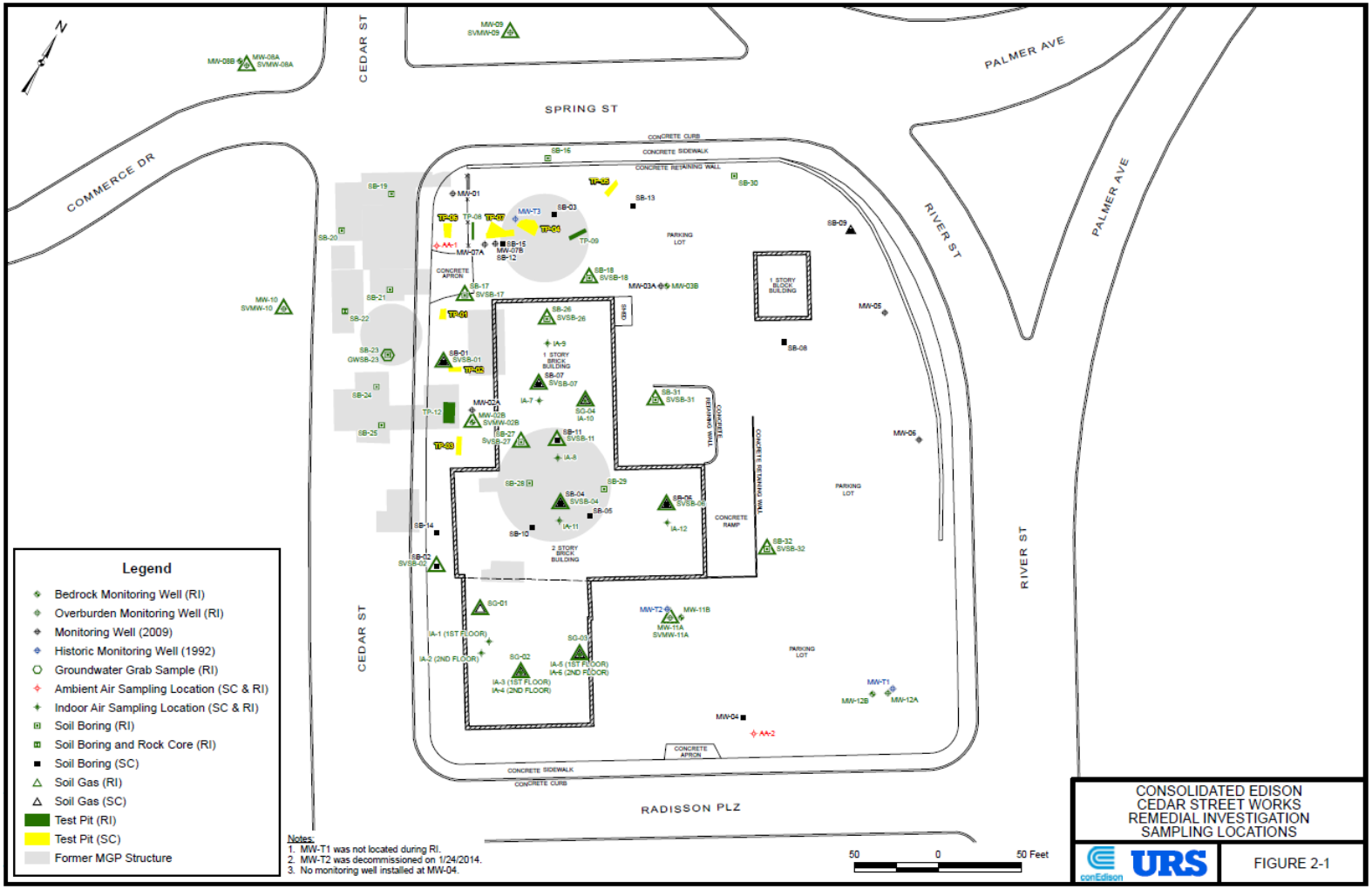
SP	Poorly-Graded Sand
SM	Silty Sand
SW	Well Graded Sand
ML	Silt Low-Plasticity

Abbreviations

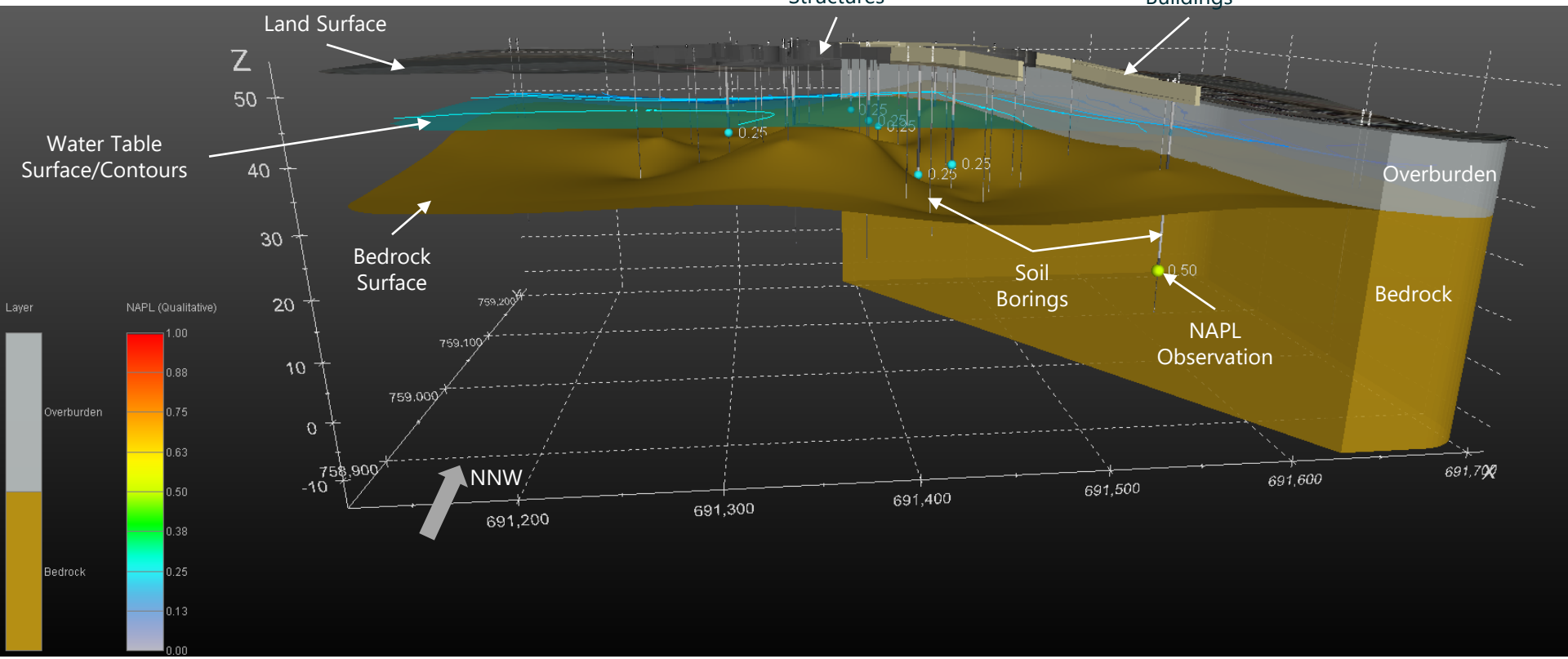
(ft)	feet
(gpm)	gallons per minute
(cm/sec)	centimeters per second
(ft/min)	feet per minute
(ft/day)	feet per day
RIR	Remedial Investigation Report prepared by URS, dated July 2017

Appendix C
Earth Volumetric Studio (EVS) Model Screen Shots

Boring Locations Used to Develop EVS Model



EVS Model - Overview

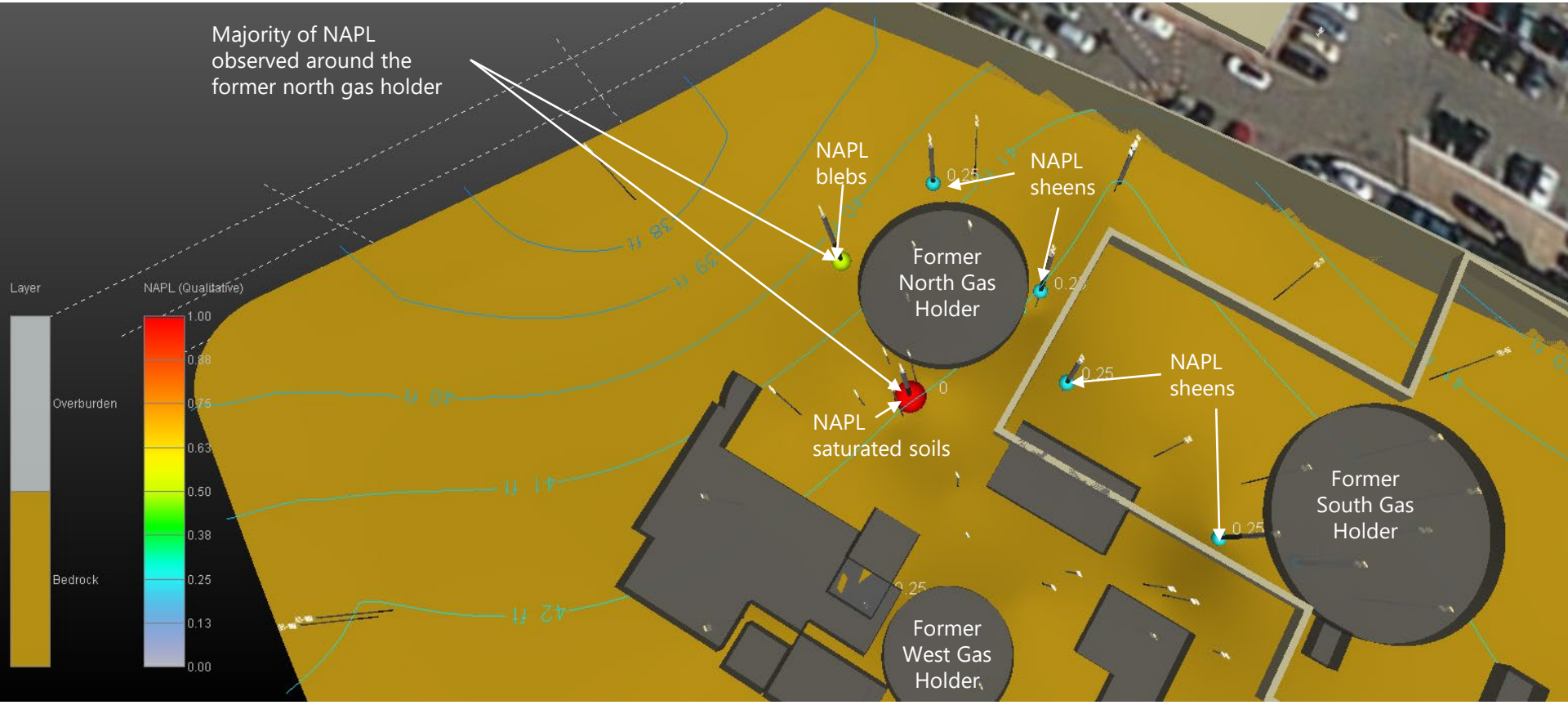


Qualitative NAPL observations are based on observations recorded on soil boring logs, as follows:

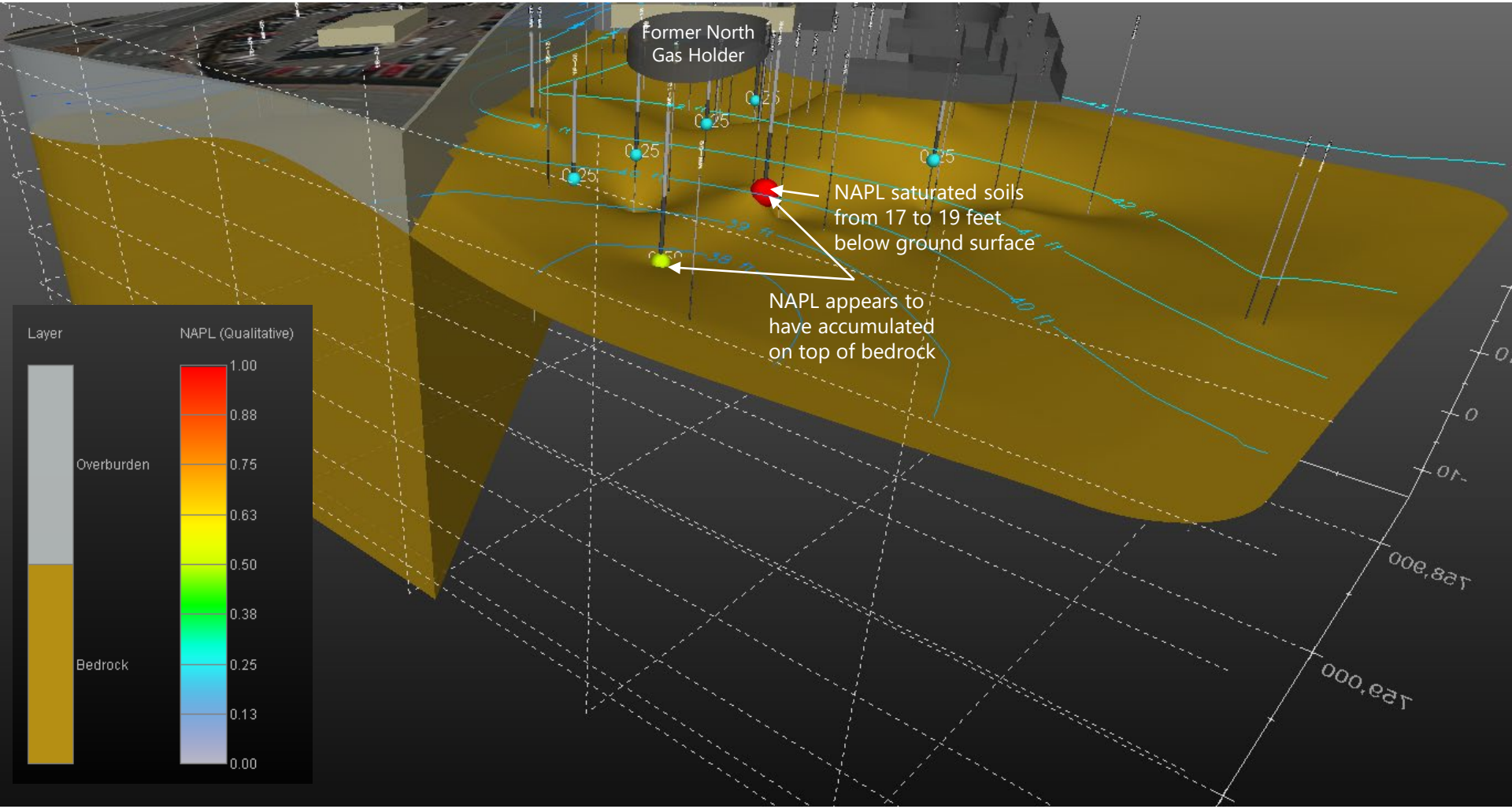
- 1.00 = Soils saturated with NAPL
- 0.50 = NAPL blebs or tar on sample tubing
- 0.25 = NAPL sheens
- 0.00 = No NAPL observed

EVS model distribution is based on assigned values for NAPL observations and kriging.

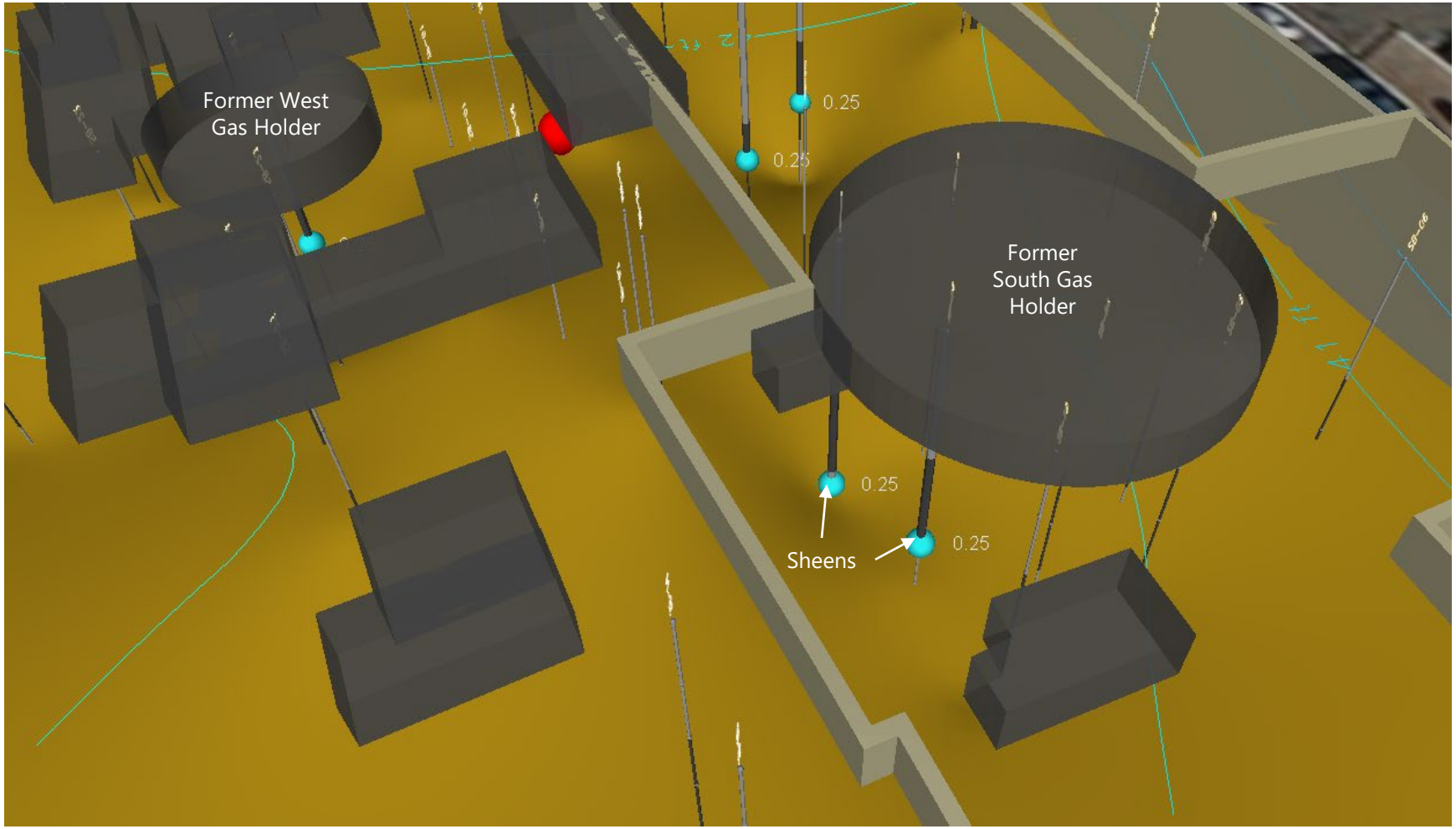
EVS Model – Looking Down on Former MGP Area



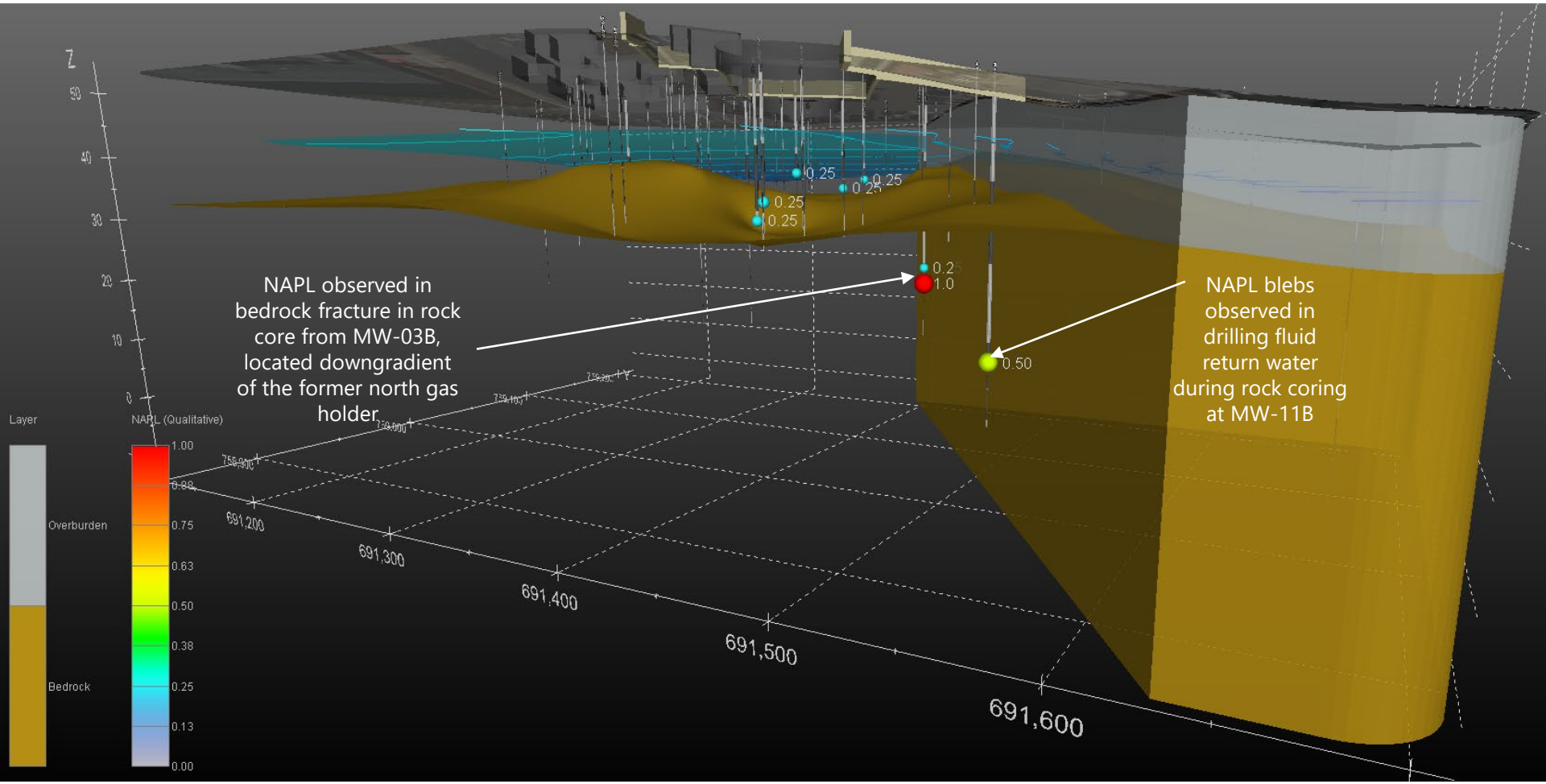
EVS Model - Looking South-Southeast



EVS Model – Looking Down on the Former South Gas Holder



EVS Model - Looking North-Northeast



EVS Model – Looking East