# FINAL Site Characterization Report

Hester Street Former Manufactured Gas Plant Site
Manhattan, New York
Site I.D No. V00528

For

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This Site Characterization Report presents the results of an investigation of the Hester Street Former Manufactured Gas Plant (MGP) Site. This work was performed in accordance with a Voluntary Cleanup Agreement between Consolidated Edison Company of New York and the New York State Department of Environmental Conservation (NYSDEC). The objectives of this project were to:

- To confirm the presence or absence of former MGP structures, to the extent practical.
- To evaluate soil and groundwater quality to determine if MGP residuals are present in the subsurface.
- To determine whether the presence of any residuals encountered could potentially pose a threat to public health and/or the environment.
- To evaluate potential migration pathways for MGP residuals and/or chemical constituents that may be related to the operations of the former MGP site, if any are encountered.
- To determine the need for supplemental data that may be necessary to adequately delineate
  the vertical and horizontal extent of soil and/or groundwater that may be impacted by MGP
  residuals, if any.
- To characterize site-specific geology and hydrology.

The site is located in the Chinatown section of Manhattan. The site occupies the northern and central portion of the city block bounded by Hester Street, Canal Street, Baxter Street and Centre Street.

The site historically operated as a MGP. Plant construction began in 1824. Gas manufacturing operations began circa 1826-1827 and ended due to a fire in 1848. Feedstock reportedly included whale oil, rosin and coal. No historical plant drawings are available.

The site is currently occupied by a commercial parking lot and two 5-story buildings with first-floor storefronts and residential apartments above. The buildings each have one basement level.

The scope of work was completed in two phases and included:

- Completion of 11 soil borings;
- Installation of 6 groundwater monitoring wells;
- Collection and analysis of 15 soil samples;
- Collection and analysis of 2 rounds of groundwater samples;
- Five rounds of water level gauging;
- Collection and fingerprint analysis of one soil sample;
- Collection and analysis of 4 soil gas sample including 2 sub-slab samples and 2 subsurface samples.

The site is underlain by approximately 10 to 20 feet of urban fill material which consists of sand, brick and concrete fragments and other debris. The fill is underlain by sand, gravel and silt layers. Gneiss bedrock is approximately 90 feet below grade.

Numerous underground utilities and structures are located adjacent to and beneath the site. These include electric, gas and communication lines beneath the sidewalks, electric service to various structures on the site and a sewer which runs beneath the western portion of the site. The Canal Street subway station complex is located beneath Centre Street immediately west of the Site.

Groundwater occurs at roughly 20 feet below grade across the most of the site. Perched groundwater conditions were noted in the northern portion of the site. Soil borings at the locations of monitoring wells MW-03 (SB-06), MW-11 and MW-12 encountered saturated soils at depths ranging from 11 to 12.5 feet below ground surface (bgs). Groundwater levels at MW-03 and MW-12 dropped to depths near or below the bottom of the screen intervals shortly after well installation. The groundwater level at MW-11 stabilized in the monitoring well at the depth of saturated soils (12.46 feet below the top of casing).

Site-wide groundwater elevations dropped by 2 to 3 feet during the course of this investigation. During the most recent round of gauging, the calculated groundwater elevations ranged from 0.16 to 3.8 feet below mean sea level.

Groundwater contour maps for the site indicate horizontal flow from the southeast and northwest toward the center of the site and from the center of the site to the southwest toward the Canal Street subway station.

The complex groundwater flow directions, rapid and large changes in groundwater levels and sitewide water table below mean sea level indicate that groundwater levels at the site are controlled by artificial features. These features likely include leaking sewers, preferential flow pathways in the fill and presumed dewatering at the subway station.

This investigation did not identify definitive MGP-related impacts such as residual coal tar. Free product was encountered at only one location. This consisted oily material with a creosote odor that was observed coating a fragment of wood at 7 to 7.1 feet below ground surface in the northwest portion of the site (soil boring SB-06). Results of a fingerprint analysis of stained soil from a different location (soil boring SB-04) indicated petrogenic source material and possible, but not definitive, evidence of pyrogenic material.

Results of the soil gas sampling detected two chlorinated compounds (trichloroethene and tetrachloroethene). These compounds are not associated with historical MGP operations.

Results of the soil and groundwater sample analyses indicated minor evidence of impacts. The greatest evidence of soil impact was observed in the northern portion of the site between 11 and 19 feet below ground surface. Soil contamination in these locations was associated with fuel oil and creosote odors.

The greatest evidence of organic groundwater impacts (i.e. volatile and/or semi-volatile organic compounds at concentrations above current groundwater standards) was observed in the sample from upgradient monitoring well MW-11. Minor groundwater exceedances were detected in the first round sample from the downgradient monitoring well MW-04. However, the second round sample from MW04 indicated only tentatively identified volatile organic compounds as exceeding groundwater standards; none of the concentrations of target volatile or semi-volatile organic compounds analyzed in this sample exceeded the groundwater standards. Metals concentrations exceeded groundwater standards in all of the groundwater samples. However, these exceedances appear to be related to background conditions associated with the urban fill materials.

Results of this investigation identified no current direct exposure routes to the contamination at the site. The soils are covered by pavement and buildings. The groundwater samples from the downgradient monitoring well did not exhibit significant impacts. No MGP-related vapors were identified.

Based on the results of this project, no further investigation is recommended at this time.

#### **SECTION 1 INTRODUCTION**

This Site Characterization Report (SCR) has been prepared by CMX, Inc. (CMX) on behalf of The Consolidated Edison Company of New York, Inc. (Con Edison) to document the results of a Site Characterization Study (SCS) at the former manufactured gas plant (MGP) property known as the Hester Street Former MGP site. The site identification number is V00528.

Con Edison has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) to investigate and, if necessary, remediate potential contamination at its former MGP sites. This SCS was planned in conjunction with the investigation of the former Canal Street works site, located just west the Hester Street former MGP. The Site Characterization Work Plan (SCWP) dated December 2003 prepared by Dvirka and Bartilucci Consulting Engineers (D&B) on behalf of Con Edison addressed both the former Canal Street Works and the Hester Street Former MGP site.

In accordance with discussions with the NYSDEC, Con Edison has separated the two sites. This report presents the results of investigation activities associated with the Hester Street former MGP (site). Results of the SCS at the former Canal Street works are presented in a separate report.

Figure 1-1 shows the location of the site. Figure 1-2 shows the site boundary relative to existing features.

#### 1.1 SITE CHARACTERIZATION STUDY OBJECTIVES

The primary goals of this Site Characterization Study were:

- To confirm the presence or absence of former MGP structure, to the extent practical.
- To evaluate soil and groundwater quality to determine if MGP residuals are present in the subsurface.
- To determine whether the presence of any residuals encountered could potentially pose a threat to public health and/or the environment.
- To evaluate potential migration pathways for any MGP residuals and/or chemical constituents that may be related to the operations of the former MGP site, if any are encountered.
- To determine the need for supplemental data that may be necessary to adequately delineate
  the vertical and horizontal extent of soil and/or groundwater that may be impacted by MGP
  residuals, if any.
- To characterize site-specific geology and hydrology.

# 1.2 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- Section 2, Site Background, presents the site description, current use, surrounding land use, site setting, history, ownership, summary of environmental records search and previous investigations.
- Section 3, Site Characterization Activities, describes the field investigation and data management activities completed during this project. This section also explains deviations from the SCWP.
- Section 4, Site Characterization Study Results, presents the results of the soil and groundwater investigation activities and the nature and extent of impacts.
- Section 5 presents the exposure assessment for the site.
- Section 6 presents the summary and conclusions drawn from this project.

- Section 7 presents a list of references.
- Section 8 lists the acronyms and abbreviations used in this report.

#### 2.1 SITE DESCRIPTION

The site is located in a heavily urbanized area of lower Manhattan known as Chinatown. Based on Con Edison documents, the grounds of the Hester Street Gas Works were located on an approximate one-half acre parcel of land consisting of eight adjacent lots bounded by the south side of Hester Street and between the east side of Centre Street and the west side of Baxter Street. The site is located on modern tax block 207, lots 5, 6, 7, 8, 10, 12, 13, 14 and 15. Figure 2-1 shows the site boundaries superimposed on a detail from the tax map of the City of New York dated February 15, 2006. Historical MGP facilities are not visible at the site. Photographs showing site conditions are included in Appendix A.

#### 2.2 CURRENT USE

The site is currently occupied by a commercial parking lot and two five-story commercial / residential buildings. The parking lot is operated by Edison Park 'n' Lock. The City's zoning code for the properties that comprise the site is M1-5B. This code "designates a wide range of manufacturing and related uses that can conform to a high level of performance standards. Manufacturing establishments of this type, within completely enclosed buildings, provide a buffer between Residence (or Commercial) Districts and other industrial uses which involve more objectionable influences. New residential development is excluded from these districts, except for joint living-work quarters for artists in M1-5B districts, where authorized by the City Planning Commission, both to protect residences from an undesirable environment and to ensure the reservation of adequate areas for industrial development." The building classes as listed on the New York City Tax Assessment website are summarized as follows:

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The property is currently identified by the following Blocks and Lots on the Tax Map for the Borough of Manhattan. See Figure 2-1 for the locations of these blocks and lots.

- 1. Block 207, Lots 6, 7, 8, and 10- also known as 204 Hester Street
- 2. Block 207, Lot 12- also known as 202A Hester Street
- 3. Block 207, Lot 13- also known as 200 Hester Street
- 4. Block 207, Lot 14- also known as 128 Baxter Street
- 5. Block 207, Lot 15- also known as 126 Baxter Street

Onsite Tax Lots 6, 7, 8, and 10, along with offsite Tax Lot 5, comprise the parking lot. (Tax Lot 5 is located south of the historical MGP site boundary.) The parking lot contains a multi-tiered car hydraulically-operated parking system. The parking attendants' office is located near the corner of Hester Street and Centre Street. A small storage shed is also located in this area of the parking lot property. The parking lot is asphalt-paved. A fence extends along portions of Hester, Canal and

Baxter Streets. The fence is composed of a variety of materials including chain-link, wood and wrought iron. The parking lot is open on Centre Street which provides access from the street.

The two (2) buildings located on Lots 13 and 14 are brick commercial/residential. Tenants occupy the various commercial operations located on the ground floor of these buildings and residential apartments above.

#### 2.3 SURROUNDING LAND USE

The area within a ¼-mile radius of the former MGP site is highly urbanized and consists of a mixture of commercial and residential properties. Commercial/residential properties are present along the south and east sides of Canal Street and Baxter Street and along both the east and west sides of Centre Street. At the time of this project, the adjacent property to the south was undergoing demolition.

The properties within a ¼-mile radius of the site are identified by various manufacturing and commercial zoning codes including M1-5B, C6-1, C6-4, C6-1G and C6-2G. The M1 code is described above. According to the New York City Department of City Planning the C6 commercial zoning codes refer to General Central Commercial Districts that are "designed to provide for the wide range of retail, office, amusement service, custom manufacturing, and related uses normally found in the central business district and regional commercial centers but to exclude non-retail uses which generate a large volume of trucking." The surrounding properties consist of the following:

- To the north, commercial/residential properties along the north side of Hester Street, including the De Soto School (Public School No. 130) on the northeast corner of Hester and Baxter Streets;
- To the west, commercial/residential properties along the west side of Centre Street;
- To the south, adjoining commercial/residential properties; and,
- To the east, commercial/residential properties along the east side of Baxter Street.

#### 2.4 SITE SETTING

As noted in the SCWP, where not disturbed by anthropogenic activities, the site is underlain by Pleistocene Epoch glacial sediments deposited as outwash (Perlmutter and Arnow, 1953). These sediments consist of well sorted interbedded gravel, sand, silt, and clay strata.

Bedrock, classified as Member C of the Manhattan Formation (Baskerville, 1990), was estimated to be between approximately 45 and 130 feet bgs at the site (Office of the President, Borough of Manhattan Topographical Bureau, 1944). Bedrock was encountered at 90 feet bgs in the onsite stratigraphic boring discussed later in this report. Member C of the Manhattan Formation is a metamorphic rock of Cambrian age and is composed of layered sillimanite-muscovite-bioitite-kyanite schist and gneiss; tourmaline-garnet-plagioclase-biotite-quartz schist and gneiss; and, amphibolite (Baskerville, 1990). The site is situated approximately 1,000 feet south of the Cameron's Line thrust fault. Bedrock in the vicinity of the site has been mapped as dipping moderately (35 degrees) approximately west-northwest.

Groundwater occurs between approximately 11 and 20 feet bgs. Groundwater flow direction determined during site characterization field activities appears to be influenced locally by the nearby

subway tunnels and other underground manmade features. The location of the subway station is shown in Appendix B. Figure 1-2 shows the approximate location of underground utilities that cross the site. The relative location of underground manmade features and groundwater levels are shown on the geologic cross-sections discussed in Section 3.4.

According to the SCWP (D&B, 2003), Federal database records indicate one public supply well generally located (no address specified) approximately ¼ to ½ mile southwest of the site. This well was not identified in the New York state database records for well information. The existence of this well has not been confirmed.

The nearest perennial surface water bodies are the East River and the Hudson River, which are located more than  $\frac{1}{2}$  mile to the southeast and west, respectively.

#### 2.5 SITE HISTORY

The history of the site was previously presented in the report entitled, "MGP Research Report, Hester Street Gas Works," dated November 13, 2002, herein referred to as the MGP Research Report. The MGP Research Report documents the investigation of available information for former MGP sites that were identified as operated by either Con Edison or predecessor companies of Con Edison. The objective of the MGP research was to gather sufficient information to rank and prioritize each MGP site for future investigation under a VCA between Con Edison and the NYSDEC.

The information presented in the MGP Research Report included a description of the property, the site setting (zoning, demography, topography, geology and hydrogeology), past ownership, past site operations, and a summary of environmental/regulatory agency records. The MGP Research Report included a review of information obtained from the following sources:

- Con Edison's internal files:
- Chain-of-title search;
- Brown's Directories:
- Public Service Commission Reports:
- Environmental data base search;
- Historical Sanborn Fire Insurance Company (SFI) maps;
- Historical aerial photographs;
- United States Geological Survey (USGS) topographic maps;
- Public Service Commission Reports;
- City Register for tax block and lot information
- New York City Fire Department Records;
- New York City Department of Buildings;
- New York Public Library

As part of the research project, requests were made for records under the Freedom of Information Act (FOIA). No response was received from the following sources during the 2002 collection of historical data for the MGP Research Report:

- New York City Department of Health (NYCDOH), Bureau of Environmental Investigations
- NVSDEC
- New York State Department of Health (NYSDOH)

Figure 1-2 is a current site map showing the existing structures. According to the MGP Research Report, the former MGP site occupied approximately one half acre and no historical information documenting specific site use prior to the establishment of the former MGP could be identified. Construction began on the Hester Street site by the New York Gas Light Company in 1824. By 1825, gas transmission lines were installed from the Hester Street Former MGP to approximately 300 customers from Wall Street to Grand Street. By 1826 an 18,000-cubic foot gas holder (gasometer) had been constructed as well as four benches of six retorts each, and several oil storage tanks. The oil tanks were reportedly for the storage of whale oil. Gas was produced by the destructive distillation of the whale oil. In 1829, the fuel feedstock for the manufacturing of gas was changed from whale oil to rosin, which was produced from distillation of crude resin from pine trees. During the next several years, coal was used as the primary feedstock, for the gas manufacturing process. However, rosin reportedly continued to be used up until 1848 when the Hester Street Former MGP was consumed by fire.

According to the MGP Research Report MGP operations at the site ceased in 1848. The historical operations predate the earliest available SFI maps for the area (circa 1894), and there is no known site plan for either the former MGP or the type and location of the former MGP structures that may have been present at the site. Subsequent to the destruction of the site the property was made available for development, with the parking lot operations arising from the use of this vacant lot.

No information is available regarding the specific gas manufacturing process(es) used at the site. However, typical residuals that could have been generated at the MGP include tars, purifier residuals (wood, lime or other solids), clinkers (ash-like material), condensates (liquids) and oils. According to the MGP Site Research Report, there is no available information concerning how these residuals might have been managed, stored or disposed, either onsite or offsite. Accordingly, the potential presence or type of MGP-generated subsurface contamination, if any, could not be determined through available sources.

# 2.6 SITE OWNERSHIP

According to the MGP Research Report, no information is available on the ownership of the site prior to MGP operations. Based on the MGP Research Report, the New York Gas Light Company owned the former MGP until 1849 when deed records indicate that the company sold the property to various private individuals. These lots changed hands multiple times and were owned at various times by private individuals, realty companies, holding companies and trusts.

Table 2-1 identifies current owners of record for the lots on Tax Block 207 including the site and adjacent offsite areas.

#### 2.7 ENVIRONMENTAL RECORDS SEARCH SUMMARY

A computer search of state and federal environmental data records for the site was conducted by Environmental Data Resources, Inc. (EDR) as part of the MGP Research Report dated November 2002. This section presents a summary of the results of the database search.

The following environmental records were identified by the database search as being in the vicinity of the MGP site. It should be noted, however, that the inclusion of a facility on these databases does not indicate that any release, spill or other violation has occurred if it is not otherwise noted:

 According to the EDR report, sixty-seven (67) sites in the Leaking Underground Storage Tanks (LTANKS) database are located within a ½-mile radius of the site. The majority of these sites (53) were located at distances greater than ½ mile from the former MGP site. EDR reported that most of the incidents associated with these sites are minor spills, overfilling of tanks, failure of tank integrity tests and staining observed beneath former tanks that were removed;

- Nine (9) sites were listed on the Large Quantity Generator (RCRIS-LQG) database mapped within ¼ mile of the MGP site:
- Sixteen (16) sites were listed on the underground storage tank (UST) database mapped within ½ mile of the MGP site, and
- Three (3) sites were included on the Facility Index System/Facility Identification Initiative Program (FINDS) and RCRIS-LQG databases:
  - a. The NYC Transit Authority-Canal Street Station is listed as having no violations found, located at Canal and Centre Streets:
  - b. The Canal Street on the Hudson site is listed on the Emergency Response Notification System (ERNS) database
  - c. Manhole TM0079 is included on the New York Spills database. The manhole was reported to have a spill involving the release of four (4) gallons of an unknown petroleum product in January of 2004.

# 2.8 PREVIOUS INVESTIGATIONS

Con Edison contacted the Metropolitan Transportation Authority (MTA) Engineering Department regarding the Site Characterization Study due to the close proximity of the Canal Street Station complex. MTA provided access to microfiche records of the station construction, indicating that the station wall extended to the property line and underneath a portion of the properties on the west side of Centre Street. A plan of the station supplied by MTA is attached as Appendix B.

With the exception of the historical research presented in the MGP Research Report (see Section 2.5, no previous environmental investigations have been reported for the site. According to the MGP Research Report, no environmental reports or associated investigations were identified for the site.

# **SECTION 3 SITE CHARACTERIZATION ACTIVITIES**

The SCS was completed in two phases. Fieldwork for the first phase was performed between October 27, 2006 and January 24, 2007. The second phase consisted of supplemental soil, groundwater and soil gas sampling to address data gaps identified during the first phase. Fieldwork for the second phase was performed between January 9 and February 19, 2008. The following tasks were implemented during both phases:

- 1. Access and Permitting
- 2. Underground Utility Clearance
- 3. Community Air Monitoring
- 4. Subsurface Soil Sampling
- 5. Soil Gas Sampling
- 6. Groundwater Monitoring
- 7. Site Survey
- 8. Management of Investigation-Derived Waste (IDW)
- 9. Site Restoration
- 10. Laboratory Analysis
- 11. Data Validation and Evaluation

The scope of work for the first phase of the investigation was described in the SCWP (D&B, 2005), however the property owner would not allow test pits to be completed at this time. The scope was modified based on site-specific conditions as described in this report. Preliminary results of the first phase were presented to NYSDEC by letter dated August 29, 2007 and a recommendation to remove the test pits and add soil borings and monitoring wells was accepted by NYSDEC. The second phase was implemented in accordance with Con Edison's recommendations as described in the letter and discussions with NYSDEC. The following sections describe the scope of SCS tasks and observations.

# 3.1 ACCESS AND PERMITTING

Field activities for the SCS required access agreements with the owner of the parking lot and buildings that are located on the site. The owner is identified as both "180 Centre Street Properties, LLC," and "Baxter Street Properties," both with an address of 100 Washington Street in Newark, New Jersey. The property owner provided access for work in the parking lot and the building basements. Sidewalk permits were provided by the City of New York for monitoring well installations on Baxter Street and obtained by the drilling contractor, Aquifer Drilling and Testing, Inc (ADT). Copies of the sidewalk and road opening permits are included in Appendix C.

Prior to both phases of fieldwork, Con Edison and CMX met in the field with representatives of the property owner and observed each of the proposed sampling locations. The meeting for Phase 1 took place on October 18, 2006, and the meeting for Phase 2 took place on January 9, 2008.

#### 3.2 UNDERGROUND UTILITY CLEARANCE

# 3.2.1 Utility Clearance Procedures

In accordance with Con Edison's Utility Clearance Process for Intrusive Activities, the following utility clearance procedures were implemented prior to beginning intrusive site work:

 A telephone call request to the Dig Safe New York One Call Center for New York City/Long Island, in accordance with the 16 New York City Rules and Regulations (NYCRR) Code 753 requirements;

- 2. Haeger-Richter Geophysics, Inc (H-R) and Enviroprobe Services Inc (Enviroprobe) was contracted to use various subsurface scanning instruments to clear the onsite and offsite boring and monitoring well locations:
- 3. Hard copies of available utility plates, drawings, and/or maps were obtained from City of New York Department of Environmental Protection (NYCDEP), and Con Edison for review, and;
- 4. Soft dig/hand clearing of the first five feet at each location to confirm the absence of underground utilities.

## 3.2.2 Utility Clearance Observations

#### 3.2.2.1 One Call

The one call center was contacted prior to mobilization. The mark outs were renewed as necessary prior to each remobilization during the course of the field project.

# 3.2.2.2 Geophysical Survey

#### Phase 1 Investigation

The Phase 1 geophysical survey was performed on October 27, 2006. H-R surveyed the exterior locations indicated on the Proposed Sample Location Map. Locations SB-02 and SB-03 could not be surveyed because access into the basements of the buildings had not been obtained at that time.

The geophysical survey was conducted using two geophysical methods: ground-penetrating radar (GPR) and precision utility locating (PUL). A comprehensive geophysical survey of the overall site could not be completed because the onsite parking lot activities were active throughout the investigation. The GPR and PUL surveys were completed across 20-foot diameter areas around each of the proposed boring and monitoring well locations.

During the initial survey H-R identified numerous unmarked underground utilities including electric, water and gas lines located near proposed boring and well locations. Underground water lines and electric lines were identified along near proposed monitoring well locations MW-01 and MW-07. These wells relocated accordingly. Possible underground utilities and obstacles were also identified near proposed soil borings SB-05 and SB-06. Soft dig in these areas revealed a large pad, 1 to 2 feet bgs that appears to be associated with an advertising billboard. The proposed borings were relocated to avoid the underground features identified during the survey. Section 3.2.3 summarizes the relocations.

# Phase 2 Investigation

A similar geophysical survey was performed on January 9, 2008, prior to intrusive activities for Phase 2. The geophysical survey for Phase 2 was performed by Enviroprobe and included proposed drilling locations MW-11 through MW-14 and SG-3. No geophysical anomalies were identified at the MW-11 location. Possible unmarked underground electric lines extending from the parking lot attendants' office were identified near MW-12. Linear anomalies were identified approximately 3 to 5 feet in all directions from MW-13 and MW-14. The field team concluded that these anomalies were underground sewer and electric lines.

# 3.2.2.3 Review of Drawings

On October 27, 2006 Con Edison provided of the street utility diagrams for Baxter, Centre and Hester Streets. These drawings were reviewed by CMX personnel to identify possible underground utilities

and/or obstacles and to confirm the results of the geophysical survey. The drawings were also reviewed in conjunction with the mark-outs on January 14, 2008, prior to the Phase 2 investigation.

# 3.2.2.4 Soft Dig/Hand Clearing

# Phase 1 Investigation

Soft dig activities began on October 30, 2006 at boring location SB-07. This work as performed by ADT using a vacuum excavation system (Vactron™) and hand tools in accordance with Con Edison's site specific Health and Safety Plan. Proposed soil boring locations SB-07, SB-01 SB-06, SB-04 and SB-05 as well as monitoring well MW-07 were all successfully cleared to at least five (5) feet bgs prior to subsurface evaluation on November 1, 2006. Indoor locations SB-02 and SB-03 were cleared after access had been granted on November 8, 2006. The installation of SB-03 could not be cleared due to the presence of possible asbestos-containing floor tiles in the basement of the building at 126 Baxter Street.

# Phase 2 Investigation

Field equipment for the soft dig was mobilized to the site on January 14, 2008. On that date the field team noted that the underground electric utility mark-outs did not appear to be complete within the adjacent streets. Work was halted until a complete mark out was confirmed. At the end of the day Con Edison electric confirmed that they had inspected the locations and did not mark the utilities beneath the street because the intrusive work was proposed for the sidewalks only.

Soft dig activities proceeded on January 15, 2008, in the same manner as described above for Phase 1. Soft dig began at the location for MW-13. An unmarked 2-inch diameter metal pipe was encountered at this location. Soft dig/hand clearing was also completed at the locations for MW-11 and MW-14 on this date. On January 16, 2008 hand clearing was completed at MW-12 and began at location SG-3. Hand clearing at SG-3 was temporarily halted when a bone was discovered. Con Edison contacted the police department and a security specialist was dispatched to investigate. The security specialist removed the bone and soft dig continued. No additional bones were discovered to the soft dig completion depth of five feet below grade. On January 18, 2008, MW-13 was relocated two feet to the east to avoid the pipe encountered on January 15. However, work was halted at this location at the direction of an inspector from the MTA Locations MW-13 and MW-14 were subsequently determined to be too close to the subway wall to be completed.

# 3.2.3 Summary of Relocations

The following investigation locations were adjusted as a result of the utility clearance and/or access restrictions.

- During the geophysical survey MW-07 was relocated approximately twenty (20) feet to the south to avoid a water line and damage to newly laid tiles in the sidewalk in front of 123 Baxter Street:
- During the geophysical survey MW-01 was relocated approximately twenty (15) feet to the north to avoid potential utility lines;
- Potential utilities and subsurface obstacles were identified near proposed soil boring locations SB-05 and SB-06, accordingly SB-06 was relocated approximately three (3) feet to the east and SB-05 approximately five (5) feet to the southwest;
- MW-12 was relocated approximately six (6) feet east to avoid a potential underground electric line and the planned location for a new electric duct bank;

- MW-13 was initially relocated approximately 8 feet north of the proposed location to avoid a building overhang. During the soft dig, MW-13 was relocated approximately two (2) feet to the east to avoid an unidentified 2-inch metal pipe, and;
- MW-14 was offset approximately three (3) feet west from its original proposed location to avoid underground gas, electric and sewer lines as well as basements which a property owner indicated extend horizontally approximately 6 feet beyond the storefronts on Centre Street.

#### 3.3 COMMUNITY AIR MONITORING

The air in the vicinity of the intrusive locations was monitored for organic vapors and dust in accordance with the Community Air Monitoring Plan (CAMP). The CAMP was presented in the SCWP.

Monitoring for organic vapors and dust in air was conducted during the soft dig, soil boring and monitoring well drilling activities. At the start of work, air-monitoring stations were established upwind of the work activities and at the downwind perimeter of the work zone. Wind direction was determined using a streamer.

# 3.3.1 Organic Vapor Monitoring

Monitoring for organic vapors was conducted continuously at the upwind and downwind stations using MiniRae2000 photoionization detectors (PID). The PIDs calculated 15-minute running average concentrations and were equipped with audible alarms.

#### 3.3.2 Dust Monitoring

Air monitoring for dust was conducted using a real time particulate monitor that measured the concentration of airborne respirable particulates less than 10 micrometers in size (PM10). The monitor calculated 15-minute running average concentrations and was equipped with an audible alarm to indicate exceedances of action levels.

# 3.3.3 Monitoring Procedures

Manual monitoring for organic vapors and dust was conducted at the start of each workday and when wind direction changed to confirm background conditions. Perimeter and workspace air was also monitored on a regular basis by the sampling team. Measurements of organic vapors were available onsite for review. Appendix D presents the electronic data recorded by the CAMP PIDs and dust monitors during this project.

#### 3.4 SOIL BORING PROGRAM

Soil borings were attempted at the following eleven (11) locations across the site. Sample locations are shown on Figure 3-1.

- SB-01/MW-01 was advanced using hollow-stem auger (HSA) drilling techniques to the target depth of 30 feet bgs.
- SB-02/SG-1 was advanced using hand tools to the target depth of 10 feet below the basement floor.
- SB-04 was advanced using mud rotary drilling techniques to bedrock at 89.9 feet bgs and a 5-foot rock core was recovered
- SB-05 was advanced using HSA to refusal at 10.2 feet bgs.

- SB-06/MW-03 was advanced using HSA to 35 feet bgs; this boring was halted due to running sands.
- SB-07/MW-04 was advanced using HSA to the target depth of 29 feet bgs
- MW-07 was advanced using HSA to the target depth of 31 feet bgs.
- MW-11/SG-4 was advanced using HSA to refusal at 20.6 feet bgs.
- MW-12 was advanced using HSA to refusal at 20.6 feet bgs.
- MW-13 was advanced using HSA to refusal at 9.1 feet bgs, no monitoring well installed.
- MW-14 was advanced using HSA to refusal at 5.1 feet bgs, no monitoring well installed.

Two locations were sampled for soil gas only; soil borings were not sampled at these two locations:

- SB-03/SG-2, boring could not be advanced due to potential asbestos-containing material, this location was sampled for soil gas only
- SG-3 was proposed for soil gas only.

Six of the soil borings were completed as groundwater monitoring wells: MW-01, MW-03, MW-04, MW-07, MW-11 and MW-12. One of the soil borings, SB-02/SG-1 was completed inside the basement of the building at 128 Baxter Street. The remaining soil borings were completed at outdoor locations.

Soil samples were collected continuously to completion depth for field screening and logging. Samples were collected using field-decontaminated 2-inch diameter 2-foot long split-spoon samplers. Upon opening the material inside the split-spoon was screened for organic vapors using a MiniRae2000™ PID. The sample material was classified in the field and inspected for field evidence of contamination including odors, discoloration, and evidence of coal gasification residual material (CGRM). Field data were recorded on soil boring logs. Copies of the soil boring logs are included in Appendix E. The soil borings were used to construct four generalized cross-sections for the site (see Figures 3-2 through 3-5).

Soil samples were collected at target intervals using dedicated disposable polyethylene sampling spatulas. Sample material was placed into laboratory-prepared glassware and submitted to Chemtech Laboratories (Chemtech) of Mountainside, New Jersey under chain-of-custody. The soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOC) by SW-846 Method 8260B, TCL Semi-volatile Organic Compounds (SVOC) by SW-846 Method 8270C, Target Analyte List (TAL) Metals by USEPA 6000/7000 Series Methods, and Cyanide by USEPA Method 9012. Table 4-1 presents a summary of the soil samples obtained including sample depths, purpose and parameters analyzed.

Drill cuttings were containerized in approved Department of Transportation (DOT) 55-gallon steel drums, labeled with the date, well/borehole number, type of waste, and the point of contact. The drums were then sealed and stored onsite for offsite disposal at an approved Con Edison facility.

Upon completion, the boreholes were sealed with a Portland cement and powdered bentonite slurry and allowed to cure. Once cured, the surfaces at the boreholes were replaced. Borings in asphalt-paved areas were temporarily patched, prior to repaving. Borings in concrete sidewalks and within the building basements were patched with concrete.

A sample of heavily stained soil from soil boring SB-04 was collected at 25 to 26 feet bgs. This sample, identified as "FP-1" was submitted to Meta Environmental Inc., (Meta) for forensic fingerprint analysis. A similar sample, identified as "FP-2", was collected from an oily wood fragment in soil boring SB-06. However, this sample was damaged during shipping and could not be analyzed.

At the time of sampling, NYSDEC was offered split-sample material for analysis by the NYSDOH laboratory. NYSDEC stated that they did not want duplicate samples of this material.

# 3.5 SOIL GAS SAMPLING

# 3.5.1 Sub-Slab Soil Gas Sampling

On November 7, 2006 two (2) sub-slab soil gas samples were obtained from the basements of the buildings located at 126 Baxter Street (Block 207, Lot 14) and 128 Baxter Street, and (Block 207, Lot 15). On January 18, 2008 two additional soil gas samples were collected. The two additional samples were collected as subsurface soil gas samples as SG-03 and SG-04. The work performed during the limited sub-slab and subsurface vapor sampling program was in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006.

On November 7, 2006, HDR installed two sub-slab vapor points at the former Hester Street Works Site. The two sub-slab points were installed in the basements of the buildings located on Block 207 Lot 14 (126 Baxter Street) and Block 207 Lot 15 (128 Baxter Street). Block 207 Lots 14 and 15 contained apartment buildings with vacant store fronts on the street level, and 4 floors of apartments above. At the time of the sub-slab vapor sampling, historical information regarding the location of former site structures was not known.

The installation of the sub-slab points began with the assessment of the basement locations and identifying a suitable place, free of under slab utilities (i.e. sewer, gas, and electric lines) and obstruction including large fissures or cracks in the concrete floor, for the installation of the sub-slab vapor points.

The basement of 126 Baxter Street was divided into three separate rooms with ceiling of about 7 feet. The three rooms were finished. The rooms were identified as rooms 1 through 3 for the purpose of taking field notes. Room 1 was approximately 50 feet long by 20 feet wide, and had a finished floor with tile. The walls were constructed of rounded field stone and were coated with a thin coat of concrete mortar covered with sheet rock. Room 2 was approximately 10 feet wide by 15 feet long, located at the back corner of the building and was empty. Room 3 in 126 Baxter Street was approximately 5 feet wide by 10 feet long and housed a small bathroom. During the site inspection and sampling no chemicals were identified as stored in these areas.

The basement of 128 Baxter Street was divided into three separate, but unfinished rooms with a ceiling height of about 6 feet. Room 1 was approximately 50 feet long by 25 feet wide, with numerous cracks and concrete patches in the basement floor. The walls were constructed of rounded field stone with a thin coat of concrete mortar. No chemicals were stored in this room and no odors were noted. Room 2 was approximately 15 feet wide by 25 feet long and was mostly unfinished except for several shelving units along the interior wall. A cylindrical pressure vessel of unknown contents was also noted along the interior wall. It was not known during this sampling event if this vessel was in use. During the survey several products were stored in this room. These products included one 1-gallon can of Behr® Accent Tint paint, one 4-ounce can of Oatey® Purple Primer NFS, and one and one half, 25-pound bags of Dash Patch®. A slight odor of fuel oil was noted during the sampling and chemical inventory of this room. Room 3 located in 128 Baxter Street was approximately 15 feet wide by 25 feet long and included the boiler, furnace and hot water tank. These units were all located in a 5- to 6-foot deep pit. A mild odor of fuel oil was noted during the survey of this room. No other chemicals storage was noted.

Once a suitable location was selected, a 1-inch diameter hole was advanced, with a Milwaukee Model 5347 hammer drill, through the concrete basement floors (approximately 4 inches). In order

to ensure the vapor point was below the basement slab, the borehole was advanced 2-inches into the material below the concrete floor. Upon completion of sub-slab vapor point borehole advancement, a stainless steel vapor sampling point was installed within the borehole. The vapor sampling point consisted of a 4-inch long piece of 0.25-inch outside diameter (0.D.) stainless steel tubing attached to 0.25-inch NPT threaded Swagelok® compression coupler. This stainless steel setup was then secured to the borehole using non VOC-emitting clay (PermaGum). The stainless steel set ups were then connected to one end of an 18-inch long piece of 0.25-inch 0.D. Teflon™ tubing with compression fittings affixed to both ends of the tubing. The other end of the Teflon™ tubing was then connected to a Suppleco Model PAS low flow soil gas pump. The sub-slab sampling points were then purged for 5 to 6 minutes at approximately 0.19 liters per minute to evacuate 3 volumes prior to sample collection. After purging 3 volumes, the Teflon™ tubing was connected to a 6-liter Summa® canister fitted with a 4-hour flow controller. Ideally an 8 hour test would have been collected to simulate an average work day but due to access restrictions (time constraints) only a four-hour test was practicable.

Once the connections were made the flow controllers were opened and the sample identification number, start time, canister vacuum pressure, flow valve controller number and the canister number were recorded. The sample identifications were representative of sample number and location of the point. For example 128 Baxter Street was labeled Soil Gas point 1, building address 128 Baxter Street (SG-1 128), and the sample identification for 126 Baxter Street was labeled Soil Gas Point 2, building address 126 Baxter Street (SG-2 126). Field personnel periodically checked the canisters to make sure they were working properly and to record canister vacuum pressures. Upon completion of the sampling period, the canister flow valve controllers were closed, and the ending vacuum pressure and ending sampling collection times were recorded. The sampling apparatus was then disconnected and the sub-slab vapor sampling borehole was sealed with PermaGum pending subsurface borehole advancement. Sub-slab samples were then packaged, shipped by overnight courier, and submitted under the chain-of-custody to the Test America (TA) Laboratory (formerly STL) in Knoxville, Tennessee, for VOC analysis by United States Environmental Protection Agency (USEPA) Method TO-15.

The subsurface samples were obtained from two outdoor locations in the same manner as the subslab samples. However, the sampling probes were advanced to depths of 6.5 to 7.5 feet below grade using stainless-steel rods. The depths were selected to characterize conditions at depths equivalent to the nearby basement floors.

#### 3.5.2 Subsurface Soil Gas Sampling

On January 18, 2008, HDR sampled two soil vapor sampling points at the site. Sample site SG-3 was located beneath the sidewalk, on Baxter Street, about ten feet from the edge of the building, to the west, and about 20 feet south of the intersection of Baxter and Hester Streets. Sample site SG-4 was located beneath the parking lot surface, about five feet southwest from the edge of the sidewalk, at the corner of Hester and Centre Streets. The property owners refused Con Edison access to the basements of these buildings. Therefore the proposed soil gas sample points were relocated to publicly accessible locations as close to the building as practicable, and advanced to approximately the same depth as the adjacent building's basements.

The two locations were identified by previous soft dig excavation to clear the upper 5 feet. To gain access to the surface of the soil, a flat, square blade shovel was used to remove the asphalt and expose the top layer of soil.

The sample from site SG-3 was taken first. The depth of 7.5 feet was chosen for the site because it is about the same depth as the basement of the adjacent building. After the surface layer of asphalt was removed and set to the side, the KV Soil Gas tool was used to manually drive a KV soil gas sample point and 10 feet of KV tubing into the substrate to a depth of 7.5 feet. Eight inches of sand was placed into the borehole above the point. The remainder of the void was filled with bentonite and water to seal the sample borehole and to ensure no intrusion of ambient air into the sample. To ensure proper seal of the void above the sample point, and to purge the void that was created, the sample tube was directed through a vessel filled with Helium gas, sealed with PermaGum, and drawn through a Helium meter to ensure no intrusion of outside, ambient air or Helium occurred. After the absence of Helium was confirmed, the tube was connected directly to a Summa canister, with a two-hour, low flow rate regulator to draw the soil vapor sample.

The sample from site SG-4 was taken second. The depth of 7.5 feet was chosen for this sample site for the same reasons as SG-3, but due to obstructions in the borehole (i.e. large rocks), 6.5 feet was the maximum depth reached and thus the sample was drawn at this depth. The sample equipment was then installed as described above for SG-3.

Field personnel checked the canisters approximately every 30 minutes to make sure they were working properly and to record canister vacuum pressures. Information including the sample identification, date, time of start and stop, vacuum of the canister at the start and stop, sampler, canister identification number, and regulator ID number were all recorded on the sample identification tag. The soil vapor samples were then packaged, shipped by overnight currier, and submitted under the proper chain of custody to the TA laboratory in South Burlington, Vermont. for VOC analysis by USEPA Method TO-15.

# 3.6 GROUNDWATER MONITORING

# 3.6.1 Monitoring Well Installation/Development

During Phase 1, four groundwater monitoring wells (MW-01, MW-03, MW-04 and MW-07) were installed onsite between November 8 and 16, 2006. Two of the monitoring wells (MW-03 and MW-04) were installed in the parking lot. The other two monitoring wells (MW-01 and MW-07) were located in the sidewalk on Baxter Street, to the east of the site. During Phase 2, two additional groundwater monitoring wells were installed: MW-11 and MW-12. Proposed monitoring wells MW-13 and MW-14 could not be installed because the field program was halted by MTA.

The monitoring wells were installed using 4 ¼-inch inside diameter (I.D.) HSA. The monitoring wells were constructed of 2-inch I.D. schedule 40 PVC with ten (10) feet of 0.020-inch factory slotted screen set across the first apparent water-bearing zone. The annular space around the well screen was backfilled with Grade 2 Morie sand from the bottom of the borehole to approximately 2 feet above the top of the screen. One to two feet of bentonite pellets were placed above the sand to create a seal. A Portland cement grout was installed above the bentonite to approximately 1 foot bgs. Each of the wells was completed with a locking compression plug and a protective flush-mount bolt-down steel cover. Copies of the monitoring well construction records are included in Appendix F. Monitoring well construction data are summarized on Table 3-1.

During Phase 1, monitoring well MW-03 was installed during a heavy rain event. Saturated soil was encountered at 11.8 feet bgs and the well was constructed with a screen from 8 to 18 feet bgs to span the top of the first water-bearing zone. When field personnel attempted to develop the well 7 days later, the water level had declined to approximately 17.5 feet bgs. The well was surged using the approximately 6 inches of standing water. However, the well failed to produce additional groundwater.

During Phase 2 saturated soils were encountered in the boring for monitoring well MW-11 at 12.5 feet bgs on January 17, 2008. This depth was shallower than expected. Although this well boring was drilled during a dry period, because of the conditions observed at MW-03, additional steps were taken to monitor water levels prior to installation. This included allowing the boring to stand open overnight to confirm groundwater levels. The depth to water at MW-11 remained at 12.5 feet bgs overnight and the well was constructed with the screen set from 10 to 20 feet bgs to span this interval. The well was not extended deeper due to drilling refusal at 20.6 feet bgs. Given the proximity to the nearby subway tunnel, refusal at this depth raised concerns of possible underground structures. Subsequent water level gauging confirmed that the groundwater remained at depths within the screened interval, ranging from 6 feet below the top of the flush-mount casing after well completion on January 18, 2008 and 12.46 below the top of casing on January 31, 2008.

Similarly, saturated soils were encountered at a shallower than expected depths during drilling at MW-12. Saturated soils were encountered in the boring for MW-12 at 11 feet bgs on January 17, 2008. Similar to MW-11, the drillers encountered refusal at 20.6 feet bgs at the boring for MW-12. Therefore, the well screen was installed from 10 to 20 feet bgs. When the well was gauged the following day it was found to be dry. Based on the conditions observed at MW-11 and the silty conditions observed in the boring for MW-12, the well was allowed to stand for one week to determine if groundwater would stabilize at or near the depth at which it was initially encountered. Well MW-12 remained dry during subsequent gauging events. However, due to the refusal at 20.6 feet, deeper drilling at this location was not recommended.

With the exception of monitoring wells MW-03 and MW-12, the monitoring wells were developed by surging and pumping. The water purged from the well during development was monitored for turbidity and at a minimum three well volumes were purged from the well during development. Monitoring wells MW-03 and MW-12 did not produce sufficient water to develop or sample.

# 3.6.2 Groundwater Level Measurement

Groundwater level measurements were recorded at the site on November 17, 2006, December 7, 2006, January 24, 2007, January 31, 2008 and February 19, 2008. Prior to gauging the water levels, the headspace in the well casing was tested for organic vapors using a PID. The depth to water (DTW) was measured to the nearest 0.01 foot using an electronic oil/water interface probe. The interface probe was also used to check for evidence of light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL). After recording the DTW measurement and checking for LNAPL, the probe was lowered to the bottom of each well to check for the presence of DNAPL and to record the depth to bottom (DTB) of each well. Water level gauging data are presented in Appendix G.

The depth measurements were recorded from the top of the inner well casing. The surveyed elevations were used to calculate groundwater elevations at each location. Table 3-2 summarizes the calculated groundwater elevations at the site. These data were used to construct groundwater contour maps for each of the rounds of gauging (see Figures 3-6 through and 3-10).

Data for the fourth and fifth rounds (January 31 and February 19, 2008) include two wells that became dry during the investigation (MW-03 and MW-12). Contour maps were initially prepared without using these two wells. However, the resulting map for the fourth round indicated groundwater elevations above the bottom of the screens at both locations and the map for the fifth round indicated a groundwater elevation above the bottom of the screen at MW-12. Because these wells were dry, the groundwater elevations at these locations were known to be below the bottom of

the screens and therefore deeper than indicated by the initial groundwater contour maps. Because an exact groundwater elevation could not be determined but the water level was known to be below the bottom of the screen the contour maps were redrawn using the bottom of the well screens as assumed groundwater elevations at these two locations. The contour map for the fourth round (see Figure 3-9) was redrawn using the bottom of screen elevations for both wells. Because the bottom of screen depth at MW-03 is above the interpreted groundwater surface for the fifth round, Figure 3-10 was redrawn using the bottom of screen elevation for MW-12 only. While the contours in these areas cannot be considered exact, the interpretations are considered to be more accurate than the maps prepared without information from these wells. Figures 3-9 and 3-10 include notes to explain that the bottom of the well screen elevations were used to prepare the contour maps.

# 3.6.3 Groundwater Sampling

Groundwater samples were obtained using standard purging and sampling techniques in accordance with the SCWP. Prior to sampling, the non-dedicated sampling and measuring equipment was decontaminated with a potable water and phosphate free detergent. Sampling equipment was then rinsed with potable water followed by a de-ionized (DI) water rinse. The waste derived from decontamination of sampling equipment was placed in approved DOT 55 gallon drums, labeled, and disposed of offsite by an approved Con Edison contractor (see Section 3.8).

The water level data, well diameter, and well depth were then used to calculate the minimum purge volume (PVmin) and the maximum purge volume (PVmax) for each well as specified in the SCWP. The minimum purge volume is twice the volume of the sample tubing used for purging and sampling. The maximum purge volume is ½ of the well casing volume. The purge volumes were calculated as follows:

PVmin = Tubing Length (TL) x Tubing Factor1 (TF) x 2.

PVmax= Depth to Bottom (DTB) - DTW (DTW) x the Casing Factor (Fc) times 0.25.

The groundwater purging and sampling was performed using a Whale™ Mini Purge pump. At each location the Whale™ pump was fitted with disposable polyethylene tubing and inserted into the well. Non-dedicated sampling and gauging equipment was decontaminated prior to use at each location. The equipment was disassembled, scrubbed with a non-phosphate detergent solution consisting of Liquinox® and potable water, and then rinsed with distilled water. The rinse water was containerized for disposal with the well purge water.

The sample pump intake was positioned in the lower third of the screen interval. Once the pump was lowered to the purging depth, a water level measurement was taken prior to the start of purging.

During purging and sampling the following water quality parameters were measured using a Horiba U-22 Water Quality Indicator: pH, specific conductance, reduction-oxidation (Redox) potential, dissolved oxygen (DO), turbidity, and temperature. These data were recorded on well purging and sampling forms. Well purging and sampling data are presented in Appendix H. Water levels and water quality parameters were recorded at approximately 3- to 5-minute intervals during purging.

During Phase 1 of the SCS, groundwater samples were collected from monitoring wells MW-01, MW-04 and MW-07 on December 7, 2006. MW-03 did not produce sufficient volume for sampling. The groundwater samples were submitted to Chemtech and analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL Metals by USEPA 6000/7000 Series

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 $<sup>^{</sup>m 1}$  The Tubing Factor is 0.0102 gallons per foot or 39 milliliters per foot for 3/8-inch diameter tubing.

Methods, Cyanide (total) by USEPA Method 9012, and Cyanide (available) by USEPA Method 0IA-1677.

During Phase 2 of the SCS groundwater samples were collected from monitoring wells MW-01, MW-04, MW-07 and MW-11. Monitoring wells MW-03 and MW-12 were dry at that time. The Phase 2 groundwater samples were sent to the TA laboratory in Edison, New Jersey for analysis of the same parameters as the Phase 1 samples. The SVOC sample aliquot from MW-11 was broken by the laboratory. Therefore, this well was resampled for SVOCs on February 19, 2008.

#### 3.7 SITE SURVEY

At the completion of installation activities, the locations and elevations of the monitoring wells were surveyed by a CMX New York State-licensed surveyor. The survey elevations were measured to an accuracy of 0.01 foot above the National Geodetic Vertical Datum of 1929. Survey data are summarized on Table 3-3.

#### 3.8 MANAGEMENT OF INVESTIGATION DERIVED WASTE

IDW, including but not limited to, decontamination and drilling fluids, drill cuttings, well development and purge water, and personal protective equipment that was generated during site characterization activities was containerized in approved DOT 55-gallon drums. The drums were labeled with the generation date, well/boring number, type of waste (i.e. drill cuttings, drilling fluids, development or purge water), name of a point of contact and identified as "pending analysis."

The IDW was transported to and disposed at an approved Con Edison facility. The following types of IDW were generated during this project:

- Demolition debris consisting of asphalt and concrete generated during soft dig activities.
- Non-hazardous solid waste consisting of soil, fill and rock drill cuttings.
- Non-hazardous liquid waste consisting of monitoring well development water, monitoring well purge water, and spent decontamination liquids.

Table 3-4 summarizes the management of IDW. Appendix I contains copies of shipping and disposal records.

# 3.9 SITE RESTORATION

Each intrusive location was restored following completion of drilling activities. Monitoring well locations were completed with flush-mounted, bolt-down covers. Abandoned soil borings in asphalt-paved areas were capped with cold patch. Cold-patch or cement was used to temporarily cover soil borings in sidewalks. The driller returned to the site, removed the patches and replaced the damaged sidewalk flags in accordance with the permit requirements.

# 3.10 LABORATORY ANALYSIS/DATA MANAGEMENT

Samples collected from soil borings and groundwater monitoring wells were analyzed using the SW-846 "Testing Methods for Evaluating Solid Waste", November 1986, 3rd edition (and subsequent updates). Samples were collected in laboratory-prepared glassware and submitted to Chemtech Laboratories, of Mountainside, New Jersey under chain-of-custody.

Soil samples were analyzed for TCL VOCs by SW-846 Method 8260B, TCL SVOCs by SW-846 Method 8270C, TAL Metals by USEPA 6000/7000 Series Methods, and Cyanide by USEPA Method 9012.

Additionally one product-stained soil sample encountered during the SCS was submitted to Meta under chain-of-custody and analyzed for Forensic Hydrocarbon Fingerprint analysis using Method MET 4007D.

Groundwater samples were collected directly into preserved samples bottles and submitted to Chemtech for analysis of TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL Metals by USEPA 6000/7000 Series Methods, Total Cyanide by USEPA Method 9012, and Available Cyanide using USEPA Method OIA-1677.

Soil gas samples were sampled as described in Section 3.5 and analyzed for VOCs by USEPA Method TO-15.

# 3.11 DATA VALIDATION/DATA USABILITY SUMMARY REPORT

Laboratory were evaluated in accordance with the USEPA Contract Laboratory Program for Organic Data Review, EPA 540/R-99/008 (October 1999), and USEPA Contract Laboratory Program for Inorganic Data Review, EPA 540/R-94/013 (February 1994). The results of the data evaluation were documented in a Data Usability Report (DUSR) (Appendix J).

# 3.12 DEVIATIONS FROM WORK PLAN

The following deviations from the SCWP resulted from conditions encountered in the field. These deviations were discussed with NYSDEC at the time.

- 1. The original SCWP proposed test pits to investigate for relic MGP structures below grade. The property owner rejected the use of test pits due to the highly disruptive nature of this activity coupled with the owner's need to keep the parking lot active throughout the investigation program. The owner provided parking lot construction information and boring logs from Phase 1 fieldwork were reviewed by Con Edison and NYSDEC. Based on those discussions the test pits were removed from the scope of work for the SCS.
- 2. Running sands were encountered in stratigraphic boring SB-04. To keep the boring open the drilling method was switched from HSA to mud-rotary drilling with a driven casing.
- 3. Heavy precipitation during drilling activities at MW-03 temporarily raised the water table in this area. The well screen was placed based on the elevated water table. Water levels subsequently declined at this location resulting in the bottom of the monitoring well screen above the water table.
- 4. Monitoring wells MW-02, MW-13 and MW-14 could not be installed due to shallow obstructions in the boring locations.
- 5. The boring for monitoring well MW-12 was halted at 20.6 feet below grade due to refusal. A well casing was installed in this boring based on observations of relatively shallow groundwater at nearby well MW-11 and moisture in the soil at MW-12. This well was subsequently determined to be above the water table; however the well could not be advanced deeper due to refusal.

- 6. Intrusive activities were halted by MTA before the second phase of investigation could be completed. MTA indicated that drawings of underground structures associated with the nearby tunnels may be inaccurate and refused to allow further work within 75 feet of the eastern curb line of Centre Street. This restriction covers most of the site.
- 7. Soil boring SB-03 could not be completed due to the presence of potential asbestos containing material; what appeared to be vinyl-asbestos floor tiles.

# **SECTION 4 SITE CHARACTERIZATION STUDY RESULTS**

#### 4.1 SITE TOPOGRAPHY AND DRAINAGE

Surface topography at the site is relatively flat with a gentle slope downward from northeast to southwest. Surveyed sample elevations ranged from 17.5 feet above Mean Sea Level (MSL) at MW-13 (located in the southwest corner of the parking lot) to 20.9 feet MSL at MW-01 (located near the northeastern corner of the site along Baxter Street. There is a low courtyard between the parking lot and the buildings to the east. The courtyard is approximately 5 to 8 feet below the grade of the parking lot.

#### **4.2 SITE GEOLOGY**

Regional geology, based on published sources, is discussed in Section 2.4. Observations during the soil boring and well installation activities indicate that the site is underlain by approximately 90 feet of unconsolidated material.

The site is underlain by 9 to more than 20 feet of fill material. The 11 soil borings encountered fill material immediately beneath the pavement or basement floors. Five borings penetrated the fill layer to underlying natural soils. Where fully penetrated the fill layer ranged from 9 feet thick at SB-01/MW-01 to 19 feet thick at SB-07/MW-04. Locations MW-11 and SG-12 encountered fill to completion depth at refusal at 20.6 feet bgs. At the 11 locations the fill material consisted of well graded sand with fragments of brick, concrete and other debris. Distinct layers of brick and brick fragments were encountered at three locations: SB-04 (5 to 9 feet bgs), MW-12 (7 to 11 feet bgs) and MW-13 (5 to 7 feet bgs). These layers may represent old building foundations. However, no evidence of contamination was reported within these layers.

Five borings fully penetrated the fill layer: SB-01/MW-01, SB-04, SB-06/MW-03, SB-07/MW-04, and MW-07. At these locations the fill was underlain by yellowish red, brownish yellow or reddish brown fine to coarse well graded micaceous sand. This layer extended to the completion depth of four of the borings between 29 and 35 feet bgs. At the stratigraphic boring (SB-04) this layer extended to 33 feet bgs. A 2-inch seam of concrete was encountered in SB-06/MW-03 at 30 feet bgs. However, the sand above and below appeared to be natural with evidence of natural deposition. Therefore, the field scientist concluded that the concrete was likely associated with prior construction associated with the nearby subway tunnel.

Soil boring SB-04 extended to bedrock. This boring encountered gravel and gravelly sand from 33 to 65 feet bgs. The gravel layer was underlain by reddish brown silty sand and silt from 65 feet to the top of bedrock at 89.9 feet bgs. Inspection of a 5-foot bedrock core confirmed that bedrock at the site is gneiss.

# 4.3 SITE HYDROGEOLOGY

The NYSDEC classification for groundwater in this area of Manhattan is "GA" or fresh groundwater. Groundwater at the site is unconfined.

Depth to water varies considerably across the site. Saturated soils were encountered in the borings at depths ranging from 11.8 feet bgs at SB-06/MW-03 to 23 feet bgs at both SB-01/MW-01 and MW-07. Data from the first round of water level measurements following construction of each well indicate that the depth to water at three of the six well locations initially stabilized at depths similar to the depth at which saturated soils were first encountered. Water levels measured in monitoring wells MW-01, MW-07 and MW-11 stabilized within 1 foot of the depth of saturated soils first

encountered at these locations. When adjusted for the difference between grade and the top of casing elevation, the initial water level measurement at MW-01 was 0.06 feet shallower than the depth to saturated soils and the initial water level measurements at MW-07 and MW-11 were 0.55 and 0.31 feet deeper than the depth to saturated soils observed in the field.

At the remaining three well locations: MW-03, MW-04 and MW-12, water levels initially stabilized at depths from 2.5 to more than 9.9 feet lower than the depth at which saturated soils were first encountered. The variations in depth to saturated soil and first depth to water measured in the completed well at these three locations were as follows:

- 6.4 feet at MW-03: saturated soils were first encountered at 11.8 feet bgs and groundwater initially stabilized at 18.2 feet bgs;
- 2.5 feet at MW-04: saturated soils were first encountered at 17 feet bgs and groundwater stabilized in the well at 19.5 feet bgs, and;
- More than 9.9 feet at MW-12: saturated soils were first encountered at 11.0 feet and groundwater stabilized below the bottom of the well screen which is 19.9 feet bgs.

The depth to groundwater and calculated groundwater elevations fluctuated across the site during the five rounds of monitoring. During the first round of monitoring (November 17, 2006) groundwater elevations ranged from 2.04 feet below MSL at MW-01 to 0.29 feet above MSL at MW-03. Based on data from the four wells that existed at the time (MW-01, MW-03, MW-04 and MW-07) the average groundwater elevation at the site was 1.18 feet below MSL. During the second round of monitoring on December 7, 2006, water levels had risen somewhat to an average elevation of 0.13 feet above MSL and by the third round of monitoring on January 24, 2007, the average groundwater elevation across the site was 0.15 feet below MSL.

After installation of additional monitoring wells in early 2008, groundwater elevations across the site were considerably deeper. With the exception of new monitoring well MW-11, elevations at the remaining locations were all below MSL. During the fourth round of gauging on January 31, 2008, groundwater elevations measured in the Phase 1 monitoring wells (MW-01, MW-04 and MW-07) ranged from 3.44 feet below MSL at MW-04 to 2.88 feet below MSL at MW-07 indicating declines of roughly 2 feet since the previous three rounds of gauging. The water level at MW-03 had declined below the bottom of the well casing which is at an elevation of 0.03 feet above MSL. During this round of monitoring the groundwater elevation at MW-11 was 4.89 feet above MSL, which was nearly identical to the elevation at which saturated soils were first encountered in the associated well boring on January 18, 2008. By the fifth round of water level monitoring on February 19, 2008, the groundwater elevation at MW-11 had declined to 0.16 feet below MSL. The average groundwater elevation using data from the four wells installed in 2006, was 3.20 feet below MSL on January 31, 2008 and 2.65 feet below MSL on February 19, 2008. These average elevations indicate that groundwater levels have declined roughly 1.5 to 3.3 feet across the site during the course of this SCS.

Observations at the site indicate complex local groundwater flow patterns. Groundwater contour maps were prepared for each of the five rounds of water levels (see Figures 3-6 through 3-10). The contour map for the first round of water level gauging (November 17, 2006), indicates flow across the southeastern part of the site to the northeast with a horizontal hydraulic gradient of 0.007. The contour map for the second round of water level gauging (December 7, 2006) indicates flow across the southeastern part of the site to the northwest with a hydraulic gradient of 0.002. The map for the third round of water level gauging (January 24, 2007) shows flow across the southwestern portion of the site from east to west with a hydraulic gradient of 0.004. These maps suggest widely varying flow directions across the southeastern portion of the site.

Data from the fourth and fifth rounds expanded the contour maps to include water levels for the northwestern portion of the site. Groundwater contour maps for the fourth and fifth rounds (January 31 and February 19, 2008) indicate flow from the southeast and northwest toward the center of the site. Groundwater at the site appears to flow from both the northwest and the southeast toward a linear or trough-like depression in the water table. The water table depression generally trends southwest to northeast across the site. This depression appears to drain in a southwesterly direction. The groundwater flow pattern is not readily explained by natural conditions observed at the site.

Four of the six groundwater monitoring wells contained standing water during the fourth and fifth rounds of gauging (MW-01, MW-04, MW-07 and MW-11). Based on the contour maps for the fourth and fifth rounds of water level gauging, the northern, southern and eastern perimeters of the site are all hydraulically upgradient from what appears to be a depression at the southwest corner of the site. In this context, data from monitoring wells MW-01, MW-07 and MW-11 reflect upgradient conditions and MW-04 reflects downgradient conditions.

Based on the following observations, it appears that groundwater flow at the site is controlled by artificial features such as variations in the fill material, possibly leaking storm sewers and dewatering associated with nearby subway tunnels:

- Considerable variation in groundwater levels;
- Average site-wide groundwater elevations below MSL;
- Long-term apparent decline in site-wide groundwater elevations, and;
- Unusual horizontal flow directions.

In addition, based on observations during installation of monitoring well MW-03, water levels on portions of the site fluctuate considerably during heavy rain. The groundwater level at MW-03 was approximately 6 feet higher during the rain event than during dry periods.

#### 4.4 NATURE AND EXTENT OF IMPACTS

#### 4.4.1 Soil Screening

As noted in Section 3.4, soil samples were obtained continuously from the eleven (11) soil boring/monitoring well locations and screened for field evidence of contamination. Detailed observations are described in the soil boring logs in Appendix E. Table 4-2 presents a summary of sample intervals recovered, PID readings, odors noted and visible evidence of impacts.

No field evidence of contamination was reported in samples from the following 7 of the 11 locations sampled:

- SB-01/MW-01;
- SB-02;
- SB-05:
- MW-07;
- MW-11;
- MW-13, and;
- MW-14.

Field evidence of contamination was reported at the remaining four locations as follows:

- Elevated PID readings, hydrocarbon odors, visible sheen and stained soils were identified in soil boring SB-04 between 23 and 33 feet bgs. No other field evidence of contamination was observed in the remaining soil samples from this location.
- Elevated PID readings, creosote odors, oil material, stains and/or visible sheens were noted in soil boring SB-06/MW-03 between 7 and 31.5 feet bgs. No field evidence of contamination was observed from 31.5 feet to the end of the boring at 35 feet bgs.
- A visible sheen was noted on soil samples from two depth intervals in soil boring SB-07/MW-04: 9.0 to 11.0 feet bgs and 23.0 to 24.0 feet bgs. The deeper sample also was stained. No other field evidence of contamination was observed in the remaining soil samples from this location.
- Elevated PID readings, fuel oil odors, and/or staining were reported in soil samples between 11 and 19 feet bgs in soil boring MW-12. No other field evidence of contamination was observed in the remaining soil samples from this location.

# 4.4.2 Soil Sample Analysis

During this SCS, 15 soil samples were collected for laboratory analysis to characterize conditions at the site. One additional soil sample was subjected to a fingerprint analysis to help determine the source of contamination associated with stained soil. Table 4-3 compares the results for the 15 characterization samples with the current NYSDEC Soil Cleanup Objectives (SCO) identified at NYCRR 6 Part 375. Table 4-4 identifies the number of samples in which each parameter was detected and the number of samples which exhibited concentrations above the Unrestricted Use SCO (UUSCO). Of the 128 target analytes, only the following 23 were detected at concentrations above the UUSCO.

#### Volatile Organic Compounds

- Acetone
- Benzene
- Ethylbenzene
- Methylene Chloride
- Toluene
- Xylenes

#### Semi-Volatile Organic Compounds

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene

# Inorganics

- Cadmium
- Chromium

- Copper
- Lead
- Mercury
- Nickel
- Silver
- Zinc

The acetone and methylene chloride are common laboratory-induced contaminants and are not believed to reflect site conditions. Concentrations of the remaining four VOCs (benzene, ethylbenzene, toluene and xylenes) exceeded the UUSCOs in the sample from SB-06 at 18.5 to 19.0 feet bgs and the samples from MW-12 at 11.0 to 12.0 feet bgs and 17.6 to 18.6 feet bgs. Concentrations of total VOCs and/or SVOCs exceeded the SCO of 100 parts per million in these three samples. These samples generally correspond to the highest relative PID readings. These three samples also exhibited the highest concentrations of the SVOCs which exceeded the UUSCO. Inorganic concentrations were highest in the onsite samples from the fill. Electronic copies of the laboratory reports for the soil samples are presented in Appendix K. Figure 4-1 identifies the total concentrations of organic compounds detected and indicates samples that with concentrations that exceeded the UUSCO.

The results of the fingerprint analysis indicated a mixture of petrogenic and possibly pyrogenic materials. Such a mixture may be found at MGP sites where residual materials have been mobilized by recent petroleum releases as well as sites that used petroleum distillates as feedstock. The pyrogenic material was reported to be characterized by the presence of three and four-ring parent polycyclic aromatic hydrocarbons (PAHs). However the identification of pyrogenic material could not be confirmed. The petrogenic material was identified as highly weathered and diesel-range type product. An electronic copy of the fingerprint analytical report is presented in Appendix L.

### 4.4.3 Soil Gas

# 4.4.3.1 Sub-Slab Soil Gas Sampling

Analytical results from sub-slab vapor sampling at 126 and 128 Baxter Street indicate that subsurface soil gas has been impacted by two chemicals: chloroform and tetrachloroethene. Chloroform was detected at 56 parts per billion by volume (ppbv) or 273.28 micrograms per cubic meter (µg/m³) at 128 Baxter Street (sample SG-1 128) and 9.5 ppbv (46.36 µg/m³) at 126 Baxter Street (sample SG-2 126), while tetrachloroethene was detected at 17 ppbv (115.26 µg/m³) in SG-1 128 and 7.6 ppbv (51.53 µg/m³) in SG-2 126. At this time the New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) do not have any established standards, criteria, or guidance values for concentrations of compounds in soil and sub-slab vapors. However, these agencies have guidance values for several compounds for indoor and outdoor air quality. In comparison to the NYSDOH indoor and outdoor air guidance values, SG-1-128 was the only sub-slab sample with a concentration over the applicable Guidance Value (GV) of 100 µg/m³ for tetrachloroethene. The other concentrations were below detection limits during the course of this investigation and the suspected source of the chloroform and tetrachloroethene could not be identified. Electronic copies of the laboratory reports for the groundwater samples are presented in Appendix M.

# 4.4.3.2 Subsurface Soil Gas Sampling

Analytical results from sampling at SG-3 and SG-4 indicate that subsurface soil gas have been impacted by the chemical constituents listed in this section VOCs were detected in the SG-3(7.5ft) sample:

Compound	ppbv	μg/m³
Chloroform	9.2	45
4-Ethyltoluene	44	220
Naphthalene	58	300
Tetrachloroethene	110	750
1,1,1-Trichloroethane	2	11
Trichloroethene	1.3	7
1,3,5-Trimethylbenzene	31	150
m or p-Xylene	5.7	25
o-Xylene	5.5	24

The following VOCs were present in the **SG-4(6.5ft)** sample:

Compound	ppbv	µg/m³
Benzene	1.2	3.8
2-Butanone (Methyl ethyl ketone-MEK)	0.62	1.8
Chloroform	0.58	2.80
Ethylbenzene	0.54	2.3
n-Heptane	1.0	4.1
n-Hexane	1.8	6.3
Methylene chloride	1.8	6.3
Methyl tert-butyl ether	0.77	2.8
Tetrachloroethene	0.72	4.90
Toluene	5.1	19
Trichlorofluoromethane	0.25	1.4
M or p-Xylene	1.6	6.9
o-Xylene	0.42	1.8
2,2,4-Trimethylpentane	0.4	1.9

At this time the NYSDOH and NYSDEC do not have established standards, criteria, or guidance values for concentrations of compounds in soil and sub-slab vapors. However, these agencies have guidance values for several compounds for indoor and outdoor air quality. In comparison to the NYSDOH indoor and outdoor air guidance values, SG-3(7.5ft) is the only subsurface sample with concentrations over applicable GV of 100  $\mu$ g/m³ for tetrachloroethene.

#### 4.4.4 Groundwater

Two rounds of groundwater samples were obtained from the site. During Phase 1, samples were collected from three wells: MW-01, MW-04 and MW-07. During the second round, samples were collected from these three wells and recently installed MW-11. The samples were analyzed for the following parameters:

- TCL VOCs by USEPA Method 8260;
- TCL SVOCs by USEPA Method 8270;
- TAL Metals by USEPA 6000/7000 Series Methods;
- Total Cyanide by USEPA Method 9012, and;

Available Cyanide by USEPA Method OIA-1677.

Samples from Round 1 were analyzed by Chemtech. Samples from Round 2 were analyzed by TA. The groundwater analytical data were compared to the New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Class GA Standards. Analytical results for the groundwater samples are summarized on Table 4-5. Table 4-6 identifies the frequency of detections and the number of samples with concentrations above the Class GA Standard. Electronic copies of the laboratory reports for the groundwater samples are presented in Appendix N.

#### 4.4.4.1 VOCs in Groundwater

As shown in Table 4-5, three VOCs were detected at concentrations above the TOGS 1.1.1 Class GA Standards:

- Chloroform in samples from MW-01 MW-07 and MW-11 during the second round of sampling only
- Tetrachloroethene in Samples from MW-01 and MW-07
- Toluene in the sample from MW-11.

No target VOC exceedances were reported in the sample from downgradient monitoring well MW-04 although the total concentration of VOC tentatively identified compounds (TIC) exceeded the groundwater effluent limitation of 100 micrograms per liter ( $\mu$ g/L). No other VOC exceedances were reported in the groundwater samples.

#### 4.4.4.2 SVOCs in Groundwater

As shown in Table 4-5, eight SVOCs were detected at concentrations above the TOGS 1.1.1 Class GA Standards:

- bis(2-Ethylhexyl)phthalate in the first sample from MW-04
- 4-Methylphenol in the sample from MW-11
- Phenol in samples from MW-01 and MW-11
- Five PAHs in the first sample from MW-04; two of these PAHs also exceeded the standards in the sample from MW-11

In addition to the target SVOCs, the total concentration of SVOC TIC exceeded the groundwater effluent limitation of 100  $\mu$ g/L. No other SVOC exceedances were reported in the groundwater samples.

#### 4.4.4.3 Inorganics in Groundwater

As shown in Table 4-5, inorganic analyses included TAL metals and cyanide. Concentrations of cyanide were below the Class GA Standards. Concentrations of most of the metals analyzed exceeded the standards in one or more of the groundwater samples obtained. These included:

- Antimony in samples from MW-01, MW-04 and MW-07;
- Arsenic in samples from MW-04;
- Barium in samples from MW-01 and MW-04;
- Beryllium in samples from MW-01, MW-04 and MW-07;
- Cadmium in one sample from MW-04;
- Chromium in samples from MW-01, MW-04 and MW-07;
- Copper in samples from MW-01 and MW-04;

- Iron in all samples;
- Manganese in samples from MW-01, MW-04 and MW-07;
- Lead in all samples;
- Magnesium in samples from MW-01 and MW-04;
- Mercury in samples from MW-04 and MW-07;
- Nickel in samples from MW-01, MW-04 and MW-07;
- Sodium in all samples, and;
- Zinc in one sample from MW-04.

Concentrations of the remaining metals tested (selenium, silver, thallium and vanadium) were below the Class GA Standards. Figure 4-2 shows the total concentrations of organic compounds detected in each of the groundwater samples.

#### **SECTION 5 EXPOSURE ASSESSMENT**

Results of the SCS indicate the presence of low level contamination consisting of:

- Several constituents in the soil at concentrations above current UUSCOs;
- Several contaminants dissolved in the groundwater at concentrations above current TOGS 1.1.1 Class GA Standards, and;
- Soil gas organic vapors of tetrachloroethene and trichloroethene above outdoor air GV;
- Detectable organic vapors associated with soil well below the surface.

#### 5.1 POTENTIAL EXPOSURE TO AFFECTED SOIL

The site is accessible by the general public; however the surfaces are covered with pavement or buildings. These features serve as an engineering control to prevent direct contact to affected soil by the general public. The only potential direct-contact exposure pathway identified is construction workers or similar workers who might perform intrusive subsurface excavations.

#### 5.2 POTENTIAL EXPOSURE TO AFFECTED GROUNDWATER

There is no direct route for human exposure to groundwater at the site. Groundwater was encountered at depths ranging from 11 to 23 feet bgs at the site. There is no direct exposure route to the general public. Groundwater conditions at the downgradient monitoring well, MW-04, indicated slight exceedances of bis(2-ethylhexyl)phthalate and several PAHs during the first round of groundwater sampling. These concentrations had declined to below the Class GA Standard during the second round. Therefore, there does not appear to be a significant potential for exposure to site-related groundwater contaminants migrating off of the site.

The potential route for human exposure would be incidental contact by workers should construction activities involve dewatering at the site. However, although incidental contact is a possible exposure route, results of the site characterization do not provide conclusive evidence of MGP-related contamination in the groundwater.

#### 5.3 EXPOSURE ASSESSMENT SUMMARY

Based on the observations during the subsurface investigation, absence of site-related contamination in the soil gas samples, and the presence of pavement and buildings across the entire site no significant exposure threat has been identified at the site. However, a potential exposure threat exists to workers conducting subsurface work such as utility maintenance and building construction. Appropriate health and safety precautions should be followed by any potential subsurface workers.

#### **SECTION 6 SUMMARY AND CONCLUSIONS**

#### **6.1 SUMMARY OF SCS RESULTS**

Between October 2006 and February 2008 CMX conducted a SCS of the Hester Street Former MGP Site. The field investigation included the following activities:

- The geophysical surveys in association with utility clearance of proposed investigation areas.
- Sampling of eleven soil borings to characterize subsurface soils, and obtain a better understanding of site stratigraphy and bedrock topography.
- Water level gauging and sampling of four groundwater monitoring wells to obtain groundwater quality and flow information.
- Collection of four soil gas samples.

#### 6.1.1 Site Stratigraphy

During the soil boring and monitoring well drilling three (3) types of materials were encountered:

- Fill:
- Sand/silt and gravel layers and;
- Competent bedrock.

The boring logs present the depths, thicknesses and elevations of the units encountered at each of the soil boring locations. The fill consists of well graded sand with concrete and brick fragments and other debris. The fill is underlain by fine to coarse sand to approximately 33 feet bgs. The sand is underlain by gravel and gravelly sand to approximately 65 feet bgs. The gravel/gravelly sand is underlain by silty sand and silt to the top of bedrock at approximately 90 feet bgs. The bedrock is gneiss.

#### 6.1.2 Soil Sample Results

Free product in the form of oil-covered wood was observed in one soil boring, SB-06 at 7.0 to 7.1 feet bgs. No other free product was observed at the site. A stained soil sample was analyzed by forensic fingerprinting. Results of the fingerprint analysis indicated petrogenic source with possible, but inconclusive, evidence of pyrogenic material.

Soil sample analytical results indicated limited exceedances of UUSCOs. This included six VOCs, nine SVOCs and eight metals. The greatest VOC and SVOC exceedances were encountered in soil samples between about 11 and 19 feet bgs. Soil sample analytical results for one sample SB-06 exceeded the SCO of 100 points per million for total VOCs and for SVOCs in three soil samples from soil boring SB-06 and MW-12. The metals exceedances appear throughout the fill material and likely reflect background contamination associated with urban fill throughout the area.

#### 6.1.3 Groundwater Sample Results

The groundwater sample results indicate potential impacts from upgradient locations. Three VOCs were detected at concentrations above the Class GA standards: chloroform, tetrachloroethene and toluene. Reported exceedances of chloroform and tetrachloroethene would not be associated with historical MGP activities. While toluene is sometimes identified as a contaminant of concern at MGP sites, it is rarely seen without benzene. Benzene was not detected in the groundwater samples from the site. Furthermore, the toluene was detected only in the sample from MW-11 which appears to be hydraulically upgradient from the site. Therefore, it appears that the toluene observed is associated with non-MGP sources.

During the first round of sampling, concentrations of six SVOCs exceeded the Class GA Standard in the sample from downgradient monitoring well MW-04. The six SVOCs included bis(2-ethylhexyl) phthalate and five PAHs. While PAHs are commonly associated with former MGP sites they are also often associated with urban fill. The presence of the PAHs is not conclusive evidence of MGP-related contamination. The six SVOCs were not detected in the sample from MW-04 collected during the second round of sampling. During the second round of sampling two upgradient wells (MW-01 and MW-11) exhibited SVOC concentrations above the Class GA Standards.

Metals concentrations exceeded the Class GA Standards in the seven groundwater samples collected. The distribution of metals concentrations did not suggest specific areas of onsite or nearby source areas. The ubiquitous nature of the metals suggests impacts associated with widespread fill material and appear to reflect background conditions rather than site-related impacts.

#### **6.2 CONCLUSIONS**

As discussed in Section 1.1 the objectives of this SCS were to:

- 1. To confirm the presence or absence of former MGP structure, to the extent practical.
- 2. To evaluate soil and groundwater quality to determine if MGP residuals are present in the subsurface.
- 3. To determine whether the presence of any residuals encountered could potentially pose a threat to public health and/or the environment.
- 4. To evaluate potential migration pathways for any MGP residuals and/or chemical constituents that may be related to the operations of the former MGP site, if any are encountered.
- 5. To determine the need for supplemental data that may be necessary to adequately delineate the vertical and horizontal extent of soil and/or groundwater that may be impacted by MGP residuals, if any.
- 6. To characterize site-specific geology and hydrology.

The following sections present the conclusions of the SCS with regard to these objectives.

#### 6.2.1 Historical MGP Structures

Results of this SCS did not identify evidence of former MGP structures. Demolition debris is present in fill across the entire site.

#### 6.2.2 Soil and Groundwater Results

Results of the investigation indicated some exceedances of UUSCOs, RSCOs and groundwater standards. However, the results did not indicate significant soil or groundwater impacts attributable to historical MGP operations. Results of this SCS did not identify contamination that could be defined as resulting from historical MGP operations. However, the nature of the contamination is consistent with both urban fill and low-level impacts typically associated with MGP sites. Therefore, results of the soil and groundwater samples obtained during this SCS do not conclusively indicate the absence of MGP-related impacts.

#### 6.2.3 Threats to Human Health and/or the Environment and Exposure Pathways

Results of the exposure assessment indicate no direct exposure routes for the general public to contaminated media at the site. A potential future exposure route is to workers performing intrusive work. Such potential future exposure can be managed through engineering and administrative controls.

#### 6.2.4 Supplemental Data Needs

Results of this investigation did not identify evidence of impacts that require further delineation. Therefore, there are no supplemental data needs for this project and no further sampling is warranted at this time.

#### 6.2.5 Sites Specific Geology and Hydrogeology

Results of this investigation characterized site-specific geology and hydrogeology.

#### **6.3 RECOMMENDATIONS**

Based on the results of this project, Con Edison offers the following recommendation for this site:

- No further investigation is warranted at this time.
- A site management plan should be prepared addressing industrial and engineering controls for maintenance of environmental conditions at the site.

#### **SECTION 7 REFERENCES**

- Dvirka and Bartilucci Consulting Engineers, 2005. Site Characterization Study Work Plan, Hester and Canal Former Manufactured Gas Plant Site, September.
- Langan Engineering & Environmental Services, P.C.; 2002. MGP Research Report, Hester and Canal Street Works. November 13.
- Con Edison, 2007 Summary of Preliminary Site Characterization and Recommendations, Con Edison Hester Street Site, Manhattan, New York, VCA Number: V00528. August 29.

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#### **SECTION 8 LIST OF ACRONYMS AND ABBREVIATIONS**

ADT	Aquifer Drilling and Testing, Inc.	MTA	Metropolitan Transportation Authority
bgs	below the ground surface	NAPL	Non-aqueous phase liquid
CAMP	Community Air Monitoring		NAPL
	Plan	NYCDEP	City of New York Department
CGRM	Coal gasification residual		of Environmental Protection
	material	NYCDOH	New York City Department of
Chemtech	Chemtech Laboratories		Health
Con Edison	Consolidated Edison	NYCRR	New York City Rules and
	Company of New York, Inc.		Regulations
D&B	Dvirka and Bartilucci	NYSDEC	New York State Department
	Consulting Engineers		of Environmental
DI	De-ionized		Conservation
DNAPL	Dense non-aqueous phase	NYSDOH	New York State Department
	liquid		of Health
DO	Dissolved oxygen	0.D.	Outside diameter
DOT	Department of	PAH	Polycyclic aromatic
	Transportation		hydrocarbon
DTB	Depth to bottom	PID	Photoionization detector
DTP	Depth to product	PM10	Particulates less than 10
DTW	Depth to groundwater		micrometers in size
DUSR	Data Usability Report	ppbv	Parts per billion by volume
EDR	Environmental Data	ppm	Parts per million
	Resources, Inc.	PUL	Precision utility locating
Enviroprobe	Enviroprobe Services, Inc.	RCRIS-LQG	Resource Conservation and
ERNS	Emergency Response		Recovery Information
	Notification System		System Large Quantity
FINDS	Facility Index System/		Generator
	Facility Identification	Redox	Reduction/oxidation
	Initiative Program		potential
FOIA	Freedom of Information Act	SCO	Soil Clean up Objective
GPR	Ground-penetrating radar	SCR	Site Characterization Report
H-R	Haeger-Richter, Inc.	SCS	Site Characterization Study
HSA	Hollow-stem auger	SCWP	Site Characterization Work
I.D.	Inside diameter	0.71	Plan
IDW	Investigation-derived waste	SFI	Sanborn Fire Insurance
Langan	Langan Engineering and	0.400	Company
	Environmental Services	SVOC	Semivolatile organic
LNAPL	Light non-aqueous phase	<b>TAI</b>	compound
1.TANU/0	liquid	TAL	Target Analyte List
LTANKS	Leaking Underground	TCL	Target Compound List
	Storage Tank	TOGS	Technical and Operational
Meta	META Environmental, Inc.	LIGEDA	Guidance Series
mg/kg	Milligrams per kilogram	USEPA	United States Environmental
MGP	Manufactured gas plant	11000	Protection Agency
MSL	mean sea level	USGS	United States Geological
			Service

Redox Reduction/oxidation potential

SCO Soil Clean up Objective
SCR Site Characterization Report
SCS Site Characterization Study
SCWP Site Characterization Work Plan
SFI Sanborn Fire Insurance Company
SVOC Semivolatile organic compound

TAL Target Analyte List
TCL Target Compound List

TOGS Technical and Operational Guidance Series
USEPA United States Environmental Protection Agency

USGS United States Geological Service

UST Underground storage tank

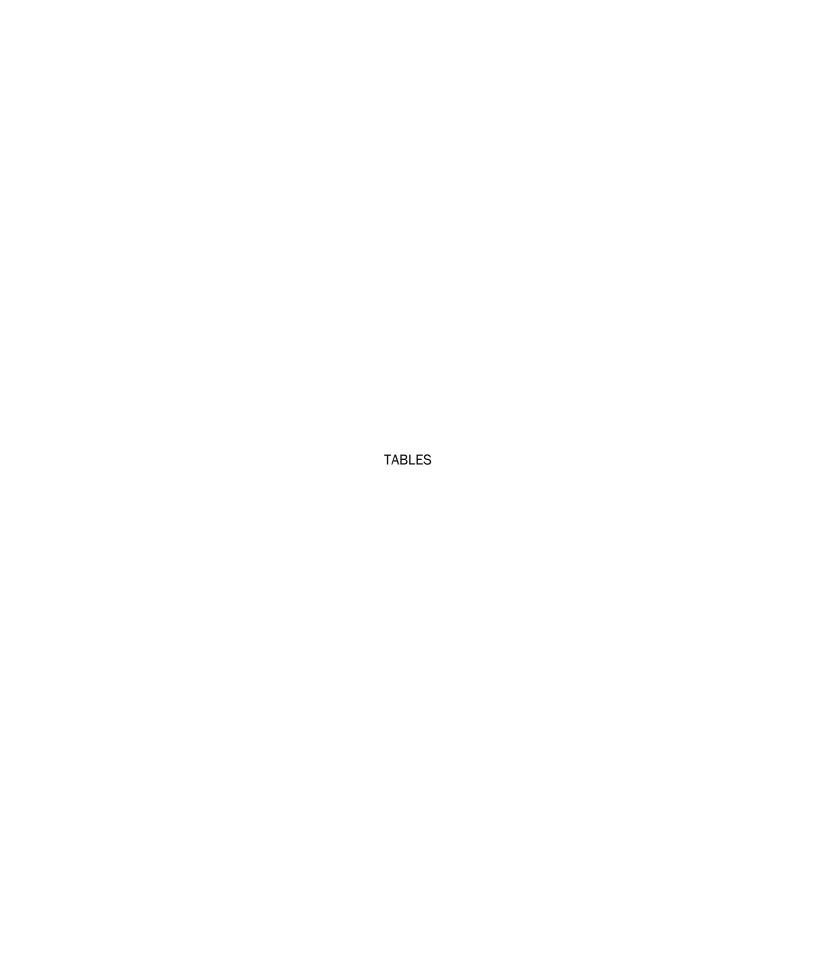
UUSCO Unrestricted Use Soil Clean up Objective

Vactron™ Vacuum excavation system
VCA Voluntary Cleanup Agreement
VOC Volatile organic compounds

μg/L Microgram per liter

µg/m³ Micrograms per cubic meter

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# Table 2-1 Property Owners of Record Hester Street and Canal Street Former MGP Sites Tax Blocks 207 and 208 Manhattan, New York

		Area				
Lot	Area (ft	<sup>2</sup> ) (Acres	s) Zoning	Area (ft²) (Acres) Zoning Property Address	Owner of Record	Owner Mailing Address
Block	207 Hest	er Street	Block 207 Hester Street Onsite Properties	perties		
6	1,920	0 0.04		M1-5B 176 Centre St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
7	2,000	0 0.05		M1-5B 178 Centre St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
0	J			180-82 Centre St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
0	2,346	0.00	MC-TIM	Hester St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
10	2,520	0.06		M1-5B 204-6 Hester St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
12	1,288	8 0.03	M1-5B	202 Hester St	Gee Tai Chong Rity Corp	48 Hester St, New York, NY 10002-4637 C021
0	4 40	9-1		200 Hester St	McWell Properties LLC	51 Hillyer St, Elmhurst, NY 11373
T	T,104	0.00	OC-TIM	130 Baxter St	McWell Properties LLC	51 Hillyer St, Elmhurst, NY 11373
14	2,304	4 0.05	M1-5B	128 Baxter St	Baxter St. Properties LLC	100 Washington Street, Newark, NJ 07102
15	1,368	8 0.03		M1-5B 126 Baxter St	Baxter St. Properties LLC	100 Washington Street, Newark, NJ 07102
Block	Block 207 Offsite Properties	te Proper	ties			
1	6 523	0 15	M1.58	166-72 Centre St	Center Court	235 Canal St, New York NY 10013-4113 C042
É	0,00			233-37 Canal St	Center Court	235 Canal St, New York NY 10013-4113 C042
л	7 185	010	5.1	124 Baxter St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
C	4,10		W-T-DD	174 Centre St	180 Centre St. Prop. LLC	100 Washington Street, Newark, NJ 07102
17	6,750	0 0.15	M1-5B	118-22 Baxter St	Wing Tat Realty LLC	118 Baxter St, New York NY 10013-3602 C042
3	7 / 0			221-27 Canal St	221 Canal St LLC	233 Canal St, New York NY 10013-4112 C042
	1,400	O V.11	AC-TIM	112-16 Baxter St	221 Canal St 11C	233 Canal St. New York NV 10013-1112 C012

Notes

ft<sup>2</sup> Square feet

Hester Street Street Former Manufactured Gas Plant Table 3-1. Monitoring Well Construction Details Site Characterization Study Manhattan, New York

		Total	otal Depth		Diam	Diameter of		Su	Surveyed		S	Surveyed		Screen Depth	epth	Screen
Well	Date	Below	Below		Casing	Boring		Coo	Coordinates		Ele	Elevations		Feet Below	low	Elevation
Number	Installed	TIC	Grade	Type	(in)	(in)	Northing	Easting	Latitude	Longitude	Ground	TOC	TIC	TIC		Feet MSL
MW-01	11/16/06	28.85	29.29	PVC	2	00	200,977.64	984,602.67	984,602.67 40°43'05.93"	73°59'55,42"	20.9	20.86	20.46	19.71 to	28.87	20.86 20.46 19.71 to 28.87 -8.41 to 0.75
MW-03	11/10/06	17.76	18.47	PVC	2	00	201,009.01	984,416.32	40°43'06.38"	73°59'57.79"	18.5	18.46	18.46 17.79		18.05	8.89 to 18.05 -0.26 to 8.90
MW-04	11/9/06	23.00	23.71	PVC	2	œ	200,972.58	984,416.32	40°43'05.86"	73°59'57.89"	17.8	17.82	17.09	14.13 to	23.29	7.82 17.09 14.13 to 23.29 -6.20 to 2.96
MW-07	11/16/06	28.85	29.30	PVC	2	6	200,976.53	984,554.93	984,554.93 40°43'05.19"	73°59'56.04"	22.3	22.30	22.30 21.85	19.72 to	28.88	19.72 to 28.88 -7.03 to 2.13
MW-11	1/18/08	20.00	20.35	PVC	2	ō	201,059.50	984,417.40	984,417.40 40°43'06.1"	73°59'57.8"	17.7	17.67	17.35	10.77 to	19.93	17.67 17.35 10.77 to 19.93 -2.58 to 6.58
MW-12	1/17/08	20.00	20.00 20.34	PVC	2	6	201,055.90	984,469.40	984,469.40 40°43'06.7"	73°59'57.2"	18.6	18.62	18.26	10.76 to	19.92	18.62 18.26 10.76 to 19.92 -1.66 to 7.50

Depths measured in feet.

Monitoring well locations and elevations surveyed on December 7, 2006 by CMX.

PVC: Flush-joint threaded schedule 40 polyvinyl chloride

TOC: Top of outer steel protective casing

TIC: Mean sea level Top of inner PVC well casing

Horizontal Datum: NAD83

Vertical Datum: NGVD29

Vertical Units: U.S. Survey Feet

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Table 3-2. Groundwater Elevations
Site Characterization Study
Hester Street Street Former Manufactured Gas Plant

	KI			~	Manhattan, New York	New York					
Monitoring	Reference		De	Depth to Water	er			Ground	water Eleva	tion <sup>2</sup>	
Well	Elevation 1	11/17/06	12/7/06 1/24/0	1/24/07	1/31/08	2/19/08	11/17/06	12/7/06	1/24/07	1/31/08	2/19/08
MW-01	20.46	22.50	20.42	20.97	23.73	23.51	-2.04	0.04		-3.27	-3.05
MW-03	17.79	17.50	17.36	16.90	Dry	Dry	0.29	0.43	0.89	<0.03	<0.03
MW-04	17.09	18.80	17.25	17.72	20.53	20.89	-1.71	-0.16	-0.63	-3.44	-3.80
MW-07	21.85	23.10	21.65	22.21	24.73	22.95	-1.25	0.20	-0.36	-2.88	-1.10
MW-11	17.35	AN	NA	NA	12.46	17.51	NA	NA	NA	4.89	-0.16
MW-12	18.26	AN	NA	NA	Dry	Dry	NA	NA	NA	<-1.74	<-1.74

### Notes:

All measurements in feet

1: Reference is top of inner casing.

2: Relative to Mean Sea Level, North American Vertical Datum 1929

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Hester Street Street Former Manufactured Gas Plant Site Characterization Study Manhattan, New York Table 3-3. Survey Data

Location SB-01/MW-01 SB-02/SG-1	Date Surveyed 12/7/06 Not surveyed	Northing <sup>(1)</sup> 200,977.64  Not available	Easting <sup>(4)</sup> 984,602.67 Not available	Ground Surface Elevation (2) 20.9	tion (2)  Comments  20.9  Due to access restrictions location could not be surveyed. Location measured with respect to existing structure. Elevation estimated relative to SB-01/MW-01.  Due to access restrictions location rould not be surveyed. Location measured with respect to existing structure. Elevation rould not be surveyed.
SB-03/SG-2	Not surveyed	Not available	Not available	16.0*	Due to access restrictions location could not be surveyed. Location measured with respect to existing structure. Elevation estimated relative to SB-01/MW-01.
SB-04	Not surveyed	Not available	Not available	18.1*	Due to access restrictions location could not be surveyed. Location measured with respect to existing structure. Elevation approximated relative to SB-07/MW-04.
SB-05	Not surveyed	Not available	Not available	19.0*	Due to access restrictions location could not be surveyed, Location measured with respect to existing structure. Elevation approximated relative to SB-06/MW-03.
SB-06/MW-03	12/7/06	201,009.01	984,416.32	18.5	
SB-07/MW-04	12/7/06	200,972.58	984,416.32	17.8	
MW-07	12/7/06	200,976.53	984,554.93	22.3	
MW-11/SG-4	2/4/08	201,059.50	984,417.40	17.7	
MW-12	2/4/08	201,055.90	984,469.40	18.6	
MW-13	Not surveyed	Not available	Not available	17.5*	Sidewalk flag replaced before location could be surveyed; location and elevation are estimated based on data from nearby SB-04, MW-04 and SB-07 and field observations.
MW-14	Not surveyed	Not available	Not available	18.2*	18.2* Sidewalk flag replaced before location could be surveyed; location and elevation are estimated based on data from nearby locations MW-11 and MW-12.
SG-3	2/4/08	200,985.90 984,558.70	984,558.70	20.7	

<sup>(1)</sup> Horizontal Datam: NAD 83

 $N:\project \ensuremath{\mbox{$\backslash$}} 1006 \en$ 

<sup>(2)</sup> Vertical Datum: NGVD29 \* Elevation Estimated

# Table 3-4. Summary of Investigation-Derived Waste Management Site Characterization Study Hester Street Former Manufactured Gas Plant Site Manhattan, New York

Investigation-Derived Waste Material	Cont.	No. of Cont.	Date Removed	Manifest	Transporter	Disposal Facility	Disposal Facility	Material Description	Quantity	Disposal Quantity Method Source	Source
Drill Cuttings	Drum	ω	11/1/06	BL122896	AIVS	11/1/06	CENJ	<b>Drill Cuttings</b>	900 P	Landfill SB-04	SB-04
Drill Cuttings	Drum	Д	11/3/06	BL122963	AIVS	11/3/06	CENJ	Drill Cuttings	300 P	Landfill SB-04	SB-04
Drill Cuttings	Drum	2	11/7/06	11/7/06 BL123061	AIVS	11/7/06	CENJ	Drill Cuttings	400 P	Landfill SB-04	SB-04
Drill Cuttings	Drum	00	11/10/06	BL123161	AIVS	11/10/06	CENJ	Drill Cuttings	3000 P	Landfill	Landfill SB-02; SB-05; SB-06; SB-07
Drill Cuttings	Drum	4	11/17/06	11/17/06 BL123360	AIVS	11/17/06	CENI	Drill Cuttings	1600 P	Landfill MW-07	MW-07
Well Develop. Water	Drum	12	11/17/06	BL123360	AIVS	11/17/06	CENJ	Non Haz Liq	400 P	POTW	Well development/Decon
Well Develop. Water	Drum	1	12/7/06	BL123817	AIVS	12/7/06	CENJ	Non Haz Liq	55 G	POTW	Well purging for sampling
Drill Cuttings	Drum	o	1/21/08	BL136393	AIVS	1/21/08	CENJ	Drill Cuttings	1800P	Landfill	MW-11; MW-12; MW-13; SG-
Well Develop. Water	Drum	Ъ	1/21/08	BL136393	AIVS	1/21/08	CENJ	Non Haz Liq	55G	POTW	Well purging for sampling
Well Develop, Water Notes:	Drum	ω	1/31/08	BL136868	AIVS	1/31/08	CENJ	Non Haz Liq	600P	POTW	Well purging for sampling
CENJ	Auchter Clean Ea	Industri	al Vac Servio lorth Jersey,	ce, 4801 Sou 105 Jacobus	Auchter Industrial Vac Service, 4801 South Wood Avenue, Linden, New Jersey 0703 Clean Earth of North Jersey, 105 Jacobus Avenue, South Kearny, New Jersey 07032	ue, Linden, N th Kearny, Ne	ew Jersey w Jersey (	Auchter Industrial Vac Service, 4801 South Wood Avenue, Linden, New Jersey 07036-6543 Clean Earth of North Jersey, 105 Jacobus Avenue, South Kearny, New Jersey 07032			
Cont	Container	97									
Drum	55-gallon drum	n drum									
G	Gallons										
P	Pounds										
No.	Number										
POTW	Publicly	owned t	Publicly owned treatment works	orks							

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Table 4-1. Sample Summary
Site Characterization Study
Hester Street Former Manufactured Gas Plant
Manhattan, New York

	Sample Depth		Sample	Field Sample	Laboratory	3						
Sample Location	(feet bgs)	Ref. Elev.	Elevation	Identification	Identification	SDG	Lab	Sample Date	Matrix	Sample Type	Matrix Sample Type Parameters Analyzed Purpose	d Purpose
Soil Samples												
SB-01	22.0 to 22.5	20.9	-1.6 to -1.1	SB01	X5546-01	X5546	CT	11/16/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval above water table
SB-02	9.5 to 10.0	16.0*		SB02	X5388-02	X5388	CT	11/8/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval at bottom of boring
SB-04	6	18.1*	6	SB04	X5264-01	X5264	CT	11/1/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval above water table
	ಕ	ine I	ಕ	FP-1	SH061122-01	N/A	Meta	11/3/06	Soil	Soil Grab	Fingerprint	Zone of heavy staining
	26.0 to 26.5	U	ಕ	SB04B	X5388-03	X5388	CT	11/7/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Highest PID reading
SB-05	0.5 to 1.0	19.0*	18.0 to 18.5	SB05	X5264-02	X5264	CT	10/31/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Shallow fill; soil boring encountered
SB-06	11.3 to 11.8	18.5	6.7 to 7.2	SB06A	X5388-05	X5388	2	11/10/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval above first water, water
												table subsequently determined to be deeper
	18.5 to 19.0	18.5	-0.5 to 0.0	SB06B	X5388-04	X5388	CT	11/10/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Highest PID reading
SB-07	to	17.8	ō	SB07A	X5388-06	X5388	CT	11/9/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Stained soils
	28.0 to 28.5	17.8	-10.7 to -10.2		X5388-07	X5388	CT	11/9/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval at bottom of boring
MW-07	22.3 to 22.8	22.3	-0.5 to 0.0	MW-07	X5546-03	X5546	CT	11/16/06	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval above water table
MW-11	8.0 to 8.5	17.7	9.2 to 9.7	ALL-WM	892873	P925	TA	1/17/08	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Unsaturated above water table
	20.0 to 20.5	17.7	-2.8 to -2.3	MW-11B	893580	Q024	TA	1/18/08	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval at bottom of boring
MW-12	5.0 to 6.5	18.6	12.1 to 13.6	MW-12A	892874	P925	TA	1/17/08	Soil	Soil Grab	VOC, SVOC, Mtl, CN	Shallow fill unsaturated sample
	11.5 to 12.0	18.6	6.6 to 7.1	MW-12B	892875	P925	TA	1/17/08	Soil	Soil Grab	VOC, SVOC, Mtl, CN	6-inch interval above water table
	17.6 to 18.6	18.6	0.0 to 1.0	MW-12C	892876	P925	TA	1/17/08	Soil	Soil Grab	VOC, SVOC, MII, CN	Highest saturated PID reading
Groundwater Samples	11	200	2	A CANA	CC V VOID	VED44	3	3017100	A 1	2000	NO STOCK AND ON	Outros
TO-AAIA	24.02	20.40	2.0	TO-MIN	X5814-03	V2624	2 5	1/21/00	AG	GW Grab	VOC. SVOC, MIU, CN	Groundwater
	23.73	20,46	် သိ	MW-01	895/63	Q362	IA	1/31/08	Aq	GW Grab	VOC, SVOC, Mtl, CN	Groundwater
MW-04	17.25	17.09	-0.2	MW-04	X5814-04	X5814	7 0	12/7/06	Aq	GW Grab	VOC, SVOC, Mtl, CN	Groundwater
MW-07	21.65	21 85	0 0	MW-07	X5814-05	X5814	CT :	10/7/06	Δ.	GW Grah	VOC SVOC MIL CN	Groundwater
	24.73	21.85	-2.9	MW-07	895765	Q362	TA :	1/31/08	Aq	GW Grab	VOC, SVOC, Mtl, CN	Groundwater
MW-11	12.46	17.35	4.9	MW-11	895766	Q362	ΑT	1/31/08	Aq	GW Grab	VOC, Mtl, CN	Groundwater
	12.46	17,35	4.9	MW-11	899655	Q991	TA	2/21/08	Aq	GW Grab	SVOC	Replacement aliquot for SVOC
Soil Gas Samples												
SB-02	0.5 to 0.8	16.0*	15.2 to 15.5	SG1-128	ЗНЭХВ	H6K090105	TA	11/8/06	Gas	Soil Gas	VOC	Soil gas
SB-03	0.5 to 0,8	16.0*	15.2 to 15.5	SG2-126	ун9х9	н6К090105	TA	11/8/06	Gas	Soil Gas	VOC	Soil gas
SG-3	7.0 to 7.5	20.7	13.2 to 13.7	SG-3(7.5FT)	738661	NY123859	TA	1/17/08	Gas	Soil Gas	VOC	Soil gas
SG-4	6.5 to 7.0	17.7	10.7 to 11.2	SG-4(6.5FT)	738662	NY123859	TA	1/17/08	Gas	Soil Gas	VOC	Soil gas
<b>Quality Control Samples</b>	mples											
Field Blank	N/A	N/A	N/A	FB11106	X5264-04	X5264	CT	11/1/06	Aq	QC-FB	VOC, SVOC, Mtl, CN	Quality Control
Trip Blank	N/A	N/A	N/A	TB111006	X5388-01	X5388	CT	11/10/06	Aq	QC-ТВ	Voc	Quality Control
Trip Blank	N/A	N/A	N/A	TB111706	X5546-04	X5546	CT	11/16/06	Aq	QC-TB	VOC	Quality Control

# Table 4-1. Sample Summary Site Characterization Study Hester Street Former Manufactured Gas Plant Manhattan, New York

Sample Location	Sample Depth	Ref. Elev.	Sample	Field Sample Identification	Laboratory	SDG	Lab	Sample Date	Matrix	Sample Type	Sample Date Matrix Sample Type Parameters Analyzed Purpose	Purpose
SB-01	22.0 to 22.5	20.9	-1.1 to -1.6	DUP-01	X5546-02	X5546	CT	11/16/06	Soil	QC-Dup	VOC, SVOC, Mtl, CN	Quality Control
Field Blank	N/A	N/A	N/A	FB120706	X5814-01	X5814	CT	12/7/06	Aq	QC-FB	VOC, SVOC, Mtl, CN	Quality Control
rip Blank	N/A	N/A	N/A	TB120706	X5814-02	X5814	CT	12/7/06	Aq	QC-ТВ	VOC	Quality Control
ield Blank	N/A	N/A	N/A	FB11708	892872	P295	ΤA	1/17/08	Aq	QC-FB	VOC, SVOC, Mtl, CN	Quality Control
rip Blank	N/A	N/A	N/A	TB11708	892871	P295	ΤA	1/17/08	Aq	QC-ТВ	VOC	Quality Control
MW-01	23.73	N/A	N/A	DUP-13108	895767	Q362	TA	1/31/08	Aq	QC-Dup	VOC, SVOC, Mtl, CN	Quality Control
ield Blank	N/A	N/A	N/A	FB13108	895762	Q362	TA	1/31/08	Aq	QC-FB	VOC, SVOC, Mtl, CN Quality Contro	Quality Control
rip Blank	N/A	N/A	N/A	TB13108	895761	Q362	TA	1/31/08	Aq	91-30	VOC	Quality Control
ield Blank	N/A	N/A	N/A	FB021908	899656	Q991	TA	2/19/08	Aq	QC-FB	SVOC	Quality Control

N/A	Mtl	Meta	Lab	CT	CN	bgs	Aq	*
Not applicable	Target Analyte List Metals by SW-846 6000/7000 serie	Meta Environmental, Inc. Watertown, Massachusettes	Analytical testing laboratory	Chemtech, Mountainside, New Jersey	Total cyanide by SW-846 Method 9012	Below ground surface	Aqueous	Estimated elevation

Notes:

Mtl Target Analyte List Metals by SW-846 6000/7000 series methodologies N/A: Not applicable QC-Dup Quality control laboratory-blind duplicate sample

QC-Dup Quality control faboratory-blind duplicate sample
QC-FB Quality control field blank sample
QC-TB Quality control trip blank sample
Ref. Elev: Reference elevation: Ground surface for soil and soil gas sam

SDG SVOC Sample Delivery Group Reference elevation: Ground surface for soil and soil gas samples, top of inner well casing for groundwater samples Quality control trip blank sample

SVOC Semi-volatile organic compounds by SW-846 Method 8270C

TA Test America (Formerly Severn Trent Laboratories), Edison, New Jersey

VOC Volatile organic compounds by SW-846 Method 8260B

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# Table 4-2. Summary of Organic Vapor Readings and Field Observations Site Characterization Study Hester Street Former Manufactured Gas Plant Manhattan, New York

			Depth	PID			
Date	Time	Location	(feet bgs)	Reading	Odors Noted	Visible impacts	Comments
11/1/06	11:00	SB-01/MW-01	0.0-2.0 <sup>(a)</sup>	ND	None	None	
11/1/06	12:00	SB-01/MW-01	2.0-4.0 <sup>(a)</sup>	ND	None	None	
11/16/06	14:52	SB-01/MW-01	5.0-6.0	ND	None	None	
11/16/06	15:00	SB-01/MW-01	7.0-8.0	ND	None	None	
11/16/06	15:10	SB-01/MW-01	9.0-9.5	ND	None	None	
11/16/06	15:15	SB-01/MW-01	11.0-11.5	ND	None	None	
11/16/06	15:30	SB-01/MW-01	13.0-13.5	ND	None	None	
11/16/06	15:40	SB-01/MW-01	15.0-16.4	ND	None	None	Spoon refusal at 16.4 ft
11/16/06	15:50	SB-01/MW-01	17.0-18.5	ND	None	None	
11/16/06	16:00	SB-01/MW-01	19.0-20.0	ND	None	None	
11/16/06	16:10	SB-01/MW-01	21.0-22.5	ND	None	None	Sample SB01 at 22.0 to 22.5 feet
11/16/06	16:20	SB-01/MW-01	23.0-24.5	ND	None	None	
11/16/06	16:30	SB-01/MW-01	25.0-26.5	ND	None	None	
11/8/06	9:30	SB-02	0.5-5.0	ND	None	None	
11/8/06	10:20	SB-02	5.0-10.0	ND	None	None	Sample SB02 at 9.5 to 10.0 feet
10/30/06	12:50	SB-04	0.0-2.0 <sup>(a)</sup>	ND	None	None	
10/30/06	13:30	SB-04	2.0-4.0 <sup>(a)</sup>	ND	None	None	
11/1/06	9:30	SB-04	5.0-7.0 <sup>(b)</sup>	ND	None	None	
11/1/06	9:40	SB-04	7.0-9.0 <sup>(b)</sup>	ND	None	None	
11/1/06	9:45	SB-04	9.0-10.0	ND	None	None	
11/1/06	9:50	SB-04	11.0-11.5	ND	None	None	
11/1/06	10:10	SB-04	13.0-13.8	ND	None	None	
11/1/06	10:15	SB-04	15.0-17.0 <sup>(b)</sup>	ND	None	None	
11/1/06	10:20	SB-04	17.0-18.0	ND	None	None	
11/1/06	10:30	SB-04	19.0-20.0	ND	None	None	Sample SB04 at 19.5 to 20.0 feet
11/1/06	10:35	SB-04	21.0-22.5	ND	None	None	
11/1/06	10:45	SB-04	23.0-24.0	0.1	Hydrocarbon	Stain/sheen	Sample FP-1 and SB04B at 26.0 to 26.5 feet
11/1/06	10:50	SB-04	25.0-27.0	40.1	Hydrocarbon	Stain/sheen	
11/1/06	11:10	SB-04	27.0-29.0	4.1	Hydrocarbon	Stain/sheen	
11/1/06	12:00	SB-04	29.0-30.0	ND	Hydrocarbon	Stain/sheen	
11/1/06	12:10	SB-04	31.0-33.0 <sup>(b)</sup>	ND	Hydrocarbon	Stain/sheen	
11/2/06	10:55	SB-04	33.0-33.5	ND	None	None	
11/2/06	11:30	SB-04	35.0-37.0 <sup>(b)</sup>	ND	None	None	
11/2/06	12:00	SB-04	37.0-39.0 <sup>(b)</sup>	ND	None	None	
11/2/06		SB-04	39.0-41.0 <sup>(b)</sup>	ND	None	None	
11/2/06	13:20	SB-04	41.0-41.5	ND	None	None	
11/2/06	13:40	SB-04	43.0-44.0	ND	None	None	
11/2/06	14:05	SB-04	45.0-47.0 <sup>(b)</sup>	ND	None	None	
11/2/06	14:20	SB-04	47.0-49.0 <sup>(b)</sup>	ND	None	None	
11/3/06	9:15	SB-04	49.0-49.8	ND	None	None	
11/3/06	9:25	SB-04	51.0-52.0	ND	None	None	
11/3/06	9:46	SB-04	53.0-53.8	ND	None	None	
11/3/06	10:00	SB-04	55.0-57.0 <sup>(b)</sup>	ND	None	None	
11/3/06	11:15	SB-04	57.0-57.5	ND	None	None	
11/3/06	11:30	SB-04	59.0-59.7	ND	None	None	
11/3/06	12:30	SB-04	61.0-62.5	ND	None	None	
11/3/06	12:40	SB-04	63.0-63.8	ND	None	None	
11/3/06	14:00	SB-04	65.0-66.5	ND	None	None	
11/3/06	15:00	SB-04	67.0-69.0	ND	None	None	
11/3/06	15:50	SB-04	69.0-71.0	ND	None	None	
11/6/06	10:00	SB-04	71.0-72.0	ND	None	None	

#### Table 4-2. Summary of Organic Vapor Readings and Field Observations Site Characterization Study

#### Hester Street Former Manufactured Gas Plant Manhattan, New York

Date	Time	Location	Depth (feet bgs)	PID Reading	Odors Noted	Visible impacts	Comments
11/6/06	10:25	SB-04	73.0-74.5	ND	None	None	
11/6/06	11:00	SB-04	75.0-76.0	ND	None	None	
11/6/06	11:30	SB-04	77.0-78.5	ND	None	None	
11/6/06	13:45	SB-04	79.0-80.5	ND	None	None	
11/6/06	14:00	SB-04	81.0-82.8	ND	None	None	
11/6/06	15:45	SB-04	83.0-84.8	ND	None	None	
11/7/06	10:40	SB-04	85.0-86.5	ND	None	None	
11/7/06	11:00	SB-04	87.0-89.0	ND	None	None	
11/7/06	12:30	SB-04	89.0-89.9	ND	None	None	Bedrock refusal at 89.9 feet
11/7/06	14:30	SB-04	90.0-95.0	N/A	None	None	
10/31/06		SB-05	0.0-2.0 <sup>(a)</sup>	ND	None	None	Sample SB05 at 0.5 to 1.0 feet
10/31/06		SB-05	2.0-5.0 <sup>(a)</sup>	ND	None	None	
11/9/06	14:00	SB-05	5.0-6.0	ND	None	None	
11/9/06	14:05	SB-05	7.0-7.5	ND	None	None	
11/9/06	14:30	SB-05	9.0-9.7	ND	None	None	Degraded concrete pad at 9.9 feet.
10/31/06	9:00	SB-06/MW-03	0.0-3.0 <sup>(a)</sup>	ND	None	None	D. maan astration banks are then
10/31/06	10:00	SB-06/MW-03	3.0-5.0 <sup>(a)</sup>	ND	None	None	
11/10/06	8:15	SB-06/MW-03	5.0-5.5	ND	None	None	
11/10/06	8:30	SB-06/MW-03	7.0-7.1	0.2	Creosote	Oil material	Wood covered with oil
11/10/06	8:45	SB-06/MW-03	9.0-10.0	ND	Creosote/oil	Sheen	Hood covered with oil
11/10/06	9:00	SB-06/MW-03	11.0-12.5	ND	Creosote	Oil stain	Sample SB06A at 11.3 to 11.8 feet
11/10/06	9:05	SB-06/MW-03	13.0-14.8	26.5	Creosote	Sheen	Sample SBOOK at 11.5 to 11.6 feet
			15.0-17.0 <sup>(b)</sup>				Subsurface void augors clipped from 15 to 17 feet
11/10/06	9:15	SB-06/MW-03		ND	None	None	Subsurface void, augers slipped from 15 to 17 feet
11/10/06	9:25	SB-06/MW-03	17.0-19.0	40.2	Creosote	None	Sample SB06B at 18.5 to 19.0 feet
11/10/06	9:30	SB-06/MW-03	19.0-21.0	3.3	Creosote	None	
11/10/06	9:45	SB-06/MW-03	21.0-23.0	1.0	Creosote	Sheen	
11/10/06	9:55	SB-06/MW-03	23.0-24.5	10.0	Creosote	Black stain	
11/10/06	200 00 00 00	SB-06/MW-03	25.0-27.0	7.1	Creosote	Stain/sheen	
11/10/06	-	SB-06/MW-03	27.0-28.5	8.0	Creosote	Stain/sheen	
11/10/06		SB-06/MW-03	29.0-30.8	3.2	Creosote	Stain/sheen	Seam of concrete at 30 feet
11/10/06		SB-06/MW-03	31.0-32.8	5.0	None	None	Creosote odor and sheen to 31.5 feet
11/10/06		SB-06/MW-03	33.0-34.5	ND	None	None	
10/30/06	9:00	SB-07/MW-04	0.0-3.0 <sup>(a)</sup>	ND	None	None	
		SB-07/MW-04	3.0-5.0 <sup>(a)</sup>	ND	None	None	
11/8/06	make the state of the	SB-07/MW-04	5.0-5.5	ND	None	None	
11/8/06	1000000	SB-07/MW-04	7.0-9.0 <sup>(b)</sup>	ND	None	None	
11/8/06		SB-07/MW-04	9.0-11.0 <sup>(b)</sup>	ND	None	Sheen	Sheen on split-spoon from 9.0 to 11.0 feet
11/8/06		SB-07/MW-04	11.0-11.5	ND	None	None	
11/8/06		SB-07/MW-04	13.0-15.0 <sup>(0)</sup>	ND	None	None	
11/8/06		SB-07/MW-04	15.0-15.5 17.0-19.0 <sup>(b)</sup>	ND	None	None	
11/9/06	8:05	SB-07/MW-04		ND	None	None	
11/9/06	8:20	SB-07/MW-04	19.0-21.0	ND	None	None	
11/9/06	8:30	SB-07/MW-04	21.0-23.0	ND	None	None Shoon/Stain	Comple CD074 from 22 E to 24 0 foot
11/9/06	8:40	SB-07/MW-04	23.0-24.0	ND	None	Sheen/Stain	Sample SB07A from 23.5 to 24.0 feet
11/9/06	8:45	SB-07/MW-04	25.0-26.5	ND	None	None	Cample CD07D fr 00 0 +- 00 7 /
11/9/06	9:00	SB-07/MW-04	27.0-28.5	ND	None	None	Sample SB07B from 28.0 to 28.5 feet
11/1/06	8:30	MW-07	0.0-3.0 <sup>(a)</sup>	ND	None	None	
11/1/06	9:00	MW-07	3.0-5.0 <sup>(a)</sup>	ND	None	None	
11/16/06	10:16	MW-07	5.0-7.0 <sup>(b)</sup>	ND	None	None	
11/16/06	10:30	MW-07	7.0-9.0 <sup>(b)</sup>	ND	None	None	
11/16/06		MW-07	9.0-9.5	ND	None	None	

#### Table 4-2. Summary of Organic Vapor Readings and Field Observations Site Characterization Study

#### Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

Date	Time	Location	Depth (feet bgs)	PID Reading	Odors Noted	Visible impacts	Comments
11/16/06	10:45	MW-07	12.0-12.5	ND	None	None	
11/16/06	10:50	MW-07	14.0-14.3	ND	None	None	
11/16/06	11:00	MW-07	19.0-20.5	ND	None	None	
11/16/06	11:15	MW-07	21.0-22.8	ND	None	None	Sample MW07 from 22.3 to 22.8 feet
11/16/06	11:20	MW-07	23.0-24.5	ND	None	None	
11/16/06	11:50	MW-07	25,0-26,5	ND	None	None	
11/16/06	12:00	MW-07	27.0-28.5	ND	None	None	
11/16/06	12:15	MW-07	29.0-30.8	ND	None	None	
1/15/08	10:30	MW-11	0.0-3.0 <sup>(a)</sup>	ND	None	None	
1/15/08	12:00	MW-11	3.0-5.0 <sup>(a)</sup>	ND	None	None	
1/17/08	13:40	MW-11	5.0-7.0 <sup>(b)</sup>	ND	None	None	
1/17/08	13:50	MW-11	7.0-8.4	ND	None	None	Sample MW11A from 7.9 to 8.4 feet
1/17/08	14:05	MW-11	9.0-9.2(0)	ND	None	None	Refusal on plastic at 9.2 feet
1/17/08	14:15	MW-11	11.0-13.0 <sup>(b)</sup>	ND	None	None	
1/17/08	14:30	MW-11	13.0-13.5	ND	None	None	
1/18/08	8:10	MW-11	15.0-15.1	ND	None	None	
1/18/08	8:20	MW-11	17.0-17.3	ND	None	None	
1/18/08	8:30	MW-11	19.0-20.5	ND	None	None	Sample MW11B from 20.0 to 20.5, refusal at 20.6.
1/16/08	7:45	MW-12	0.0-3.0 <sup>(a)</sup>	ND	None	None	
1/16/08	10:10	MW-12	3.0-5.0 <sup>(a)</sup>	ND	None	None	
1/17/08	10:00	MW-12	5.0-6.5	ND	None	None	Sample MW12A from 5.0 to 6.5 feet
1/17/08	10:10	MW-12	7.0-7.8	ND	None	None	
1/17/08	10:20	MW-12	9.0-11.0 <sup>(b)</sup>	ND	None	None	
1/17/08	10:30	MW-12	11.0-13.0	15.8	fuel oil	None	Sample MW12B from 11.5 to 12.0
1/17/08	10:40	MW-12	13.0-13.8	0.1	fuel oil	None	
1/17/08	10:50	MW-12	15.0-16.8	4.2	fuel oil	slight staining	
1/17/08	11:00	MW-12	17.0-18.6	47.2	fuel oil	black staining	Sample MW12C from 17.6 to 18.6 feet
1/17/08	11:15	MW-12	19.0-20.6	ND	None	None	Refusal at 20.6 feet
1/15/08	8:00	MW-13	0.0-3.0 <sup>(a)</sup>	ND	None	None	
1/15/08	10:00	MW-13	3.0-5.0 <sup>(a)</sup>	ND	None	None	
1/17/08	8:35	MW-13	5.0-7.0 <sup>(b)</sup>	ND	None	None	
1/17/08	8:45	MW-13	7.0-9.0 <sup>(b)</sup>	ND	None	None	spoon refusal at 9.1 feet
1/15/08	13:10	MW-14	0.0-3.0 <sup>(a)</sup>	ND	None	None	
1/15/08	14:15	MW-14	3.0-5.0 <sup>(a)</sup>	ND	None	None	
1/18/08	10:30	MW-14	5.0-5.1	ND	None	None	Spoon refusal at 5.1 feet.

#### Notes

Readings for total organic vapors in relative parts per million as isobutylene

Sample depths measured in feet below grade

bgs Depth interval of recovered soil in feet below ground surface.

(e) Readings from cuttings generated during soft dig activities

(b) No recovery, readings from empty spoon and top of open borehole

ft Feet

ND Not detected above background PID Photoionization detector

N:\project\2006\0600998\01\SCR\SCR Tables\[Table 4-2 PID Summary.xls]Sheet1

Table 4-3. Soil Sample Results
Site Characterization Study
Hester Street Former Manufactured Gas Plant
Manhattan New York

											Manhattan, New York							
						Field Samp Laboratory	Sample Location Field Sample Identification Laboratory Sample Number		01 21 6-01	SB02 X5388-02	SB-04 SB04 X5264-01	SB-04 SB04B X5388-03	SB-05 SB05 X5264-02	SB-06 SB06A X5388-05 41710/06	SB-06 SB06B X5388-04	SB-07 SB07A X5388-06 11/9/06	SB-07 SB078 X5388-07	MW-07 MW-07 X5546-03
Parameters	CASRN	SUCCO	SCO	RRSCO	Sam Ground CSCO	nple Depth (fe Surface Elevi Sample Elevi SCO ERS	Sample Depth (feet below grade) Ground Surface Elevation (feet MSL) Sample Elevation (feet MSL) ISCO ERSCO (6WSCO)	22 to 22.5 20 to 22.5 20.9 -1.6 to -1.1	JOE TO THE PERSON NAMED IN COLUMN TO	11/4/00 9.5 to 10 16.0* 6 to 6.5 Conc 0 MDL	19.5 to 20 19.5 to 20 18.1* -1.9 to -1.4 Conc 0 MDL	14//00 25 to 26 18.1* -8.4 to -7.9 Conc 0 MDL	19.0* 19.0* 18 to 18.5 Conc 0 MDL	11,310,100 11,310,11.8 18.5 6.7 to 7.2 Conc 0 MDL	18.5 to 19 18.5 -0.5 to 0 Conc Q MDL	23.5 to 24 23.5 to 24 17.8 -6.2 to -5.7 Conc Q MDL	28 to 28.5 17.8 -10.7 to -10.2 Conc Q MDL	22.3 to 22.8 22.3 -0.5 to 0
Volatile Organic Compounds (VOC)	20.00	1					11		0.140	80			32	×		0.080	0.065 JX 0.140	0.052 J 0.140
Acetone	71 432						70 0.05		0.029		F	, ,	٥	×	9	5	X	2
Bromodichloromethane	75-27-4	A	NA	N		NA	Z	2									111	
Bromoform	75-25-2		NA	NA:		NA	NA	n :			Э.					0.029	- UX 0.028	
Bromomethane	78-03-9	NA NA	NA NA	Z Y	FOO P	NA 1000	n	, ,	0.029	0 0.03	0.25 J 0.71	0 0,029	0 0.027	UX 0.140	0.023	0 0.029	- UX 0.140	0 0.140
Carbon Disulfide	75-15-0	NA	NA	NA	NA	Z	Z	,	0.029	U 0.03	- U 0.71	0 0.029	. U 0.027	- UX 0.029	- U 0.029	0 0.029	- UX 0.028	
Carbon Tetrachloride	56-23-5	0.76				NS	t 0	0 -										10
Chlorobenzene	108-90-7	1.1			500 k	1,000 4	40 1.1	,			0.71 U 0.71	0 0.029	- U 0.027	UX 0.029	0.029	0.029	UX 0.028	0.028
Chloroform	67-66-3	0.37 NA	10 NA	49 NA	350	700	12 0.37		0.029	0 0.03	0 0.71	0 0.029	0 0.027	UX 0.029		- U 0.029		
Chloromethane	74-87-3	NA	NA	NA	NA	NA	ž	0				- U 0.029	=	1		- U 0.029		- U 0.028
Dibromochloromethane	124-48-1	N.	NA CA	NA NA	NA NA		NA COS			. U 0.03	. U 0.71	0 0.029	U 0.027	- UX 0.029	U 0.029	0.029	UX 0.028	0 0.028
1,1-Dichloroethane	107-06-2		23			60 NS	10 0.02	, ,		0.03	0 0 0.71	0 0.029				0 0.029		
1,1-Dichloroethene	75-35-4	N	100 a	m	500 k 1,0	I NS		3	0.029	Ė				1		1		
cis-1,2-Dichloroethene	156-59-2		59	æ		1,000 I NS	f 0.25	n -						38	0.029		- UX 0.028	J.
trans-1,2-Dichloroethene	156-60-5	AIA	100 a	AN	500 K		T 0.19		0.029	0 0.03	0 0.71	0 0.029	0 0.027	0.029 VIII	0.029	0 0.029	0X 0.028	- U 0.028
cis-1,3-Dichloropropene	10061-01-5	NA	NA	NA		NA	NA	1	J.					1.	-			
trans-1,3-Dichloropropene	10061-02-6	NA	NA	NA	NA	NA	NA	D .		- U 0:03	- U 0.71	- U 0,029	- U 0.027	- UX 0.029	- U 0.029	- U 0.029	5-2	× U 0.028
Ethylbenzene	100-41-4	1	30	41	390	780 NS	f 1	n .	Ы		Ė	- U 0.029				2	N	
2-Hexanone	591-78-6		NA			NA	NA.	ח	0.140	0 0.15	0 3.60	0 0.150	00.130	UX 0.140	- U 0.15	0.140	UX 0.140	0.140
4-Metnyl-2-pentanone	108-10-1	NA	NA		NA .	Y.	Ž	0 041						047.0 V0	1	1		
Metnylene Chloride	100-42-5	NA NA	DI	TOO B	NA NA		NA C			, 0		, ,		×	٥	, ,		D
1,1,2,2-Tetrachloroethane	79-34-5		NA		NA	NA A	NA	,	10		, U 0.71	7		- UX 0.029	>	- U 0.029	- UX 0.028	
Tetrachloroethene	127-18-4	1.3	5.5	19	150	300	2 1.3	0						š		Tit.	100	3
Toluene	108-88-3	0.7	100 a	100 a	×		36	ם -	-		- U 0.71					0	5.0	
1,1,1-Trichloroethane	71-55-6	89	100 a	100 a	500 k	1,000 I NS	f 0.68	> =			0.71	0.029	0.027 U 0.027	UX 0.029	0.029	0.0029	UX 0.028	0 0.028
1,1,2-Irichloroethane Trichloroethene	79-01-6	0.47	10	21 21	200	400	2 0.47	, ,	0.029	0.03	- 0 0.71		L	-				
Vinyl Chloride	75-01-4	Ö	0.21	6.0		27 NS	4						. U 0,027	Š	0.0			
o-Xylene	95-47-6	NA						)	0.029	0.03	0 0.71	0.029	0 0.027	0.01 JX 0.029	42 D 7.3	0 0.029	0.028	0.028
m/p-Xylenes	126/1/-61	NA				,								< =	2 =			
Xylene (Total)	1330-20-7	0.26	100 a	100 a	500 k 1,0	1,0001 0.26	26 1.6	0.041	N/A		5			N/A	0		. 1	-11
Total BTEX									N/A	N/A	0.92 N/A	N/A	N/A	0.0348 N/A	252.9 N/A	- N/A	N/A	N/A
Semivolatile Organic Compounds (SVOC)	(NOC)																	
Acenaphthene	83-32-9	Н	100 a		500 k 1,0	ON .	20 98	<b>5</b>	1.90 XI	0.40	2.1 0.37	U 0.37	UX 18	0 3.80	17 D 9.6	0.39	0.26 J 0.76	0 0.37
Acenaphinylene	120-12-7	<i>a a</i>	100 a	מו מו	q.	1,000 I NS	1	3									, -	Įį.
Benzo(a)anthracene	56-55-3		10	0		TH		'n .	06.1 X	, U 0.40	0.52 0.37	- U 0.37	. UX 18	0.67 J 3.80	6.2 1.90	- U 0.39	0.95 0.76	- U 0.37
Benzo(a)pyrene	50-32-8	1 c	10	10	0	2	2.6 22 e	'n	1.90 XU	- U 0.40	0.21 J 0.37	- U 0,37	- UX 18	0 3.80	2.3 1.90	- U 0.39	0.61 J 0.76	- U 0.37
Benzo(b)fluoranthene	205-99-2	o	10	10			ţ	'n.			10					Ĺ	5	
Benzo(g,h,i)perylene	191-24-2		100 a	100 a	500 k 1,0	1,000 I NS	f 1,(	<b>D</b>	1.90 XI		. U 0.37		- UX 18	0 3.80	) 1		-	
Benzo(k)fluoranthene	111.91.1	0.8 c	1 NA	3.9 AN	20		f 1.7	2 5	0X1 X1	0 0.40	0 0.37	0 0.37	UX 18	0 3.80	0.68 7 1.90	0.39	0.25 J 0.76	0 0.37
bis(2-Chloroethyl)Ether	111-44-4					N N		'n				E					92.0 U -	n
bis(2-Ethylhexyl)phthalate	117-81-7				NA	NA	NA	j			0.14 J 0.37							0.25 J 0.37
4-Bromophenyl-phenylether	101-55-3					AN :		2			1					0.39		0 0.37
Butylbenzylphthalate	85-68-7	NA NA		Y Y		AN AN		2 5	1.90 xx	0.40	0 0.37				1.90 -		0.17 1 0.76	
4-Chloro-3-Methylphenol	59-50-7					N N		Ü	V.	U	U 0.37	- U 0.37	- UX 18	. U 3.80		. U 0.39	n	
4-Chloroaniline	106-47-8					NA		ŭ		i,			3				J.	
2-Chloronaphthalene	91-58-7	NA NA				NA		Ö		0 0.40		0 0.37						
2-Chlorophenol	95-57-8					NA		2			. U 0.37			54	- U 1.90	0.39		0.37
4-Chlorophenyl-phenylether	7005-72-3	Z		N	Z			3			0 0.37	0 0.37	NX 18		0 T.30	0.39	000	0 0.37
Chrysene	218-01-9	10	10	3.9	56	110 NS	f 1000	2 5	OF L XI	0.40	=			3.80	=	L	2	1
Dibenzofuran	132-64-9						-	Ď	1.90 XI	Ú	0			. U 3.80	. 0 1.90		0.7	
1,2-Dichlorobenzene	95-50-1		100 a	100 a			4	'n		0.40 n	- U 0.37	- U 0.37			06.1 U			
1,3-Dichlorobenzene	541-73-1	2.4	17			NS	-	2 5	06.1 X		0.37		NX 18	0 3.80	. U 1.90	0.39	92.0 0 -	. 0 0.37
1,4-Dichlorobenzene	100-40-1		9.8	1	1			3	NY TEST		0		1	0	2		Т	

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See last page for notes.

Table 4-3. Soil Sample Results Site Characterization Study Hester Street Former Manufactured Gas Plant Manhattan, New York

						Fiel	Field Sample Identification Laboratory Sample Number	dentification ple Number	MW-11A 892873		MW-11B 893580	9 P	MW-12A 892874	12A 374	MW-128 892875	m io	MW-12C 892876
	200		Coa	200	9	Sample Date Sample Depth (feet below grade) Ground Surface Elevation (feet MSL) Sample Elevation (feet MSL)	S epth (feet b ce Elevation le Elevation	Sample Date below grade) on (feet MSL) on (feet MSL)	/17/08 .9 to 8.4 17.7 .2 to 9.7	ğ	1/18/08 20 to 20.5 17.7 -2.8 to -2.3	0.5 0.5 2.3 MDI	T 5 7 7	6.5 6.5 6.5 13.6	1/17/08 11.5 to 12 18.6 6.6 to 7.1	2 2 8	1/17/08 17.6 to 18.6 18.6 0 to 1
Volatile Organic Compounds (VOC)	Nucco	100	200	200	1001	1000	0					3000					× =
Acelone	74.49.9	0.00	200	ANA	AA AA	000,1		0.00	2 0		13	0.0011	3		0.220	#####	0.120 ] #####
Bromodichloromethane	75-27-4	3	6.3	NA			NA	NA.		0.0056	n	0.0011	n .	Ţ.,	10	0.24	D
Bromoform	75-25-2			NA	NA	NA	NA	NA	-	0.0045	<b>3</b>	0.0045	2		<b>a</b>	96.0	٥
Bromomethane	74-83-9	NA	NA.	NA 100	NA	NA POOR	NA L	NA O	0 =	0.0056	0 0000	0.0056	) =	0.55	-	1.2	1.0
Carbon Disulfide	75-15-0			NA NA	NA SOO	NA NA	NA	NA NA		+	0.0022	0.0056	,	0.55	)	1.2	0 10
Carbon Tetrachloride	56-23-5	9/	1.4	2.4	22	44	NS +	92.0		-	n .	0.0022	. u		0 -	0.49	0
Chlorobenzene	108-90-7	.1	100 a	100 a	500 k	1,000,1	40	1.1		0.0056	0 .	0.0056	n -	21	0 -	1.2	2
Chloroethane	75-00-3			NA	NA	NA	NA	NA		0.0056	0 5	0.0056	2 3		<b>&gt;</b>	1.2	
Chloromothana	67-66-3	0.37	10	49	320	VA 700	NA 12	NA 0.37	5 5	0.0056		0.0056	, ,	0.55		1.2	10
Dibromochloromethane	124-48-1			NA	NA N	N A	NA	NA		0.0056	2	0.0056	0	1	<b>.</b>	1.2	
.1-Dichloroethane	75-34-3	27	19		240	480	NS f	0.27 n	2	0.0056	n	0.0056	n		n	3.2	
,2-Dichloroethane	107-06-2	0.02 c	2.3	3.1	30		10	0.02	J.	0.0056	<b>&gt;</b> =	0.0022	<b>D</b>		<b>&gt;</b> :	0.49	0.42
1,1-Dichloroethene	158 50 2	0.33	100 a	100 a	500 K		N SN	0.33		0.0022	9 5	0.0022			<b>3</b>	1.2	
trans-1.2-Dichloroethene	156-60-5	0.19	100 a	100 a	500 k	1,000 1	NS +	0.19	E	0.0056	0	0.0056	,	и	0	1.2	
,2-Dichloropropane	78-87-5		10.00	NA	NA	NA	NA	NA	0 0 -	0.0011	n	0.0011	0		n .	0.24	- U 0.21
cis-1,3-Dichloropropene	10061-01-5	NA	-	NA	NA	NA	NA	NA		0.0056	<b>5</b>	0.0056	0		<b>5</b>	1.2	
trans-1,3-Dichloropropene	10061-02-6	NA		NA	NA	NA	NA	NA	<b>5</b>	0.0056	0 3	0.0056	,		<b>D</b>	1.2	0 1.0
Ethylbenzene	100-41-4	H	30	41	390	780	↓ SI	1		0.028	5	0.0045	0 2		24	0.98	12 0.84
2-Hexanone 4-Methyl-2-nentanone	108-10-1	NA	NA	NA	NA NA	NA NA	NA NA	NA NA		0.0056		0.0056		0.55		1.2	0 1.0
Methylene Chloride	75-09-2	50	25	100 a	500 k		12	0.05		1	BL 6100.0	0.028	0		5	0.73	0
rene	100-42-5	3	F	NA	NA	100	NA	NA C	n	1	100	0.0056	0		0	1.2	
,2,2-Tetrachloroethane	79.34-5				NA	NA	NA	NA		0.0011	<b>ɔ</b> :	0.0011	) :		<b>D</b> :	0.24	- U 0.21
Tetrachloroethene	127.18-4	13	2.5	19	150	Ш	2 5	1.3		_	0 -	0.0011	0		2 00	0.24	4 80 U 0.2
Toluene	71.55.6	0.7	100 a	100 a	500 k	1,0001	36 NS f	0.7.0	J.	0.0056	0.0004	0.0056	, .			1.2	1.0
1,1,2-Trichloroethane	79-00-5		NA	NA	NA	2	N	NA	0 0	0.0034	n	0.0034	0	0.73	n	0.33	. U 0.63
Trichloroethene	79.01-6	0.47	10	21	200	400	2	0.47		0.0011	) )	0.0011	<b>D</b>		э ,	0.24	0.0
Vinyl Chloride	75-01-4	0.02	0.21	6.0	13	27	NS +	0.02		0.0056 N/A	5	0.0056 N/A		0.55 A/A	, ,	N/A	N/A
o-Aylene m/b-Xvlenes	126777-61-2									N/A		N/A		N/A		N/A	N/A
Xvlene (Total)	1330-20-7	0.26	100 a	100 a	500 K	1,0001	0.26	1.6	0.0022 J 0	9	ח	0.0056	0.086		55	1.2	26 1
Total VOCs									0,0284	-	0.0376	$\rightarrow$	0.086	N/A	83.12	N/A	39.92 N/A
Total BTEX	to One								0.003		0.0004		0.086	N/A	83.12	N/A	
Semivolatile Organic Compounds (SVCC)	83.32.9	20	100 a	100 a	500 k		20	86	0.41	0.37	0.1	0.37	0.28	0.37	18	0.37	14 0.37
Acenaphthylene	208-96-8	100 a	100 a	100 a	500 k	1,000	NS f	107	0.12	0.37	0.1	0.37	0.15	0.37	3.4	0.37	2.5 J 0.37
Anthracene	120-12-7	100 a	100 a	100 a	500 k		NS f	1,000	0.38	-	0.47	0.37	0.67	0.37	8.4	0.37	
Benzo(a)anthracene	56-55-3	10	10	10	9.6	11	NS +	7	0.65	4	0.79	0.37	1.7	0.37	53	0.37	4.4 0.37
Benzo(a)pyrene	50-32-8	10	10	10	10	1.1	2.6	22 e	0.44	-	0.62	0.37			2.6	0.37	
Benzo(b)fluoranthene	205-99-2	1 c	10	10	5.6	11	NS f	1.7	0.36		0.44	0.37	1.4	4	1.3	0.37	
Benzo(g,h,i)perylene	191-24-2	100	100 a	100 a	500 k	1,000 1	NS F	1,000 e	0.26	0.37	0.25	0.37	0.27	0.37	0.85	0.37	0.58 J 0.37
Senzo(K)II Uoranthene	111.91.1	NA U.S.C.	NA L	NA S.S	OC AN	NA	- AN	NA L.	0.43	+	00.00	0.38	07	1	0	8.4	10.0
bis(2-Chloroethyl)Ether	111.44.4	NA	NA	NA	NA	NA	A	NA	D .	0.380	n	0.038	0 .	0	5	0.84	. U 0.72
bis(2-Ethylhexyl)phthalate	117-81-7		NA	NA	NA	NA	NA	NA	0.25 J	0.37	n -	0.38	0.38 J		5	8.4	
4-Bromophenyl-phenylether	101-55-3		NA	NA	NA	NA	NA	NA	n .	0.38	n .	0.38	0		n	8.4	0
Butylbenzylphthalate	85-68-7	NA	NA	NA	NA	NA	NA NA	X X	0 - 900	0.38	0.055	0.38	0 200	0.74	5	4.8	2 2
A Chloro 3 Methylphonol	50-74-8	NA NA	NA	NA	NA	NA	NA	NA NA	-	-		0.38			0 0	4. 4	
4-Chloroaniline	106-47-8	N N	NA	NA	NA	¥	N.	¥	00	0.38	,	0.38	0	10	3	8.4	0
Chloronaphthalene	91-58-7	NA	NA	NA	NA	NA	NA	N.	n -	0.38	. 0	0.38	2		O .	8.4	. 0
2-Chlorophenol	95-57-8	NA	NA	NA	NA	NA	NA	NA	<b>ɔ</b> :	0.38	<b>D</b>	0.38	2		0	4.8	<b>D</b>
4-Chlorophenyl-phenylether	7005-72-3	53.11	. 1		NA		NA	¥.		_		0.38		0.74	0 00 2	4.0	
Chrysene	218-01-9	10	10	3.9	56	110	NS +	1000	0.74	15	0.83	0.38	1.8	0.37	0.50	0.37	0.33
benzofuran	132-64-9	7	14	59	350	1,000 1	NS t	210	0.03	0.37	0.041	0.38	0.17 J	0.37	n -	8.4	n
1,2-Dichlorobenzene	95-50-1	1.1	100 a	100 a	500 k	1,000	NS f	1.1	n -	0.38	<u>-</u>	0.38	2		n	8.4	- n
				100	4000				-				1	1	13		-

See last page for notes.

Table 4-3. Soil Sample Results
Site Characterization Study
Hester Street Former Manufactured Gas Plant
Manhattan, New York

										Manhattan, New York									
					S	Sample Location	SB-01	SB-02	2	SB-04	SB-04		SB-05	SB-06	SB-06	SB-07		SB-07	70-WW
					Laboratory S	Laboratory Sample Number	X5546-01	X5388-02	-02	X5264-01	X5388-03	XS	X5264-02	X5388-05	X5388-04	X5388-06		X5388-07	X5546-03
					3	Sample Date	11/16/06	11/8/06	90	11/1/06	11/7/06	10	10/31/06	11/10/06	11/10/06	11/9/06		11/9/06	11/16/06
				Grou	Ground Surface Elevation (feet MSL)	ple Depth (feet below grade) Surface Elevation (feet MSL)	20.9	16.0* 16.0*	0	18.1*	18.1*	Σ α	19.0*	18.5	18.5	17.8		17.8	22.3 22.3 .05 to 0
Parameters	CASRN	UUSCO R	RSCO RRSCO	csco	92		Conc Q MDI	Conc	MDL	Conc Q MDL	Conc Q	MDL Conc	MDL	Conc Q MDL	Conc Q MDL	Conc Q	MDL Conc	c Q MDL	Conc Q MDL
3,3-Dichlorobenzidine	91-94-1	Ž	Z			NA.					n :	0.37	UX 18	. U 3.80		n :	0.39		Đ
2,4-Dichlorophenol	120-83-2	NA NA	AN AN		NA NA	NA	UX 1.90	, ,	0.40	0.37	2 2	0.37	UX T8	0 3.80	0 1.90	0 0	0.39	0 0.76	, ,
2,4-Dimethylphenol	105-67-9		NA			NA.		,			0 -	75.0		I		0	0.39		D .
Dimethylphthalate	131-11-3		NA	NA :	NA	NA :			0.40		n - 000	0.37	UX 18			D :	0.39		<b>D</b> =
Di-n-butylphthalate	534-52-1	NA NA	NA NA		NA NA	N N	UX 4.90			0.00	0.22	0.94		0 3.80	U 4.80	000	0.97	0.10	0 0.37
2,4-Dinitrophenol	51-28-5		NA			NA		0	0.99	1	n	0.94	UX 45	. U 9.50		D - 0	- 26.0		<b>5</b>
2,4-Dinitrotoluene	121-14-2		NA			NA	H		0.40		<b>n</b>	5.37		- U 3.80		Э.	0.39		<b>3</b>
2,6-Dinitrotoluene	606-20-2		NA.			V S	- UX 1.90	0.0	0.40	- U 0.37	5	0.37		0 3.80	U 1.90	0	0.39	0 0.76	0 0
Ui-n-octylphthalate Fluoranthana	206-44-0	NA NA	100 a 100 a	500 k	1 000 L	1 1000	. UX 1.90		0.40	0.86 0.37	2	0.37	UX TR						,
Fluorene	86-73-7	Т		500 k		386			0.40		2	0.37		0	2	0		3 7	2
Hexachlorobenzene	118-74-1	33 b (		9	12	t 3.2		4			) )	0.37	UX 18	. U 3.80			0.39		<b>D</b>
Hexachlorobutadiene	87-68-3		NA:			NA:					5	0.37	Ī				0.39	0.76	
Hexachlorocyclopentadiene	67.79.1	NA NA	NA	NA NA	NA NA	N AN	- UX 1.90		0.40	- 11 0.37		0.37	UX 18	0 3.80	0 1.90		0.39		
Indeport 2.3 adhumana	103 30 5	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0 40	u	¥	68					3	0.37		U					0
Internot 1, 2, 3-cu) pyrene Isophorone	78.59-1	NA	NA	0	NA NA	NA NA					0	0.37			2		ľ	0	n
2-Methylnaphthalene	91-57-6					NA e		,		10	n -	0.37	UX 18			Y			0 -
2-Methylphenol (o-Cresol)	95-48-7		10	500 k	1,000 I NS	f 0.33					D ÷	0.37					0.39		5
4-Methylphenol (p-Cresol)	106-44-5	Q		500 k						<b>3</b>	0	0.37						٠ .	0 3
Naphthalene	91-20-3	12	100 a 100 a	500 k	1,000 I	f 120	- UX 1.90			7.7 D 1.90	,	0.37	OX AE	0.3.80	G be	37 (0	0.39	0.45 1 0.76	0 0.37
2-Nitroaniline	88-74-4	NA NA	N N			NA NA	UX 4.90		0.99	0 0.94	0 =	0.94	UX 45	0 9.50		,	76.0		2
4-Nitroaniline	100-01-6		N A		NA	NA NA	J.		E			0.94					76.0		D
Nitrobenzene	98-95-3		AN			NA		i k			0	0.37	Ĭ				0.39		0 -
2-Nitrophenol	88-75-5		A S	AN	NA	A S	. UX 1.90	0 0	0.40	- 0 0.37		0.37	UX 18	0.3.80	0 1.90		0.39	0 0.76	0.37
N-Nitroso-di-n-propylamine	621-64-7	NA NA	X X			AN AN					ח	0.37					0.39		0
N-Nitrosodiphenylamine	86-30-6		NA			NA		x		- U 0.37	n -	0.37					0.39		n -
2,2-oxybis(1-Chloropropane)	108-60-1	Š	NA N		NA NA	Z		0.0			3	0.37	UX 18	. U 3.80	0 1.90	0	0.39	0.76	9 2
Pentachiorophenol	87-80-3	0		0.0			NA 1 AO		0.40	110 0 1 90	0.14	0.37	2 X	086		0.064	0.39	370 076	1
Phenanthrene	108.95.2	100 1	100 a 100 a	500 k	1,000 I	0.33			P	2 3	t i	0.37		, 0	2 0	1000	,	D	5
Pyrene	129.00-0				NS	+		,			a a	0.37		1.7 J 3.80		•			×
1,2,4-Trichlorobenzene	120-82-1	NA	¥			NA		č		5	<b>5</b>	0.37			7	<b>o</b>		n	0 .
2,4,5-Trichlorophenol	95-95-4		NA:		NA NA	NA				0.04	<b>&gt;</b> =	0.94		0 8.50	0	5	0.97		<b>5</b>
Z,4,6-Irichlorophenol	88-06-2	AN AN	N AN	A A A	NA NA	NA	N/A		0.40 N/A	5	0.14	1/A	N/A		323.11	0.064		5 N/A	
Total SVOCs							0.35 N/A	ì		34.54 N/A	0.52	N/A	N/A	7.14 N/A	416.81 N/A	0.155	N/A 14.83		0.25 N/A
Inorganics	7420 00 6	NA NA	× 2	MA	NA NA	NA P	11 800	13.100		4 330 00 V	3 030	028 6330		6050 230	12 200	5 430	235	5010 23.4	3760 225
Antimony	7440-36-0	NA NA	NA N				0 7.09		7.19	0 6.66	n -	6.85	U 6.56	ח	14.1		-	ח	n
Arsenic	7440-38-2	13 c	-	160	160	0		5,41	1.20	-	0.952 J		1.09		4.29				n
Barium	7440-39-3	350 c	350 0 400	400	10,000 m 433	820	72 23.6	69 69	24	60.8 22.2	63.1	22.8 104	21.9	0.374 1 0.576	0.549   0.585	67.9	73.5	0.395 1 0.584	56.2 22.5
Cadmium	7440-43-9	2.5 c	0	9.3		7.5	, 5	oto:	09.0	, ,	0	1	-	, ,	0 0 -	0		ח	n -
Calcium	7440-70-2	NA NA	Ä		NA				009		8,710	34	547		1,300	m			717
Chromium (total) (e)	7440-47-3	30 c	36 180	1,500 NA	6,800 41	NA	7.58 5.91	11.2	07.0	13.1 1.11	3.92	5.71 5.08	1.09 J 5.47	4.2 J 5.76	8.73 5.85	5.9	5.87 5.	5.29 J 5.84	3.39 J 5.63
Copper	7440-50-8	50	270 270	270	m 000						10.3				10.1				10.6
Total Cyanide (e)	57-12-5	27	G	27	000 m NS	f 40	0			3	0			0	0 0	ם		0	1.30 0
Iron	7439-89-6	NA NA	NA		NA	NA o		21			7,100	6	_		20,800	12,600	1		6,930
Lead	7439-92-1	63 c	400 400	000	006	450		4	-		3.87	-	0.547	349 0.576	11.3 0.585	300	0.587	424 0.584	1.13
Mandanese	7439-95-4	1600 r	2000 2 2000 c	10 000 m	10 000 m 1600 o	2,000	640 177	7 707	1.80	1,950 555	5,100	1.71 17.000	1.64	247 1.73	2,880	2,600			348
Marchine	7439.97.6	0.180		280	ille	0.73	0		1	5	0 0	0	0.011		0	0.187		0	0 0
Nickel	7440-02-0	30 30		310	10,000 m 30	130	,	L	-		22.1	-	4.38		16.9	19.1			13.2
Potassium	7440-09-7	NA NA	NA		Ž	NA			009	4	864			43	672				691
Selenium	7782-49-2	3,9 c	36 180	1,500	6,800 3.9	3.90 4	0.513 J 2.36	1.08	Ш	0 2.22	0.514	2.28	1 100	0.629 J 2.30	0.733 J 2.34	7 0.522 J	1.17	0 2.34	0 2,25
Sodium	7440-23-5	NA NA	AX		000	NA O.S	259 JB 59	1 52 JB	900		128 JB	571 570	J	L	166 JB	223			205 JB
Thallium	7440-28-0	NA	NA		NA NA	NA	-		1.20	>	ח		0 1.09	D	0	Ì		Э	1.27
Vanadium	7440-62-2	NA	710	NA 10000	Z	-			0009	14.8 5.55	11.1	5.71 21	5.47	18.1 5.76	34 5.85	19.1	5.87	15.7 5.84	
Zinc	7440-66-6	109 c	2200 10,000 m	10,000 m	10,000 m 10	109 0 2,480	41.8 2.36	54.2	2.40	1	23.2	27.28	2.19	160 2.30	45.5	1	2.35	2.5	10.8

See last page for notes.

Table 4-3. Soil Sample Results
Site Characterization Study
Hester Street Former Manufactured Gas Plant
Manhattan, New York

rameters 3-Dichlorobenzidine 4-Dichlorophenol ethylphthalate 1-Dimethylphthalate methylphthalate n-butylphthalate 5-Dinitro-2-methylphenol 4-Dinitrophenol 6-Dinitrophenol 6-Dinitrotoluene 6-Dinitrotoluene 6-Dinitrotoluene						Labo	Laboratory Sample Number Sample Date	mple Number Sample Date	892873	73	3000	980	892874	4	892875	88	892876
Parameters 3,3-Dichlorobenzidine 2,4-Dichlorophenol Diethylphthalate 2,4-Dimethylphthalate Dimethylphthalate Din-butylphthalate Din-butylphthalate Din-butylphthalate Din-cutylphthalate Din-cutylphthalate Din-cotyphthalate 2,4-Dinitrophenol 2,4-Dinitrophenol 2,6-Dinitrophenol Din-cotylphthalate Din-cotylphthalate						Sample De	Sample Depth (feet below grade)	low grade)	1/17/08 7.9 to 8.4	9.4	1/18/08 20 to 20.5	708	1/17/08 5 to 6.5	2 28	1/17/08 11.5 to 12	1/1	1/17/08 17.6 to 18.6
3-Dichlorobenzidine 3-Dichlorophenol ethylphthalate methylphthalate biolityo-prinalate 5-Dinitrophenol 4-Dinitrophenol aviny phylalate 5-Dinitrophenol 4-Dinitrophenol 6-Dinitrophenol	CASEN	OUSION	RSCO	RRSCO	9 0282	Ground Surface Elevation (feet MSL. Sample Elevation (feet MSL. ISCO ERSCO GWSCO	Surface Elevation (feet MSL) Sample Elevation (feet MSL) SCO ERSCO GWSCO	(feet MSL) (feet MSL) GWSC0	17.7 9.2 to 9.7 Conc. 0	9.7 MDI	17.7 -2.8 to -2.3 Conc. 0 N	7 -2.3 MDI	18.6 12.1 to 13.6 Conc. 0 M	3.6 MDI	18.6 6.6 to 7.1 Conc 0 MDI	Conc	18.6 0 to 1 0 MDL
-Dichlorophenol thylphthalate -Dimethylphenol nethylphthalate -butylphthalate -butylphthalate -Dinitro2-methylphenol -Dinitrophenol -Dinitrophenol -Dinitrophenol -Dinitrophenol -Dinitrophenol	91-94-1			NA	NA		NA	NA	)	0.76	n ·	0.77	11	1.5	n	7	
Unightmaare -Dimethylphenol ethylphthalate -butylphthalate -Dinitro-2-methylphenol -Dinitrophenol -Dinitrotoluene -Dinitrotoluene	120-83-2	NA	NA	NA	NA NA	NA NA	NA	NA	<b>3</b> =	0.38	<b>=</b>	0.38	<b>=</b>	0.74	ω α Σ =	8.4	0 7.2
ethylphthalate -butylphthalate -butylphthalate -Dinitro-2-methylphenol -Dinitrophenol -Dinitrotoluene -Dinitrotoluene	105-67-9			NA	NA.	NA	NA	NA	1	0.38	0	0.38	0	0.74	L	8.4	u 7.2
-butylphthalate Dinitro-2-methylphenol Dinitrophenol Dinitrotoluene Dinitrotoluene	131-11-3		NA	NA	NA	NA	NA	NA	n	0.38	n :	0.38	n	0.74		8.4	
Dintroz-ritetryprenol Dintrophenol Dintropluene Dintrotoluene	84-74-2			NA NA	NA S	NA	NA S	NA	U 770.0	0.37	<b>3</b> =	0.38	<b>=</b>	0.74	<b>3</b>	35	7.2
Dinitrotoluene Dinitrotoluene octylphthalate	51-28-5	NA		NA	N A	N AN	NA	× ×		11		1.2		2.2		25	
Dinitrotoluene octylphthalate	121-14-2			NA	NA A	NA	NA	NA	n	0.076	n	0.077	<b>n</b>	0.15			
octylphthalate	606-20-2	NA		NA	NA :	NA:	NA:	NA		0.076	n :	7200	0 -	0.15		1.7	U 1.4
	117-84-0	000		NA 400	NA	NA A	NA +	4 DOO		0.38		0.38	3.1	0.74	83 1 037	7 7	1 037
Fluorene	86-73-7	30	100 a	100 a	500 k	1,000	30	386	0.33	0.37		0.38	10	0.37		37 11	0.37
Hexachlorobenzene	118-74-1	0.33 b	0.33 n	1.2	9	12		3.2		0.38		0.038	0 -	0.074	U 0.3		U 0.72
Hexachlorobutadiene	87-68-3	-		NA	NA	NA	NA	NA	n .	0.076	<b>D</b>	0.077	<b>)</b>	0.15		- 27	U 1.4
Hexachlorocyclopentadiene	77-47-4	NA	NA	NA	NA	NA NA	NA .	NA		0.38	-	0.38	3	0.74		8.4	070
Hexachloroethane	1-77-10									0.30	0 260	0.000		0.37	5	Ļ	
Indeno(1,2,3-cd)pyrene	193-39-5	0.5 C	0.50	0.50	9.6 NA	11	NS +	8.2 NA	0.23	0.38	0.200	0.038	0.32	0.74	60	0.84	070
Sopriorite 2-Methylnaphthalene	91-57-6			NA	NA	NA	N N	NA	1.6	0.38	0.046	0.038	2.70	0.74		8.4 70	7.2
2-Methylphenol (o-Cresol)	95-48-7	33 b	100 a	100 a	500 k	1,0001	NS #	333	<b>D</b>	0.38		0.038		0.74		8.4	
4-Methylphenol (p-Cresol)	106-44-5	0.33 b	34	100 a	200 k	1,000,1	NS +	0.33		0.38	•	0.038	<b>3</b>	0.74	n	1.4	7.2
Naphthalene	91-20-3	12	100 a	100 a	500 k	1,000 1	NS f	120	1.5	0.37	0.027 J	0.038	0.61	0.37		37 73	0
Nitroaniline	88-74-4			NA	NA	NA:	NA	NA:	7	0.76	<b>)</b>	0.77	<b>3</b>	1.5		5	
3-Nitroaniline	100.01.6	N N	NA NA	AN AN	NA NA	NA NA	NA NA	NA NA	9 =	0.76		0.77	, ,	0 4	1 17		17
Nitrobenzene	98-95-3			NA	NA N	N N	NA	NA	ח	0.38	0	0.038	n	0.74	1	84	U 0.72
2-Nitrophenol	88-75-5			NA	NA	NA	NA	NA	n	0.38	)	0.38	o ,	0.74		8.40	
4-Nitrophenol	100-02-7	NA NA		NA NA	NA NA	NA NA	NA	NA	<b>D</b> =	1.1	) =	1.20	2 2	2.2	0 25	25	0 22
N-Nitrosodiphenylamine	86-30-6		NA	NA	NA N	NA A	NA	Y Y	0 0	0.38	-	0.38	5	0.74	13	0.84	U 0.72
2-oxybis(1-Chloropropane)	108-60-1			NA	1	7-		NA	0	0.37	0	0.37		0.37		0.37	U 0.37
Pentachlorophenol	87-86-5	0.8 b	2.4	6.7	6.7	22	8.	0.8	)	1.1	n .	1.20	<b>3</b>	2.2	a	4	0 22
Phenanthrene	100 05 7	100	100 a	100 a	500 k	1,000 1	NS t	1,000	4.3	0.37	T.5	0.38	2.9	0.37	150	9.40 8.40	0.37
Pyrene	129.00.0	100	100 a	100 a	500 k	1,000 1	NS t	1.000 e	1.50	0.37	1.5	0.38	4	0.37		0.37	0.37
,2,4-Trichlorobenzene	120-82-1			NA	NA	NA	NA	NA	n ,	0.38	n	0.38	0	0.74	, U 8.	0	U 7.20
,4,5-Trichlorophenol	95-95-4	-		NA	NA	NA	NA	NA	0 1	0.38	η -	0.38	0	0.74		40	
,4,6-Trichlorophenol	88-06-2	NA	NA	NA	NA	NA	NA	NA		0.38	)	0.38	0	4	D	0	U 7.20
Total PAHS				NA	NA	NA	NA	A	13.052	N/A	9.314	N/A	20.11	N/A	316.04 N/A	A 325.38	N/A
norganics														-			
Aluminum	7429-90-5			NA	NA	NA	NA	NA	6,030	22.5	3480	22.5	5610	22.5		22.5 6130	
Antimony	7440-36-0			NA	NA	NA	NA	NA	)	1.30	n .	1.30		1.30	0		U 1.30
Arsenic	7440-38-2	13 0	160	160	16 0	10000	130	16	17.5	1.13	1 7	1.13	338	20.5	2 1.	1.13 1.7	1 22 5
Berullim	7440-55-5	7.2	14	72	290	2.700		47	0.22	0.563		0.563	0.18	0.563	0		1 0.563
Cadmium	7440-43-9	2.5 €	2.5 0	4.3	9.3	09	4	7.5		0.563	n -		2.8	0.092	n	- 1	U 0.087
Calcium	7440-70-2			NA	NA	NA	NA	NA	20,900	563	5,840		31,100	263	1,700 5	m	1 563
Chromium (total) (e)	7440-47-3	30 c	36	180	1,500	6,800	41	NS.	22.2	1.13	39.1	1.13	21.6	1.13	4	13 10.3	1.13
Cobalt	7440-48-4			NA	A	NA	ž	NA	4.2	5.63	2.7		8.8	5.63	1		50.0
Copper	7440-50-8	20	270	270	270	10,000 m	all.	1,720	74.7	2.82	57.6	2.82	1340	2.82		2.82 12.4	2.82
Total Cyanide (e)	57-12-5	27	NA ZI	NA 27	NA ZI	10,000 m	N N	NA 40	10 000	113	7 570	113	48 300	113	20,800 0.630	10,600	113
	1433-69-0		W.	WA.	NA.	W	- 6	O CL	20,300	4 43	0.00	_	000'04	1 13		113	113
ead	7439-92-1	63 C	400	400	1,000	3,900	020	450	185	25.10	97.0	563	7080	563	15.3	583 1870	563
Mangapese	7439-96-5	200	0.000	2 000 0	10.000 m			2.000	220	1.69	94.2	1.69	308	1.69		-	1.69
	7439.97.6	0.180	0.81	0.81	280	1 .	0.18	0.73	0.34	0.011	76.0	0.011	1.5	0.011	0 11		U 0.018
Nickel	7440.02-0	30	140	310	310	10.000 m	30	130	16.4	4.50	39.6	4.50	43.2	4.50		4.50 15.8	
Potassium	7440-09-7		NA	NA	NA	NA		NA		563	00		837 J	563	'n		J 563
Selenium	7782-49-2	3.9 c	36		1,500	6,800	3.90	4	ח	0.95		0	1.9	76.0	n	1 1	
Silver	7440-22-4	0	36	180	1,500	6,800	2	8.3	0.7	1.13			2.7	1.13	5	0.35	0.30
Sodium	7440-23-5	NA	NA	NA	NA	NA NA	NA NA	NA NA	635	110	412	2993	TCS	1 10		1 20	1,00
Vapadium	7440-28-0		NA	NA	NA NA	AN AN	Y AN	Y AN	14	5.63	83		30.3	5.63		5.63	
Variation	7440 66 6	200	0000	10000 m	10,000 m	11/2	10	2.480	NBR	225	00	2.25	4460	2.25			2.25

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#### Manhattan, New York Hester Street Former Manufactured Gas Plant Site Characterization Study Table 4-3. Soil Sample Results

Notes:

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**BRCO** 

MDF

Conc.

CMRCO

**EBSCO** 

ISCO

Soil sample results in milligrams per kilogram

Result reported from sample reanalysis

Result reported from serial dilution

Reference elevation estimated

Recommended Soil Cleanup Objective

Shaded MDL exceeds on or more soil cleanup objectives

Bold and underline data exceed one or more soil cleanup objectives

Analtye not detected

Data qualifier

Not applicable

Not detected

Site background

Method Detection Limit

Concentration reported

Estimated concentration

Unrestricted Use Soil Cleanup Objectives Table 375-6.8(a) nnaco

**BSCO** 

Protection of Groundwater Soil Cleanup Objectives Table 375-6.8(b)

Protection of Ecological Resources Soil Cleanup Objectives Table 375-6.8(b)

**BRSCO** 

Protection of Public Health Industrial Restricted Use Soil Cleanup Objectives Table 375-6.8(b)

CCCO

Protection of Public Health Commercial Restricted Use Soil Cleanup Objectives Table 375-6.8(b) Protection of Public Health Restricted Residential Restricted Use Soil Cleanup Objectives Table 375-6.8(b)

Protection of Public Health Residential Restricted Use Soil Cleanup Objectives Table 375-6.8(b)

Part 375 6 NYCRR Part 375 Remediation Program cleanup objectives

#### Table 4-4 Summary of Soil Sample Detections and Exceedances

#### Site Characterization Study

#### Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

Parameter	Samples Analyzed	Detections	Exceedances	Maximum Concentration	Sample with Hig Concent	
Volatile Organic Compounds (VOC)						
Acetone	15	10	8	0.53	SB-06	18.5 to 19
Benzene	15	3	3	5.9	SB-06	18.5 to 19
Bromodichloromethane	15	-	-	ND	Not	Applicable
Bromoform	15			ND	Not	Applicable
Bromomethane	15	1	+	0.25	SB-04	19.5 to 20
2-Butanone (Methyl ethyl ketone)	15	1	0.24	0.0021	MW-11	20 to 20.5
Carbon Disulfide	15	1		0.0022	MW-11	20 to 20.5
Carbon Tetrachloride	15	÷		ND	Not	Applicable
Chlorobenzene	15	-		ND	Not	Applicable
Chloroethane	15	3	3.3	ND	Not	Applicable
Chloroform	15	4	1. 81.	ND	Not	Applicable
Chloromethane	15		•	ND	Not	Applicable
Dibromochloromethane	15	-	-	ND	Not	Applicable
1,1-Dichloroethane	15	- 6		ND	Not	Applicable
1,2-Dichloroethane	15	-	-	ND		Applicable
1,1-Dichloroethene	15	-		ND	Not	Applicable
cis-1,2-Dichloroethene	15	-	-	ND	Not	Applicable
trans-1,2-Dichloroethene	15	-	-	ND	Not	Applicable
1,2-Dichloropropane	15		0.4	ND	Not	Applicable
cis-1,3-Dichloropropene	15		-	ND		Applicable
rans-1,3-Dichloropropene	15	90		ND		Applicable
Ethylbenzene	15	5	3	33	-	18.5 to 19
2-Hexanone	15	+		ND		Applicable
4-Methyl-2-pentanone	15		E.	ND		Applicable
Methylene Chloride	15	9	1	0.072		22.3 to 22.8
Styrene	15	1		12		18.5 to 19
1,1,2,2-Tetrachloroethane	15	-	- 6	ND	302.02	Applicable
Tetrachloroethene	15	-	-	ND		Applicable
Toluene	15	5	3	79		18.5 to 19
1,1,1-Trichloroethane	15	3	9	ND		Applicable
1,1,2-Trichloroethane	15	-	-	ND		Applicable
Trichloroethene	15			ND		Applicable
Vinyl Chloride	15	4	4	ND		Applicable
						18.5 to 19
o-Xylene	15	2		42		
m/p-Xylenes	15	2	2	93		18.5 to 19
Xylene (Total)	15	6	3	135		18.5 to 19
Total VOCs	15	15	-	400.45	2364	18.5 to 19
Total BTEX	15	8	141	252.9	SB-06	18.5 to 19
Semivolatile Organic Compounds (SVOC)	مند			46		
Acenaphthene	15	8		18		11.5 to 12
Acenaphthylene	15	7	-	3.4		11.5 to 12
Anthracene	15	8	- 2.	12	47-7-8	18.5 to 19
Benzo(a)anthracene	15	9	4	6.2		18.5 to 19
Benzo(a)pyrene	15	8	4	2.6	41-11	11.5 to 12
Benzo(b)fluoranthene	15	9	3	2.2		18.5 to 19
Benzo(g,h,i)perylene	15	7		0.93		18.5 to 19
Benzo(k)fluoranthene	15	7	3	1.8		5 to 6.5
ois(2-Chloroethoxy)methane	15	-	*	ND		Applicable
bis(2-Chloroethyl)Ether	15	(*)	1.5	ND	Not	Applicable

#### Table 4-4 Summary of Soil Sample Detections and Exceedances

#### Site Characterization Study

#### Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

Parameter	Samples Analyzed	Detections	Exceedances	Maximum Concentration	Sample with Hig Concent	
SVOCs Continued	2002000					
bis(2-Ethylhexyl)phthalate	15	7	- 3.	0.38	MW-12	5 to 6.5
4-Bromophenyl-phenylether	15	T <sub>e</sub>	14	ND	Not	Applicable
Butylbenzylphthalate	15	- R	-	ND		Applicable
Carbazole	15	4	×	0.22	877 B.T.O.	5 to 6.5
4-Chloro-3-Methylphenol	15	(A)	(A)	ND	Not	Applicable
4-Chloroaniline	15	i e	ė	ND		Applicable
2-Chloronaphthalene	15	-	-	ND		Applicable
2-Chlorophenol	15	- 1		ND		Applicable
4-Chlorophenyl-phenylether	15			ND		Applicable
Chrysene	15	9	4	8.9		18.5 to 19
Dibenz(a,h)anthracene	15	5	1	0.59		11.5 to 12
Dibenzofuran	15	3	-	0.17		5 to 6.5
1.2-Dichlorobenzene	15			ND		Applicable
1.3-Dichlorobenzene	15			ND		Applicable
1,4-Dichlorobenzene	15		1-	ND		Applicable
3.3-Dichlorobenzidine	15		.0.	ND		Applicable
2,4-Dichlorophenol	15			ND		Applicable
Diethylphthalate	15		-	ND		Applicable
2,4-Dimethylphenol	15		14	ND		Applicable
Dimethylphthalate	15			ND		Applicable
Di-n-butylphthalate	15	2		0.22		25 to 26
4,6-Dinitro-2-methylphenol	15	-		ND		Applicable
2,4-Dinitrophenol	15			ND		Applicable
2,4-Dinitrophenol	15			ND		Applicable
2,6-Dinitrotoluene	15		8	ND		
	15	1		0.28		Applicable
Di-n-octylphthalate Fluoranthene	15	9				5 to 6.5
				8.3		18.5 to 19
Fluorene	15	8		13	1,716,717	11.5 to 12
Hexachlorobenzene	15			ND		Applicable
Hexachlorobutadiene	15	- 8		ND		Applicable
Hexachlorocyclopentadiene	15			ND		Applicable
Hexachloroethane	15		(9)	ND		Applicable
Indeno(1,2,3-cd)pyrene	15	7	4	1.6	7200	18.5 to 19
Isophorone	15	-		ND		Applicable
2-Methylnaphthalene	15	9	- 8	84		18.5 to 19
2-Methylphenol (o-Cresol)	15	. 9		ND		Applicable
4-Methylphenol (p-Cresol)	15		- 6	ND		Applicable
Naphthalene	15	8	3	94		18.5 to 19
2-Nitroaniline	15	8		ND	Entering	Applicable
3-Nitroaniline	15			ND		Applicable
4-Nitroaniline	15		18	ND		Applicable
Nitrobenzene	15	-	~	ND		Applicable
2-Nitrophenol	15	× -		ND		Applicable
4-Nitrophenol	15			ND		Applicable
N-Nitroso-di-n-propylamine	15			ND		Applicable
N-Nitrosodiphenylamine	15	1	B	9.7		18.5 to 19
2,2-oxybis(1-Chloropropane)	15	14	H	ND	Not	Applicable
Pentachlorophenol	15		185	ND	Not	Applicable
Phenanthrene	15	11	3	150	MW-12	11.5 to 12

#### Table 4-4 Summary of Soil Sample Detections and Exceedances

#### Site Characterization Study

#### Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

	Samples			Maximum	Sample with Hig	hest Reported
Parameter	Analyzed	Detections	Exceedances	Concentration	Concent	ration
SVOCs Continued						
Phenol	15	9		ND	Not	Applicable
Pyrene	15	9	¥.	17	SB-06	18.5 to 19
1,2,4-Trichlorobenzene	15	£/	-	ND	Not	Applicable
2,4,5-Trichlorophenol	15	~	4	ND	Not	Applicable
2,4,6-Trichlorophenol	15	-	(ف	ND	Not	Applicable
Total PAHs	15	11	*	323.11	SB-06	18.5 to 19
Total SVOCs	15	13	- 4	416.81	SB-06	18.5 to 19
Inorganics						
Aluminum	15	15		17000	MW-12	11.5 to 12
Antimony	15	1	- 4	14.1	SB-06	18.5 to 19
Arsenic	15	14		9.2	MW-12	5 to 6.5
Barium	15	15	-4	338	MW-12	5 to 6.5
Beryllium	15	15	-	0.72	MW-12	11.5 to 12
Cadmium	15	3	1	2.8	MW-12	5 to 6.5
Calcium	15	15	-	50400	SB-06	11.3 to 11.8
Chromium (total) (e)	15	15	1	39.1	MW-11	20 to 20.5
Cobalt	15	15	-	11.2	SB-02	9.5 to 10
Copper	15	15	6	1340	MW-12	5 to 6.5
Total Cyanide (e)	15	7	+	1.68	SB-07	28 to 28.5
Iron	15	15	(4)	48300	MW-12	5 to 6.5
Lead	15	15	6	1080	MW-12	5 to 6.5
Magnesium	15	15	14	11000	SB-05	0.5 to 1
Manganese	15	15	- 4	1050	MW-12	11.5 to 12
Mercury	15	10	5	2.4	SB-07	28 to 28.5
Nickel	15	15	2	43.2	MW-12	5 to 6.5
Potassium	15	15	-	1750	SB-05	0.5 to 1
Selenium	15	8	-	1.9	MW-12	5 to 6.5
Silver	15	4	1	2.7	MW-12	5 to 6.5
Sodium	15	15	-	924		11.3 to 11.8
Thallium	1.5	2	-	2.12		22 to 22.5
Vanadium	15	15		34		18.5 to 19
Zinc	15	15	5	1160		5 to 6.5

#### Notes:

Maximum concentrations reported in milligrams per kilogram

ND = Not detected

N:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Tables\[Table 3-1, 3-2, 3-3, 4-1, 4-3 and 4-4.xls]4-4 Summary of Soil Exceedances

<sup>- =</sup> No exceedances reported

Table 4-5. Groundwater Sample Results Site Characterization Report Hester Street Former Manufactured Gas Plant Manhattan, New York

Sample Location			MW-01	,	MW-01	-		MW-04		MW-04		MW-07	MW-07	7	MW-11	
Sample Date			12/7/06	90	1/31/08	80	-	12/7/06		1/31/08		12/7/06	1/31/08	80	1/31/08*	
Sample No.		Class	X5814-03	03	895763	63	XS	X5814-04	-	895764		X5814-05	895765		*992466*	
Parameters	CASRN	GA Std (b)	Conc Q	MDF.	Conc	Ó MDL		Conc Q MDL		Conc Q	MDL	Conc Q MDL	Conc Q	MDL	Conc Q	MDL
Volatile Organic Compound (VOC)	67-64-1	50 GV	n QN	75	Q			O ON	25	n QN	D.	ND U 25	n dN		39	5
Bromodichloromethane	75-27-4	50 GV	2.8 J		0.3		7	ND U	2	O ON	1	3.3 J 5	0.4	H	0.9 J	1
Bromoform	75-25-2	50 GV	U DN		QN	U 4		ND U	D	O ON	4	ND U S	O ON		ND O	4
Bromomethane	74-83-9	2	ND U	5	QN	n		ND U	2	O ON	2	ND U 5	O DN		O ON	Ŋ
2-Butanone	78-93-3	20	O ON	J 25	QN	n a	2	ND U	25	O ON	S	ND U 25	O ON		1.8 J	5
Carbon Disulfide	75-15-0	60 GV	ND ON		QN	ر ا		ND O	2	O ON	S	ND U S	ON ON		O ON	S
Carbon Tetrachloride	56-23-5	ß	O ON		QN	U 2		ND U	2	O ON	2	ND U S	ND ON		O ON	2
Chlorobenzene	108-90-7	S	D ON		QN	0 5		ND U	വ	ND U	22	ND U S	O DN		O ON	S
Chloroethane	75-00-3	2	ND ON		QN	n		ND U	2	ND ON	D	ND U 5	U ON		O ON	ນ
Chloroform	67-66-3	7	2.8 J		10	2,	2	ND U	വ	O ON	Ω	3.3 J 5	97	5	15	5
Chloromethane	74-87-3	ഹ	O ON		QN	ח		ND U	2	O ON	Ŋ	ND U S	ON ON		D ON	5
Dibromochloromethane	124-48-1	50 GV	N QN		QN	n		ND U	2	O ON	2	ND U 5	D ON		ND U	5
1,1-Dichloroethane	75-34-3	D.	N QN		QN	n		N D N	rs.	ND U	വ	ND U 5	U DN U		O ON	5
1,2-Dichloroethane	107-06-2	9.0	O DN	0	QN	n		ND U	12	ND U	2	ND U			ON ON	2
1,1-Dichloroethene	75-35-4	Ω.	N QN	5	QN	n	2	ND U	ın	O ON	2	ND U 5			ND O	2
cis-1,2-Dichloroethene	156-59-2	2	1.8 J	2	5 0.5	1		ND U	2	0.4	5	ND U 5	0.4	D	201	ις
trans-1,2-Dichloroethene	156-60-5	2	N DN		QN	n L	2	ND U	2	ND O	2				ND C	വ
Total 1,2-Dichloroethene	N/A	5	1.8 J	N/A	0.5	ľ		ND U N/A		0.4	വ	ND U N/A	0.4			വ
1,2-Dichloropropane	2-18-81	1	ND ON			n	F	ND U	LO.		Ħ	ND U	Q		-	-
cis-1,3-Dichloropropene	10061-01-5		ND U	J	QN	n		n qu	D		വ		QN		-	rb.
trans-1,3-Dichloropropene	10061-02-6		N QN		QN			ND U	5		D.		QN			ഥ
2-Hexanone	591-78-6	50 GV	N QN	J 25	QN	n		ND U	25		വ		QN			2
4-Methyl-2-Pentanone	108-10-1	NS	ND ON		Q	n		ND O	25		ည	2	QN		O QN	വ
Methylene Chloride	75-09-2	2	N QN		QN	n		ND O	2		က	ND U 5	Q		0.6 J	m
Styrene	100-42-5	2	ND ON		Q			ND U	വ	200	വ		QN		. 1	ഗ
1,1,2,2-Tetrachloroethane	79-34-5	വ	N QN		QN			ND O	Ω	O QN	н	D				1
Tetrachloroethene	127-18-4	2	5.8					ND U	വ	- 1	स		5.2			-
1,1,1-Trichloroethane	71-55-6	S	D QN	5	QN			ND O	വ		വ		QN		100	വ
1,1,2-Trichloroethane	2-00-62	1	N QN	5	QN	n	8	ND O	D.	O ON	n			00		m
Trichloroethene	79-01-6	2	1.1 )	1 5		7		ND O	S.	-	Ŧ!		9.0			7
Vinyl Chloride	75-01-4	2	N DN	0	QN	n	5	ND U	22	O ON	51	ND U	Q			6)
Benzene	71-43-2	T	N DN			n :	1	ND O	22	ND ON	न			<del>-</del>	N QN	
Toluene	108-88-3	Ŋ	N QN	0 5	5 0.3	î	5	ND U	5	ND O	വ	ND U 5	ND O		61	വ
Ethyl Benzene	100-41-4		ND ON		QN S	n '	4	ND U	S	n QN	4		ND ON	4	4	4
m/p-Xylenes	126777-61-2	1.0	ND ON	0 5		1	2	ND U	വ	ı	ı	ND U	1	1	1	
o-Xylene	95-47-6	5	ND U	0 5	2	1	,	ND O	D	1	1				1	1
Xylene (Total)	1330-20-7	5	N QN	U N/A	QN	n	2			O ON	D	ND U N/A	ND ON	2	7	വ
Total BTEX	N/A	NS	N QN	U N/A	0.3 (	U N/A		ND U N/A		ND U N/A	/A	ND U N/A	O QN	N/A	69.2 U N/A	V.
Total Target VOCs N	N/A	100(a)	14.3	I N/A	17.3	J N/A		ND U N/A		2.2 J N/A	Α/	9.6 J N/A	14.2 J	J N/A	128.1 N/A	Y,
VOC TICS N	N/A	100(a)	.t.	1	ND	U N/A		t	ì	117.4 J N/	N/A	1	U ON	U N/A	288.1 J N/A	Y,
000	NI /A	100 <sup>(a)</sup>	14.3	J N/A	17.3	J N/A		ND J N/A		119.6 J N/A	Y,	9.6 J N/A	14.2	I N/A	416.2 I N/A	۸,

Table 4-5. Groundwater Sample Results
Site Characterization Report
Hester Street Former Manufactured Gas Plant
Manhattan, New York

								The state of the s		1							
Sample Location			Σ	MW-01		MW-01		MW-04		MW-04		MW-07		MW-07		MW-11	
Sample Date		Sacio	12,	12/7/06	Π «	1/31/08		12/7/06		1/31/08		12/7/06 x5814-05		1/31/08		1/31/08*	
Parameters	CASRN	GA Std (b)	ocy loo	Conc Q MDL	0	Conc Q	MDL	Conc Q MDI		Conc Q	MDL	Conc Q MDL		Conc Q	MDL	Conc Q	MDL
Semivolatile Organic Compounds (SVOC)																	
bis(2-Chloroethyl)ether	111-44-4	1	Z		10	ND U	1	O ON	10	ND O	Ħ	ND O	10	-	1.1	n qu	1.1
bis(2-Chloroethoxy)methane	111-91-1	2			10		10	ND O	10	100	10	ND C	10	-1	11	71	7
2,2-oxybis(1-Chloropropane)	108-60-1	5			10	ND O	10	ND O	10	ND ON	10	O QN	10	000	11	VET	H
bis(2-Ethylhexyl)phthalate	117-81-7	5	T	1.9 J	10	ND O	10	5.4 J	10	ND O	10	ND O	10	O ON	11	2.3	11
4-Bromophenyl-phenylether	101-55-3	NS	Z	ND U 1	10	ND U	10	ND O	10	ND ON	10	ND U	10	ND U	11	1	11
Butylbenzylphthalate	85-68-7	20		ND U 1	10	ND U	10	ND O	10	ND ON	10	ND U	10	ND U	11	57	11
Carbazole	86-74-8	NS	Z	ND U 1	10	ND U	10	ND U	10	ND U	10	ND U	10	O ON	11	ND U	11
4-Chloroaniline	106-47-8	5	Z	ND U	10	ND O	10	ND U	10	n dN	10	ND U	10	ND ON	11	ND U	11
2-Chloronaphthalene	91-58-7	10 GV		ND U	10	ND U	10	ND O	10	O ON	10	ND U	10	O ON	11	ND U	11
4-Chlorophenyl-phenylether	7005-72-3	NS	Z	ND U 1	10	ND U	10	ND O	10	O ON	10	ND U	10	O ON	11	ND U	11
Dibenzofuran	132-64-9	NS	Z	ND U 1	10	ND U	10	ND U	10	n QN	10	ND U	10	ND O	11	ND U	11
Di-n-butylphthalate	84-74-2	50		ND U 1	10	ND U	10	ND O	10	ND ON	10	ND U	10	ND ON	11	ND U	11
1,2-Dichlorobenzene	95-50-1	e	Z	ND U	10	n dn	10	ND O	10	O ON	10	ND U	10	ND O	11	ND O	11
1,3-Dichlorobenzene	541-73-1	က		ND U	10	ND U	10	ND ON	10	ND ON	10	ND U	10	ND O	11	700	11
1,4-Dichlorobenzene	106-46-7	n		ND U	10	ND U	10	ND O	10	n QN	10	ND U	10	ND ON	11	-	11
3,3'-Dichlorobenzidine	91-94-1	S	Z	ND U	10	ND U	20	ND ON	10	n dn	20	O ON	10	ND O	22	ON ON	22
Diethylphthalate	84-66-2	50 GV		ND U 1	10	ND U	10	ND U	10	ND ON	10	ND O	10	ND O	11	O ON	11
Dimethylphthalate	131-11-3	50 GV			10	ND U	10	ND U	10	ND ON	10	ND ON	10	ND O	11	= 1	11
2,4-Dinitrotoluene	121-14-2	S			10		2	ND O	10		2	ND ON	10	10	2.2	250	2.2
2,6-Dinitrotoluene	606-20-2	2			10	1	2	ND O	10		2	D QN	10	371	2.2	7.	2.2
Di-n-octylphthalate	117-84-0	50 GV			10	ND U	10	ND O	10	O QN	10	ND O	10	100	11		11
Hexachlorobenzene	118-74-1	0.04			10	O ON	H	D QN	10	ON ON	Tri I	D QN	10		1.1	100	11
Hexachlorobutadiene	87-68-3	0.5			10	n QN	2	O DN	10	ON ON	2	ND O	10		2.2	5.1	2.2
Hexachlorocyclopentadiene	77-47-4	2			10		10	O D O	10	O ON	10	ND ON	10	-	11	7.0	I
Hexachloroethane	67-72-1	2			10	ND ON	н	ND O	10	D QN	H	ND O	10		1.1		1.1
Isophorone	78-59-1	50 GV			10		10	ND ON	10	O ON	10	ND ON	10	24	11	7.0	11
2-Nitroaniline	88-74-4	S			10	ND ON	20	O ON	10		20	ND O	10		22	-	22
3-Nitroaniline	99-09-2	5			10	O ON	20	O QN	10	ND ON	20	ND U	10		22	-	22
4-Nitroaniline	100-01-6	2			10	D QN	20	D QN	10	O ON	20	ND ON	10	- 1	22		22
Nitrobenzene	98-95-3	0.4		ND U	10	n QN	eri .	O QN	10	D QN	Ħ	D QN	10	O ON	1.1	n qu	1.1
N-Nitroso-di-n-propylamine	621-64-7	NS		Ĭ	10		н	ND ON	10	-54	1	ND ON	10	3	1.1	-	1.1
N-Nitrosodiphenylamine	86-30-6	50 GV		ND U	10	0.00	10	ND O	10	63.4	10	D QN	10	11	=	- 1	11
1,2,4-Trichlorobenzene	120-82-1	5		ND U	10	ND O	1	ND O	10	D QN	1	ND O	10	ND O	1.1	ND O	1.1
Phenolic Compounds														313			
2-Chlorophenol	95-57-8	NS	_		10		10	O ON	10		10	O QN	10	-	11		11
2,4-Dichlorophenol	120-83-2	5			10		10	D QN	10		10	OD ON	10		11	-	1
2,4-Dimethylphenol	105-67-9	50 GV			10		10	ND ON	9		10	ND O	10		11		11
2,4-Dinitrophenol	51-28-5	10 GV		ND U	10	O ON	31	ND C	10	D QN	30	ND ON	10	n Q	333	n QN	33
2-Methylphenol	95-48-7	$1^{(c)}$	_	ND U	10	ND U	10	ND U	10	ND ON	10	ND O	10	n QN	11	O QN	11
4,6-Dinitro-2-methylphenol	534-52-1	1(c)	_	ND U	10	O ON	31	ND U	10	ND U	30	ND U	10	n QN	33	ND ON	33
4-Chloro-3-methylphenol	29-50-7	1(0)		ND U	10	ND U	10	ND ON	10	ND O	10	ND U	10	n qu	11	O ON	11
4-Methylphenol	106-44-5	1(c)		1	1	U ON	10	t	ı	ND U	10	1	ì	n qu	11	20	11
	A1.7A	4 (c)	2	II ON	0	1	1	II GN	10	1	ł	II ON	10	1	3	3	1

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See page 5 for notes

Table 4-5. Groundwater Sample Results Site Characterization Report Hester Street Former Manufactured Gas Plant Manhattan, New York

									ı	-				ŀ		
Sample Location			MW-01		MW-01		MW-04		MW-04		MW-07		MW-O/		MW-11	
Sample Date	1		12/7/06		1/31/08		12/7/06		1/31/08		12/7/06	_	1/31/08		1/31/08*	
Sample No.		Class	X5814-03		895763	1	X5814-04	4	895764	i			895765		-	- (
Parameters	CASRN	GA Std (b)	Conc Q N	MDL	Conc Q	MDL	Conc Q	MDL	Conc Q	MDL	Conc Q MDL		Conc Q	MDL	Conc Q	MDL
SVOCs (Continued)																
2-Nitrophenol	88-75-5	1(c)	ND U	10	ND ON	10	ND U	10	ND U	10	ND U	10	O ON	41	ND U	11
4-Nitrophenol	100-02-7	1(c)	N QN	10	U DN	31	ND U	10	U QN	30	ND U	10	ND U	33	ND U	33
Pentachlorophenol	87-86-5	1(0)	ND ON	10	O ON	31	O DN	10	U DN	30	O DN	10	ND U	33	U DN	33
2,4,5-Trichlorophenol	95-95-4	1(c)	ND ON	10	O ON	10	N D N	10	O DN	10	O DN	10	O ON	1.1	U DN	11
2,4,6-Trichlorophenol	88-06-2	1(c)	ND ON	10	O ON	10	ND U	10	ON ON	10	ND U	10	ND U	11	ND U	111
Phenol	108-95-2	1(c)	ND ON	10	2 J	10	ND U	10	ND ON	10	ND U	10	ND U	11	15	11
Total Phenolic Compounds	N/A	1	N D ON	N/A	2 U N/A	4	O ON	N/A ND	Z 	N/A	ND U N/A	Q	U N/A		35 U N/A	đ
Acenaphthene	83-32-9	20 GV	ND U	10	O ON	10	5.5 J	10	12	10	ND U	10	ND U	11	0.5 J	11
Acenaphthylene	208-96-8	NS	1.5 J	10	O ON	10	3.9 J	10	0.4	10	ND U	10	O ON	11	0.6 J	11
Anthracene	120-12-7	50 GV	O ON	10	O ON	10	O DN	10	O ON	10	ND U	10	ND U	11	1.2 J	11
Benzo(a)anthracene	56-55-3	0.002	O DN	10	O ON	F	1.5 J	10	ND ON	1	ND U	10	n qu	1,1	1.2	1,1
Benzo(a)pyrene	50-32-8	ND	N QN	10	O ON	1	3.3	10	O ON	1	O DN	10		1.1		1.1
Benzo(b)fluoranthene	205-99-2	0.002 GV	n dN	10		1	4.4	10		<u></u>	n dN	10		1,1		1.1
Benzo(g,h,i)perylene	191-24-2	NS	D QN	10	ND ON	10	2 J	10		10	ND ON	10		11	211	11
Benzo(k)fluoranthene	207-08-9	0.002 GV	n GN	10			n dN	10	-	H (	n and a	10		1.1		1.1
Chrysene	218-01-9	0.002 GV	O ON	2 0		01	- GN	101		2 -		100		1 7	Z GN	11
Dibenzo(a,n)anthracene	206.44.0	NS PO GV		101	O CN	101	22.1	101	3 10	101	n dN	10		11		11
Fliorene	86-73-7	50 GV	I GN	101		10	n dN	10		10	ND ON	10		11	ND ON	11
Indeno(1,2,3-cd)pyrene	193-39-5	0.002 GV	O QN	10		7	1.1	10		1	O DN	10	D ON	1.1	O ON	1.1
2-Methylnaphthalene	91-57-6	NS	n dN	10	ND ON	10	ND ON	10	U DN	10	ND U	10	N ON	11	1.3 J	11
Naphthalene	91-20-3	10 GV	O ON	10	U ON	10	O ON	10	O ON	10	ND U	10	O DN	11	O ON	1.1
Phenanthrene	85-01-8	50 GV	O ON	10	O ON	10	1.4 J	10	ND ON	10	ND U	10	ND ON	11	3.2 J	11
Pyrene	129-00-0	50 GV	ND ON	10	ND ON	10	۱.7. ر	10	ND U	10	ND U	10	ND ON	11	1.6 J	11
Total PAHs	N/A	100 <sup>(a)</sup>	1.5 J N	N/A	ND U N/A	d	35.1 J	N/A	12.4 N	N/A	ND U N/A		ND U N/A		12.3 J N/A	4
Total Target SVOCs	N/A	100(a)	3.4 J N	N/A	4 J N/A	đ	40.5 J	N/A	12.4 J	N/A	ND U N/A		ND U N/A	_	84.6 J N/A	A
Total SVOC TICs	N/A	100(a)	i	1	ND U N/A	A	ł	ı	46 J	N/A	ı	1	ND UN/A	_	820 J N/A	A
Total SVOCs	N/A	100 <sup>(a)</sup>	3.4 J N	N/A	4 J N/A	A	40.5	N/A	58.4	N/A	ND U N/A		ND U N/A		904.6 J N/A	4
Inorganics Aluminum	7429-90-5	NS	27500	200	64700	62.6	175000	200	346000	188	47300	200	29600	62.6	7540	62.6
Antimony	7440-36-0	3	33 )	09	ND ON	5.8	131	09	n QN	17.4	15.5 J	09	ND ON	5.8	ND O	5.8
Arsenic	7440-38-2	25	6.82 J	10	19.4	3.2	33.4	10	55.2	9.6	6.48 J	10	9.5	3.2	ND O	3.2
Barium	7440-39-3	1,000	910	200	1860	1.7	4380	200	5770	5.1	732	200	653	1.7	392	1.7
Beryllium	7440-41-7	3 GV	4.05 J	D	6.5	0.3	14.8	2	46.6	0.9	5.12	22	4.5	0.3	n qu	0.3
Cadmium	7440-43-9	5	2.12 J	വ	n QN	0.4	8.9	Ŋ	n QN	1.2	2.53 J	2	O ON	0.4	ND ON	0.4
Calcium	7440-70-2	NS NS	50400	2000	42200	42.5	87900	2000	110000	127	56200 50	5000	45000	42.5	43700	42.5
Chromium	7440-47-3	3 20	78.5	10	129	1.6	375	10	854	4.8	105	10	123	1.6	41.5	1.6
Cobalt	7440-48-4	SN 1	34 J	20	74.2	1.7	133	20	360	5.1	34.1 J	20	39.1 J	1.7	4.2 J	1.7
Copper	7440-50-8	3 200	114	25	280	3.7	1220	25	5010	11.1	94.5	25	110	3.7	207	3.7
Iron	7439-89-6	300	34900	100	95800	39.2	179000	100	486000	118	50200	100	75000	39.2	8260	39.2

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Table 4-5. Groundwater Sample Results Site Characterization Report Hester Street Former Manufactured Gas Plant

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Sample Location			MW-01	-	MW-01		MW-04	4	MW-04		MW-07	- 2	MW-07		MW-11	
Sample Date		000	12/7/06	9 0	1/31/08		12/7/06 X5814.04	90	1/31/08		12/7/06 x5814-05	ار بر	1/31/08	38	1/31/08*	* *
Parameters	CASRN	GA Std (b)	Conc Q MDL	MDL	Conc Q	MDL	Conc Q MDL	MDL	Conc Q	MDL	Conc Q MDL	MDL	Conc Q	MDL	Conc Q	MDL
Inorganics (Continued)																
Manganese	7439-96-5	300	3790	15	8760	1.2	3120	15	7770	3.6	3260	15	3880	1.2	253	1.2
Iron and Manganese	N/A	200	38690	N/A	104560	N/A	182120	N/A	493770	N/A	53460	N/A	78880	N/A	8513 N	N/A
Lead	7439-92-1	25	57.6	10	118	2.7	1010	10	3760	8.1	43.7	10	44.8	2.7	317	2.7
Magnesium	7439-95-4	35,000 GV	26600	2000	40500	41.6	102000	2000	153000	125	23200	2000	23000	41.6	8520	41.6
Mercury	7439-97-6	0.7	0.23	0.2	0.2 J	0.1	7.33	0.2	21.4	0.5	0.1 J	0.2	0.83	0.1	ND U	0.1
Nickel	7440-02-0	100	148	40	339	2.4	522	40	1270	7.2	128	40	147	2.4	43.6	2.4
Potassium	7440-09-7	NS	28000	2000	29200	315	75300	2000	76600	946	21400	2000	20800	315	11600	315
Selenium	7782-49-2	10	N QN	20	O ON	4.2	ND ON	20	n qu	12.6	ND ON	20	4.8 J	4.2	D QN	4.2
Silver	7440-22-4	20	4.34 J	10	14.6	1.4	N QN	01 10	ON ON	4.2	O DN	10	N QN	1.4	1.6 J	1.4
Sodium	7440-23-5	20,000	134000	2000	62100	396	144000	2000	74100	1186	86400	2000	67800	396	97100	396
Thallium	7440-28-0	0.5 GV	N QN	20	O ON	4.7	N QN	7 20	N QN	14.1	O DN	20	ND U	4.7	ND ON	4.7
Vanadium	7440-62-2	NS	78.2	20	153	m	489	20	1190	6	105	20	122	3	18 J	3
Zinc	7440-66-6	2,000 GV	293	20	345	2.8	1260	20	5420	17.4	197	20	168	2.8	373	5.8
Cyanide	N/A	200	56	10	ON ON	10	N QN	01 10	N ON	10	38	10	ND O	10	ND O	10
Cvanide-Amenable	N/A	200	ND ON	10	1	2	ND ON	10	1	1	O DN	10	ì	ì	ı	1

See page 5 for notes

# Hester Street Former Manufactured Gas Plant Table 4-5. Groundwater Sample Results Site Characterization Report Manhattan, New York

All results in micrograms per liter

Concentrations in bold and underlined exceed Division of Groundwater TOGS 1.1.1 standards or Guidance Values

Value applies to total of organics listed in the NY State Groundwater Effluent Limitations table from the Division of Water Technical and Operational Guidance Series (1.1.1) with a

NYSDEC Class GA Standards from Division of Water Technical and Operational Guidance Series (1.1.1) June 1998 with amendment to Table 1 dated April 2000 groundwater effluent limitation less than 100 ug/l.

See total phenols

Parameter not analyzed

Benzene, toluene, ethylbenzene and xylenes BTEX

NYSDEC Class GA Guidance Value.

Method detection limit MDL S G

Not applicable

Not detected at reporting limit

No standard or guidance value

Polynuclear aromatic hydrocarbons PAH

Data Qualifier

Semivolatile organic compounds SVOC

Volatile organic compounds

Data Qualifiers

Value considered estimated based on data validator's report (Appendix B).

Estimated concentration below quantitation limit

Spiked sample recovery not within control limits

Not Detected

N:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Tables\Table 4-5,4-6 GW Results.xlw)Table 4-5 Notes

#### Table 4-6. Summary of Groundwater Sample Detections and Exceedances Site Characterization Study Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

Parameter	Samples Analyzed	Detections	Exceedances		iximum entration	Sample with Reported Conc	_
Volatile Organic Compound (VOC)							
Acetone	7	1	3.7.		39	MW-11	1/31/08
Bromodichloromethane	7	5			3.3	MW-07	12/7/0
Bromoform	7	-		ND		Not	Applicab
Bromomethane	7	10-61	10 E	ND		Not	Applicab
2-Butanone	7	1	2		1.8	MW-11	1/31/08
Carbon Disulfide	7	>+1	391.7	ND		Not	Applicab
Carbon Tetrachloride	7	34	07	ND		Not	Applicab
Chlorobenzene	7	197	16	ND		Not	Applicab
Chloroethane	7	4	-	ND		Not	Applicab
Chloroform	7	5	3		15	MW-11	1/31/08
Chloromethane	7	- 4	150	ND		Not	Applicab
Dibromochloromethane	7	10 <del>1</del>	35	ND		Not	Applicab
1,1-Dichloroethane	7	1.0	10 C	ND		Not	Applicab
1,2-Dichloroethane	7	1	+	ND		Not	Applicab
1,1-Dichloroethene	7	0.41	29/2	ND		Not	Applicab
cis-1,2-Dichloroethene	7	4	-		1.8	MW-01	12/7/0
trans-1,2-Dichloroethene	7	De.		ND		Not	Applicab
Total 1,2-Dichloroethene	7	3	2		0.5	MW-01	1/31/0
1,2-Dichloropropane	7		1 ± 0	ND		Not	Applicab
cis-1,3-Dichloropropene	7	-		ND	-	Not	Applicab
trans-1,3-Dichloropropene	7	12.	25.	ND		Not	Applicab
2-Hexanone	7	10-2		ND		Not	Applicab
4-Methyl-2-Pentanone	7	-	3.5	ND		Not	Applicab
Methylene Chloride	7	1			0.6	MW-11	1/31/08
Styrene	7	1	-		1.6	MW-11	1/31/08
1,1,2,2-Tetrachloroethane	7	3	0.6	ND		Not	Applicab
Tetrachloroethene	7	5	3		5.8	MW-01	12/7/0
1,1,1-Trichloroethane	7			ND		Not	Applicab
1,1,2-Trichloroethane	7	-	4	ND		Not	Applicab
Trichloroethene	7	4	10.2		1.1	MW-01	12/7/0
Vinyl Chloride	7	1	-	ND		Not	Applicab
Benzene	7			ND		Not	Applicab
Toluene	7	2	1		61	MW-11	1/31/08
Ethyl Benzene	7	1			4	MW-11	1/31/08
m/p-Xylenes	7			ND		Not	Applicab
o-Xylene	7			ND		Not	Applicab
Xylene (Total)	7	1	-		4.2	MW-11	1/31/08
Total BTEX	7	-	-	ND		Not	Applicab
Total Target VOCs	7	6	1		128.1	MW-11	1/31/08
VOCTICs	7	2	2		288.1	MW-11	1/31/08
Total VOCs	7	7	2		416.2	MW-11	1/31/08
Semivolatile Organic Compounds (SVOC)							
bis(2-Chloroethyl)ether	7	-	4	ND		Not	Applicab
bis(2-Chloroethoxy)methane	7	-		ND		Not	Applicab
2,2-oxybis(1-Chloropropane)	7	-	-	ND		Not	Applicab
bis(2-Ethylhexyl)phthalate	7	3	1		5.4	MW-04	12/7/0
4-Bromophenyl-phenylether	7	-	1.0	ND		Not	Applicab
Butylbenzylphthalate	7		-	ND		Not	Applicab
Carbazole	7	2		ND		Not	Applicab

# Table 4-6. Summary of Groundwater Sample Detections and Exceedances Site Characterization Study Hester Street Former Manufactured Gas Plant Manhattan, New York

Parameter	Samples Analyzed	Detections	Exceedances	Maximum Concentration	Sample with Reported Cond	1 T T T T T T T T T T T T T T T T T T T
SVOCs (Continued)						
4-Chloroaniline	7	7	-	ND	Not	Applicable
2-Chloronaphthalene	7	14	-	ND	Not	Applicable
4-Chlorophenyl-phenylether	7	9.7	¥.	ND	Not	Applicable
Dibenzofuran	7	-	D ±"	ND	Not	Applicable
Di-n-butylphthalate	7	1.2	-	ND	Not	Applicable
1,2-Dichlorobenzene	7	7-1		ND	Not	Applicable
1,3-Dichlorobenzene	7	-	-	ND	Not	Applicable
1,4-Dichlorobenzene	7		10 ± 5	ND	Not	Applicable
3,3'-Dichlorobenzidine	7	2	3	ND	Not	Applicable
Diethylphthalate	7	39-1	391.1	ND	Not	Applicable
Dimethylphthalate	7	4	-	ND	Not	Applicable
2,4-Dinitrotoluene	7		>4.	ND	Not	Applicable
2,6-Dinitrotoluene	7	- 4	-	ND	Not	Applicable
Di-n-octylphthalate	7	-	2	ND	Not	Applicable
Hexachlorobenzene	7	12		ND	Not	Applicable
Hexachlorobutadiene	7		-	ND	Not	Applicable
Hexachlorocyclopentadiene	7		*	ND	Not	Applicable
Hexachloroethane	7	14		ND	Not	Applicable
Isophorone	7			ND	Not	Applicable
2-Nitroaniline	7			ND	Not	
	7			11.00		Applicabl
3-Nitroaniline		**.		ND	Not	Applicabl
4-Nitroaniline	7	-		ND	Not	Applicable
Nitrobenzene	7			ND	Not	Applicable
N-Nitroso-di-n-propylamine	7	-	-7	ND	Not	Applicable
N-Nitrosodiphenylamine	7			ND	Not	Applicable
1,2,4-Trichlorobenzene	7	100		ND	Not	Applicable
Phenolic Compounds	7	7	1,5	ND	Not	Applicable
2-Chlorophenol	7		3-1	ND	Not	Applicable
2,4-Dichlorophenol	7		-	ND	Not	Applicable
2,4-Dimethylphenol	7			ND	Not	Applicable
2,4-Dinitrophenol	7	7	3	ND	Not	Applicable
2-Methylphenol	7	-	-	ND	Not	Applicable
4,6-Dinitro-2-methylphenol	7	7	-	ND	Not	Applicable
4-Chloro-3-methylphenol	7	> <del>-</del> 1	-	ND	Not	Applicable
4-Methylphenol	7	1	1	20	MW-11	1/31/08
3+4-Methylphenols	7			ND	Not	Applicable
2-Nitrophenol	7			ND	Not	Applicable
4-Nitrophenol	7		-	ND	Not	Applicable
Pentachlorophenol	7	2		ND	Not	Applicable
2,4,5-Trichlorophenol	7		3.5	ND	Not	Applicable
2,4,6-Trichlorophenol	7		52	ND	Not	Applicable
Phenol	7	2	2	15	MW-11	1/31/08
Total Phenolic Compounds	7	1.6	1.0	ND	Not	Applicable
PAHs	7	7	2	ND	Not	Applicable
Acenaphthene	7	3		12	MW-04	1/31/08
Acenaphthylene	7	4		3.9	MW-04	12/7/06
Anthracene	7	1	1.5	1.2	MW-11	1/31/08
Benzo(a)anthracene	7	2	2	1.5	MW-04	12/7/0
Benzo(a)pyrene	7	1	1	3.3	MW-04	12/7/06
Benzo(b)fluoranthene	7	1	1	4.4	MW-04	12/7/06

### Table 4-6. Summary of Groundwater Sample Detections and Exceedances Site Characterization Study Hester Street Former Manufactured Gas Plant

#### Manhattan, New York

Parameter	Samples Analyzed	Detections	Exceedances		aximum centration	Sample with Reported Cond	
SVOCs (Continued)							
Benzo(g,h,i)perylene	7	1	(-)		2	MW-04	12/7/0
Benzo(k)fluoranthene	7	~	~	ND		Not	Applicabl
Chrysene	7	2	2		2.1	MW-04	12/7/0
Dibenzo(a,h)anthracene	7	161	161	ND		Not	Applicabl
Fluoranthene	7	2	(%)		2.2	MW-04	12/7/0
Fluorene	7	1.	(%)	ND		Not	Applicabl
Indeno(1,2,3-cd)pyrene	7	1	1		1.1	MW-04	12/7/0
2-Methylnaphthalene	7	1	191		1.3	MW-11	1/31/08
Naphthalene	7	114	I.A.I.	ND		Not	Applicabl
Phenanthrene	7	2	~		3.2	MW-11	1/31/08
Pyrene	7	2	-		7.7	MW-04	12/7/0
Total PAHs	7	4	- 4		35.1	MW-04	12/7/0
Total Target SVOCs	7	5	1 8		84.6	MW-11	1/31/08
Total SVOC TICs	7	2	1		820	MW-11	1/31/08
Total SVOCs	7	5	1		904.6	MW-11	1/31/08
Inorganics							1.010
Aluminum	7	7	-		346000	MW-04	1/31/0
Antimony	7	3	3		131	MW-04	12/7/0
Arsenic	7	6	2		55.2	MW-04	1/31/0
Barium	7	7	3		5770	MW-04	1/31/0
Beryllium	7	6	6		46.6	MW-04	1/31/0
Cadmium	7	3	1		8.9	MW-04	12/7/0
Calcium	7	7			110000	MW-04	1/31/0
Chromium	7	7	6		854	MW-04	1/31/0
Cobalt	7	7	l-		360	MW-04	1/31/0
Copper	7	7	4		5010	MW-04	1/31/0
Iron	7	7	7		486000	MW-04	1/31/0
Manganese	7	7	6		8760	MW-01	1/31/0
Iron and Manganese	7	7	7		493770	MW-04	1/31/0
Lead	7	7	7		3760	MW-04	1/31/0
Magnesium	7	7	3		153000	MW-04	1/31/0
Mercury	7	6	3		21.4	MW-04	1/31/0
Nickel	7	7	6		1270	MW-04	1/31/0
Potassium	7	7	-		76600	MW-04	1/31/0
Selenium	7	1	18.		4.8	MW-07	1/31/0
Silver	7	3	×		14.6	MW-01	1/31/0
Sodium	7	7	7		144000	MW-04	12/7/0
Thallium	7	14	i ÷	ND		Not	Applicabl
Vanadium	7	7			1190	MW-04	1/31/0
Zinc	7	7	1		5420	MW-04	1/31/0
Cyanide	7	2			56	MW-01	12/7/0
Cyanide-Amenable	7		-1	ND		Not	Applicabl

Notes:

Maximum concentrations reported in milligrams per kilogram

ND = Not detected

= No exceedances reported

N:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Tables\[Table 4-5,4-6 GW Results.xlw]Table 4-6

Table 4-7. Soil Gas Sample Results
Site Characterization Study
Hester Street Former Manufactured Gas Plant
Manhattan, New York

17-44-2	Compound	CASSRV	Guidance Value	nin n	Location Sample Date Sample ID Summa Canister ID Laboratory Number SH OSHA	SB-02 11/8/06 SG-2-126 93279 9KO90105-00 Conc	× 10	SG-03 1/17/08 SG-3(7.5FT) 3211 KO90105-00 Conc	× 0
17421   NAV   550,000   ZA00,000   ND   ND   ND   SO   ND   SO   ND	Compound	CASRN	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3) (p	_	(ug/m3) (p	
11432   No.   339   No.   No.   2   No.   No.   1   1.2   No.   No.   2   No		67-64-1	NGV	590,000	2,400,000	ND	ND	ND	
The probleme   T-5-71-4	Benzene	71-43-2	NGV	319	3,190	NO	N	N	
Page	Bromodichloromethane	75-27-4	NGV	Į.	1	N	NO	ND	
ame (15-52) NGV 5-170 5-170 ND ND 2 ND ND 2 ND ND 1 ND ND 1 ND 1 ND	Bromoethene	593-60-2	NGV	Ł	1	1	1	ND	
Interhane (1,4859 NAV 95,000 ND ND 2 ND ND 2 ND ND 1 ND 1 ND 1 ND 1	Bromoform	75-25-2	NGV	5,170	5,170	ND	ND	ND	
uidalene         106-99-0         NoV         590,000         590,000         40,0	Bromomethane	74-83-9	NGV	í	80,000	ND	ND	ND	
Septembrie   78933   NAV   30000   50,0000   ND   ND   10   ND   ND   12   ND   ND   10   ND   ND   12   ND   ND   10   ND   ND   12   ND   ND   13   ND   ND   13   ND   ND   14   ND	1,3-Butadiene	106-99-0	NGV	í	2,210	ND	ND	ND	
Interhalpholde 55-235 NGV 12600 62.3001 ND ND 5 ND MD 5 ND ND 1 ND 10 1 ND 10	2-Butanone	78-93-3	NGV	590,000	590,000	ND	ND	ND	
Intrivinentification (1987) 1887 (MgV 12,800 E2,390) ND ND 2 ND ND 2 ND ND 1 ND 1 ND 1 more interior (1987) 1887 (MgV 12,800 MgV ND 2 ND ND 2 ND ND 1 ND 1 ND 1 more interior (1987) 1887 (MgV 12,800 MgV ND 2 ND ND 2 ND ND 1 ND 1 ND 1 ND 1 MgV ND 1,244,81 NGV 174,634 NGV 18,700 ND 1 ND ND 1 ND 1 ND 1 ND 1 ND 1 ND 1	Carbon disulfide	75-15-0	NGV	3,000	62,200	ND	ND	NO	
Interiere 124431 NGV - 350,000 ND ND 2 ND ND 2 ND ND 10 ND propieme 124431 NGV - 250,0000 ND ND ND 2 ND ND 1 ND	Carbon tetrachloride	56-23-5	NGV	12,600	62,900	ND	ND	ND	
biance in this commitment         75-00-30         NRV         —         26,00,000         ND         2         ND         ND         25         ND           part propers         1,075,61         NRV         3,000         3,000         1,00         ND         ND         ND         ND         2,5         9.2         45         1         0,58           part propers         1,075,61         NRV         3,000         1,00         ND	Chlorobenzene	108-90-7	NGV	b	350,000	ND	ND	ND	
Immine (7-50-3) Nav (7-50-3) Na	Dibromochloromethane	124.48-1	NGV	4	1	ND	ND	N	
withine         74,873 (NG)         NGV         24,000 (NG)         NG         2,000 (NG)         NG         NG         NG         2,000 (NG)         NG	Chloroethane	75-00-3	NGV	1 700	2,600,000	D ND	ND ND	NO	
Displacement   107-05-1   NGV   250,000   3,000   ND   ND   2   ND   ND   2   ND   ND	Chloromethane	74-87-3	NGV NGV	3,700	207,000	40.00	UN UN	5 5	
154.98   MGV   250.000     MD   MD   4   MD   MD   40   MD   MD   MD   MD   MD   MD   MD   M	3-Chloropropene	107-05-1	NGV	3,000	3.000	N	No	No	
starie         110-82-7         NGW         1,050,000         1,050,000         ND         ND         ND         1         ND         10         ND         1         ND         10         ND         1         ND         10         ND         ND         10         ND         10         ND	2-Chlorotoluene	95-49-8	NGV	250,000	1	ND	ND	N	
omnorbatine         106-934 No.         NO.         346         153,800 No.         ND.         21         ND.         21         ND.         10         1         ND.         10         10         ND.         10         10         ND.	Cyclohexane	110-82-7	NGV	1,050,000	1,050,000	ND	N	S	
Introductation	1,2-Dibromoethane	106-93-4	NGV	346	153,800	ND	ND	ND	
Introdenziarie   106.417.31	1,2-Dichlorobenzene	95-50-1	NGV	300,000	300,000	ND	ND	ND	
initroductiverier         105-46-7         NRV         4,950,000         4,950,000         ND         2         ND         AU         NU         AU	1,3-Uichlorobenzene	541-/3-1	NGV	1	150,000	NO	ND	No	
Loroenthame         73-126         New         4350,000         AD,000         ND         ND         ND         2         ND         AD         2         ND         ND         10         ND         10         ND         1         ND         1         ND         ND         2         ND         ND         2         ND         ND         1         ND         ND         1         ND         ND         ND         ND         ND         ND	1,4-Uichiorobenzene	106-46-7	NGV	4 OEA OAA	450,000	N N	N C	5 8	
107.06-22   NGV   4,000   202,500   ND   ND   2   ND   ND   2   ND   ND	1 1-Dichloroethane	75-34-3	NEV	4,950,000	400,000	200	8 8	5 6	
Dichloroethene         156.59.2         NGV	1.2-Dichloroethane	107-06-2	NGV	4.000	202,500	N	N	NO :	
2-Dichloroethene (101a) 156-60-5 NGV ND ND 2 ND ND 2 ND ND 1 ND 10 Increthene (101al) 540-59-0 NGV 790,000 ND ND 2 ND ND 1 ND 1 ND 10 Increthene (101al) 540-59-0 NGV 790,000 ND ND ND 2 ND ND 2 ND ND 1 ND 10 ND 10 Increthene (101al) 75-35-4 NGV - 350,000 ND ND 2 ND ND 2 ND ND 1 ND 1 ND 10	cis-1,2-Dichloroethene	156-59-2	NGV		1	ND	N	ND	
Ioroethene (total)         540-59-0         NGV         790,000         790,000	trans-1,2-Dichloroethene	156-60-5	NGV	T	1	ND	ND	ND	
Idioropichene   75-35-4   NiGV	1,2-Dichloroethene (total)	540-59-0	NGV	790,000	790,000	I	į į	ND	
Dichloropropane   78.87-5   NGV   - 350,000   ND   ND   2   ND   ND   2   ND   ND	1,1-Dichloroethene	75-35-4	NGV	î	I .	ND	ND	ND	
Dichloropropene   10061-01-5 NGV	1,2-Dichloropropane	78-87-5		T	350,000	ND	ND	ND	
Subminospropene   10041-02-6   Nisy	cis-1,3-Dichloropropene	10061-01-5		ī	1	NO	ND	N	Ì
Grant         123-91-1         NGV         3,600,000         -	1 2-Dichloro 1 1 2 2-tetrafficonothano	10061-02-6	1	7000000	7000,000	Z Z	N C	8 8	
Izene         100-41-4         NGV         435,000         435,000         ND         ND         2         ND         ND         2         ND         ND         4         220         ND         ND         1         0,54           ne         142-82-5         NGV         350,000         2,000,000         ND         ND         A         ND         4         44         220         1.0         ND           orobutadiene         87-68-3         NGV         240         -         ND	1,4-Dioxane	123-91-1	NGV	3,600	360,000	1	1	N	
bluene         622.96.8         NGV         —         ND         ND         A         ND         AD	Ethylbenzene	100-41-4	NGV	435,000	435,000	ND	ND	ND	
ne 142-82-5 NGV 350,000 2,000,000 ND ND 5 ND ND 1 1 1 1 1 0 orobutadiene 87.68-3 NGV 240 - ND ND 10 ND	4-Ethyltoluene	622.96-8	NGV	ı	7	ND	ND	220	
orobutatione         87-68-3         NGV         240         -         ND	n-Heptane	142-82-5	NGV	350,000	2,000,000	ND	ND	ND	
ue         110-54-3         NGV         180,000         1,800,000         ND         ND         ND         5         ND         ND         2.5         1.8           Julyl Ketone         591-78-6         NGV         4,000         410,000         -         -         -         ND         ND         2.5         ND           Jr Alcohol         67-63-0         NGV         980,000         980,000         -         -         -         ND         N	Hexachlorobutadiene	87-68-3	NGV	240	1	ND	ND	ND	
Duly/ Retone         591-78-6         NGV         4,000         410,000         -         -         -         ND         ND         2.5         ND           JAlcohol         67-50-000         980,000         980,000         980,000         -         -         -         ND         ND         ND         2.5         ND           ne-chloride         75-09-2         60         -         86,750         ND         ND         ND         ND         ND         ND         ND         ND         ND         2.5         1.8           H/2-pentanone         108-10-1         NGV         205,000         410,000         ND	n-Hexane	110-54-3	NGV	180,000	1,800,000	ND	ND	ND	
Indication   Ind	Methyl butyl Ketone	591-78-6	NGV	4,000	410,000	3	1	ND	
Here minore 109-12 NGV 205,000 410,000 ND ND 1 ND ND 1 ND ND 2.5 ND ND ND 100-100 ND 100 ND 2.5 ND ND ND 100 ND 2.5 ND ND ND 100 ND ND 2.5 ND ND ND 100 ND ND 2.5 ND ND ND 100-100 ND ND 1 ND ND 2.5 ND ND ND 100-100 ND ND 1 ND ND 2.5 ND ND ND 100-100 ND ND 1 ND ND ND 1 ND ND ND 1 ND ND ND 1 ND ND ND ND 1 ND	Isopropyl Alcohol	67-63-0	NGV	980,000	980,000	1	1	ND	
Seriody   Chicago   Control   Cont	Methyl 2 partages	75-09-2	NO.	205 000	86,750	S S	8 8	N N	
liene 91.20-3 NGV 50,000 50,000 ND ND 5 ND ND 5 58 300 2.5 ND ND 100-42-5 NGV 215,000 426,000 ND ND 2 ND ND 2 ND ND 1 ND	Methyl tert-butyl ether	1634-04-4	NGV	200,000	- 10,000	8 8	8 8	No	
100-42-5 NGV 215,000 426,000 ND ND 2 ND ND 2 ND ND 1 ND	Naphthalene	91-20-3	NGV	50,000	50,000	ND	ND	300	
	Styrene	100-42-5	NGV	215,000	426,000	ND	ND	ND	ND ND

## Hester Street Former Manufactured Gas Plant Table 4-7. Soil Gas Sample Results Site Characterization Study Manhattan, New York

		Guidance	Summ	Location Sample Date Sample ID Summa Canister ID		SB-02 11/8/06 SG-2-126 93279	0002	I.	SB-03 11/8/06 5G-1-128 6377	001		SG-03 1/17/08 SG-3(7.5FT) 3211 GK090105-001	F1)		S 1/- SG	SG-04 1/17/08 SG-4(6.5FT) 4564 46K090105-00	3
Compound	CASRN	Value (ug/m3)	(ug/m3)	OSHA (ug/m3)	Conc (ppbv)	Conc (ug/m3)	(ppbv)	(ppbv)	Conc (ug/m3)	(ppbv)	Conc (ppbv)	Conc (ug/m3)	) (ppbv	~	Conc C	Conc (ug/m3)	(ppb)
tert-Butyl Alcohol	75-65-0	NGV	980,000	980,000	ï	1	i	i	Ţ	i	ND		ND 25		ND	ND	U)
1,1,2,2-Tetrachloroethane	79-34-5	NGV	7,000	35,000	ND	ND	2	ND	ND	2	ND		-		ND	ND	0.2
Tetrachloroethene	127-18-4	100		678,000	7.6	51.53	2	17	115.26	2	110	- Commonweal	-		0.72	4.9	0.2
Tetrahydrofuran	1099-99-9	NGV	590,000	590,000	1	Ł	1	1	1	į	ND		T		ND	ND	ហ
Toluene	108-88-3	NGV	375,000	754,000	ND	ND	N	N	ND	2	ND		ND 1		5.1	19	0.2
1,2,4-Trichlorobenzene	120-82-1	NGV	40,000	1	ND	7	10	ND	ND	10	ND				ND	ND	0.5
1,1,1-Trichloroethane	71-55-6	NGV	1,900,000	1,900,000	ND	ND	2	ND	ND	2	2		11 1		NO	ND	0,2
1,1,2-Trichloroethane	79-00-5	NGV	45,000	45,000	ND	ND	2	NO	ND	2	ND		0 1		ND	ND	0,2
Trichloroethene	79-01-6	ហ	L	537,000	ND	ND	2	ND	ND	2	1.3		7 1	-	ND	ND	0.2
Trichlorofluoromethane	75-69-4	NGV	5,600,000	5,600,000	ND	ND	2	ND	ND	2	ND			0	.25	1.4	0.2
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NGV	7,600,000	7,600,000	ND	ND	2	ND	ND	2	ND		ND 1		ND	ND	0.2
1,2,4-Trimethylbenzene	95-63-6	NGV	125,000	ŧ.	ND	ND	2	ND	ND	2	130		0 1.0		ND	ND	0.2
1,3,5-Trimethylbenzene	108-67-8	NGV	125,000	1	ND	ND	N	ND	ND	2	31		150 1.0		NO	ND	0.3
2,2,4 Trimethylpentane	540-84-1	NGV	350,000	2,335,000	1.	F	ì	1	3	1	ND		ND 1		0.4	1.9	0.2
Vinyl chloride	75-01-4	NGV	2,560	2,560	ND	ND	2	ND	ND	2	ND	9		И	ND	ND	0.2
m or p-Xylene	1330-20-7	NGV	435,000	435,000	ND	ND	N	ND	ND	2	5.7		25 2.5		1.6	6.9	0.5
o-Xylene	95-47-6	NGV	435,000	435,000	ND	ND	2	ND	ND	2	5.5		4 1	Ó	0.42	1.8	0,2
Xylene (total)	1330-20-7	NGV	435,000	435,000		Ł	, i	i		1	11	7	48 1		2	8.7	0.2

-: No exposure limit

~: Sample not analyzed for this parameter

CASRN: Chemical Abstract Services Registry Number

Conc.: Concentration

ID: Identification

NGV: No guidance value

NIOSH: National Institute for Occupational Safety and Health exposure limits (Time weighted average)

OSHA: Occupational Safety and Health Administration exposure limits (Time weighted average) ppbv: Parts per billion by volume

RL: Reporting Limit

ug/m3: Micrograms per cubic meter Bold, underlined result exceeds guidance value.

N:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Tables\[Table 4-7 SGS.xls]Soil Gas Data

Table 5-1. Analytical Results-Trip and Field Blank Samples Former Hester Street Works Manhattan, New York

Sample Location Field Sample ID			ld Blank B11106	retu.	Tri	ip Blank		1000	p Blank 111706		Field Blank FB120706	1	1955	ip Blank 3120706
Date		1	1/1/06		1	1/10/06		10	/16/06		12/7/06			2/7/06
Sample No.			5264-04		h 10 10 22	5388-01			546-04		X5814-01		The same	5814-02
Parameter	CASRN	Conc	MDL	0	Conc	MDL	Q		MDL (	Co		0	Conc	MDL Q
Volatile Organic Compounds			,,,,,,,	×			×		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	111111	×	00.00	
Acetone	67-64-1	15	25	JB	7.00	25	U		25 L	j	25	U		25 U
Benzene	71-43-2	10	5	U	94	5	U		5 (			U		5 U
Bromodichloromethane	75-27-4		5	U	4+	5	U		5 (			U	-	5 U
Bromoform	75-25-2		5	U	-	5	U		5 (	-		U		
	74-83-9			-			-	1-0		_		-		5 U
Bromomethane		-4	5	U		5	U	46	5 L	-		U		5 U
2-Butanone	78-93-3		25	U	++	25	U	(44)	25 t			U	***	25 U
Carbon Disulfide	75-15-0	- 67	5	U	3.	5.	U	NA.	5 (		100	U	- 70	5 U
Carbon Tetrachloride	56-23-5	34	5	U	190	5	U	779	5 l	-		U		5 U
Chlorobenzene	108-90-7	**	5	U	34	5	U		5 L	-		U	13-6	5 U
Chloroethane	75-00-3	**	5	U		5	U	199	5 t			U	30	5 U
Chloroform	67-66-3	-	5	U	**	5	U		5 L	_		U	11024	5 U
Chloromethane	74-87-3		5	U	-	5	U		5 1	-		U	144	5 U
Dibromochloromethane	124-48-1		5	U	-	5	U	1	5 1			U	-	5 U
1,1-Dichloroethane	75-34-3		5	U	-	5	U	249	5 (			U	- ( <del>*</del>	5 U
1,2-Dichloroethane	107-06-2	1++	5	U	**		U	-	5 (		-	U	-	5 U
1,1-Dichloroethene	75-35-4	- 3*	5	U	34	5	U	Jiệ <del>s</del> ()	5 L			U	34	5 U
cis-1,2-Dichloroethene	156-59-2		5	U	44	5	U	i i a	5 1	J	5	U	44	5 U
trans-1,2-Dichloroethene	156-60-5	Ea.	5	U		5	U	142	5 L	J	5	U	22	5 U
1,2-Dichloropropane	78-87-5		5	U		5	U	120	5 1		5	U		5 U
cis-1,3-Dichloropropene	10061-01-5		5	U		5	U	()	5 L	J	5	U		5 U
trans-1,3-Dichloropropene	10061-02-6		5	U	-	5	U	144	5 1	j	5	U	1997	5 U
Ethyl Benzene	100-41-4	-7	5	U		5	U	(**)	5 L	J	5	U		5 U
2-Hexanone	591-78-6		25	U	34	25	U	,22.	25 1	1 4		U		25 U
4-Methyl-2-Pentanone	108-10-1		25	Ū		25	U	144	25 1		100	U		25 U
Methylene Chloride	75-09-2	1.1	5	JB	(24)	5	U	144	5 L	-		U		5 U
Styrene	100-42-5		5	U		5	U		5 1	1	Ta-	U	-	5 U
1,1,2,2-Tetrachloroethane	79-34-5		5	U	-	5	U	100	5 1		140	U		5 U
Tetrachloroethene	127-18-4		5	U	-	5	U	177	5 1			U		5 U
Toluene	108-88-3		5	U		5	U	199	5 1	9		U		5 U
1,1,1-Trichloroethane	71-55-6		5	U	34	5	U	120	5 1	-		U	-	5 U
1,1,2-Trichloroethane	79-00-5		5	U	-	5	U		5 1		1.0	U		5 U
Trichloroethene	79-01-6		5	U	-	5	U	144	5 L					
Vinyl Chloride	75-01-4		5	U	-	5	U		5 L	_		U	See	5 U
Color of Tell and comment of the Color of th				U			-	1940				U		
o-Xylene	95-47-6	*	5	-		5	U		5 L			U	- 64	5 U
m/p-Xylenes	126777-61-2	**	5	U	-	5	U	***	5 (			U	. "	5 U
Total Xylenes		47.1	N/A	U		N/A	U	**	N/A U	-	2111	U	7.5	N/A U
Total VOCs		16.1	N/A	_	- **	N/A	-7	-	N/A	-	N/A	_	-	N/A
Semivolatile Organic Compounds	- Caronia			-			_							
Acenaphthene	83-32-9		10	U	~	~		~	1		7.5	U	~	124
Acenaphthylene	208-96-8		10	U	~	~		~	*			U	144	~
Anthracene	120-12-7	34%	10	U	~	$\sim$		~	~		10	U	~	~
Benzo(a)anthracene	56-55-3	**	10	U	~	~		~	~	-	10	U	~	~
Benzo(a)pyrene	50-32-8	-75	10	U	~	~		~	~	71	10	U	~~	~
Benzo(b)fluoranthene	205-99-2	0.0	10	U	-	~			-		10	U	~	-
Benzo(g,h,i)perylene	191-24-2		10	U	~	~		*	~	24	10	U	~	~
Benzo(k)fluoranthene	207-08-9	- 2-	10	U	-	~			7	- 0	10	U	~	~
bis(2-Chloroethoxy)methane	111-91-1		10	U	~	~		*	*		10	U	~	~
bis(2-Chloroethyl)ether	111-44-4		10	U		~		~			2.00	U	~	~
bis(2-Ethylhexyl)phthalate	117-81-7	2.0	10	JB	~	~		~	~		10	U	~	~
4-Bromophenyl-phenylether	101-55-3		10	U	~	~		~	~		VAR	U	~	~
Butylbenzylphthalate	85-68-7	- 0.	10	U	-	- ~		4				U	~	~
Carbazole	86-74-8	44	10	U	~	~		~	-	- 22		U	~	~
4-Chloro-3-methylphenol	59-50-7	- 22	10	U	~	~	-	~	-		-	U	*	140
4-Chloroaniline	106-47-8		10	U	~	~		~		-		U	~	~
2-Chloronaphthalene	91-58-7	-	10	U	~	-	-	~	~	-		U	-2	
2-Chlorophenol	95-57-8		10	U	~		+	2			3.6	U	~	~
			10	U		~			~				-	
4-Chlorophenyl-phenylether	7005-72-3			_	~~	~	-	~	~		-	U	~	~
Chrysene	218-01-9	- 17	10	U	~	~	-	~	~	-		U	~	~
Dibenz(a,h)anthracene	53-70-3		10	U	~	~	-	~	~			U	2	~
Dibenzofuran	132-64-9		10	U	~	~		*	~			U	~	~
1,2-Dichlorobenzene	95-50-1		10	U	~	~		~	~			U	~	~
1,3-Dichlorobenzene	541-73-1	-	10	U	~	~		~	~	-		U	~	~
1,4-Dichlorobenzene	106-46-7		10	U	~	~		144	-	-	10	U	~	~

Table 5-1. Analytical Results-Trip and Field Blank Samples Former Hester Street Works Manhattan, New York

Sample Location Field Sample ID Date Sample No.		(F)	ld Blank B11106 1/1/06 5264-04		TB	p Blank 111006 /10/06 388-01		TB 11	p Blank 111706 1/16/06 5546-04	FE I	eld Blank 3120706 2/7/06 5814-01		TB	p Blank 120706 2/7/06 814-02	
Parameter	CASRN	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL Q	Conc	MDL	Q	Conc	MDL	Q
Semivolatile Organic Compound	ds (continued)														T
3,3-Dichlorobenzidine	91-94-1	4-	10	U	~	~		~	~	-	10	U	~	~	
2,4-Dichlorophenol	120-83-2	- 44	10	U	>~	~		~	~	-	10	U	~	~	
Diethylphthalate	84-66-2	144	10	U	-	-		~	~		10	U	~	~	ī
2,4-Dimethylphenol	105-67-9	140	10	U	~	~		~	~	*	10	U	~	-	ī
Dimethylphthalate	131-11-3	- 19	10	U	~	-		~		70	10	U	~	7	Π
Dî-n-butylphthalate	84-74-2	2.5	10	J	~	~		~	~		10	U	~	~	
4,6-Dinitro-2-methylphenol	534-52-1	- 47	10	U	~	~		~	~	19-25	10	U	~	~	
2,4-Dinitrophenol	51-28-5	24	10	U	~	~		~	~	144	10	U	~	~	3
2,4-Dinitrotoluene	121-14-2	49	10	U	*	~		~	~	144	10	U	~	~	
2,6-Dinitrotoluene	606-20-2		10	U	~	~		~	~	200	10	U	~	~	
Di-n-octyl phthalate	117-84-0	46	10	U	~	*		~	~	( text	10	U	~	~	ī
Fluoranthene	206-44-0		10	U	~	~		~	~	75	10	U	~	~	1
Fluorene	86-73-7	**	10	U	~	~		~	~		10	U	-	_	T
Hexachlorobenzene	118-74-1	- 46	10	U	~	~		~	~		10	U	~	F-0	1
Hexachlorobutadiene	87-68-3	14	10	U	~	~		~	~	44	10	U	~	~	
Hexachlorocyclopentadiene	77-47-4		10	U	~	~		~	~	24	10	U	-	~	
Hexachloroethane	67-72-1	- 1-	10	U	~~	-		~	~		10	U	~	~	
Indeno(1,2,3-cd)pyrene	193-39-5	**	10	U	~	~		~	~	14.	10	U	×-	~	
Isophorone	78-59-1		10	U	~	-		~	~	(44)	10	U	~	~	
2-Methylnaphthalene	91-57-6	**	10	U	~	~		~	~		10	U	~	~	
2-Methylphenol	95-48-7	- 96	10	U	-	~		~	~		10	U	~	~	ī
3+4-Methylphenols	106-44-5		10	U	~	×.		~	~	144	10	U	~	~	П
Naphthalene	91-20-3	44	10	U	~	~		~	~	-	10	U	~	~	П
2-Nitroaniline	88-74-4	240	10	U	~	~		~	-	12	10	U	~	~	
3-Nitroaniline	99-09-2		10	U	~	~		~	~		10	U	~~	~	Т
4-Nitroaniline	100-01-6	75	10	U	~	~		~	~	15	10	U	~	~	ī
Nitrobenzene	98-95-3		10	U	~	~		~	~	144	10	U	~	·	ī
2-Nitrophenol	88-75-5		10	U	~	~		~	~		10	U	~	~	
4-Nitrophenol	100-02-7	54	10	U	~	-		~	~	141	10	U	~	~	
N-Nitroso-di-n-propylamine	621-64-7	44	10	U	~	~		1-4	~	*	10	U	<b>&gt;</b> ~	1~	
N-Nitrosodiphenylamine	86-30-6	4-	10	U	~	-		~	-	440	10	U	~	~	ī
2,2-oxybis(1-Chloropropane)	108-60-1	96	10	U	~	~		~	~	1991	10	U	~	~	
Pentachlorophenol	87-86-5	194	10	U	~	-		~	~	777	10	U	~	~	
Phenanthrene	85-01-8	**	10	U	~	~		~	~	100	10	U	*	~	ī
Phenol	108-95-2		10	U	~	~		-	4	1241	10	U	~	~	T
Pyrene	129-00-0	44	10	Ü	~	~		~	~	144	10	U	~	~	Ī
1,2,4-Trichlorobenzene	120-82-1		10	U	~	~		~	~	44	10	U	~	~	
2,4,5-Trichlorophenol	95-95-4	4-	10	U	~	~		~	-	1.2	10	U	~	~	Ť
2,4,6-Trichlorophenol	88-06-2	1944	10	U	~	~		~	~		10	U	~	~	Ť

Table 5-1. Analytical Results-Trip and Field Blank Samples Former Hester Street Works Manhattan, New York

Sample Location Field Sample ID Date Sample No.		FI	ld Blank 311106 1/1/06 5264-04		TB	p Blank 111006 /10/06 388-01		TB	p Blank 111706 /16/06 546-04		FB 1	ld Blank 1120706 2/7/06 5814-01		TB	p Blank 120706 2/7/06 5814-02
Parameter	CASRN	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL Q
Inorganics															
Aluminum	7429-90-5	•	200	U	~	~	1	-	-		38.1	200	J	~	~
Antimony	7440-36-0	-	60	U	~	~		~	~			60	U	-	-
Arsenic	7440-38-2	++	10	U	>-1	100		9	~		122	10	U	~	i-
Barium	7440-39-3	-	200	U	~	~		~	~		1,22	200	U	~	~
Beryllium	7440-41-7	úa.	5	U	~	pe i		~	~		1.73	5	J	~	~
Cadmium	7440-43-9	-	5	U	~	~		~	~		0.63	5	J	~	~
Calcium	7440-70-2	44	5,000	U	-	-		~	-		44	5,000	U	-	+
Chromium	7440-47-3	34	10	U	~	~		~	~		3-6	10	U	~	
Cobalt	7440-48-4	146	50	U	~	~		~	-			50	U	~	~
Copper	7440-50-8	-	25	U	~	~		~	~			25	U	~	~
Cyanide	N/A	**	10	U	~	~		~			74	10	U	~	Fig.
Iron	7439-89-6	- 24	100	U	~	~		~	~		70	100	U	~	~
Lead	7439-92-1	**	5	U	~	~	- 7	~	~		744	5	U	_ i~` i	~
Magnesium	7439-95-4		5,000	U	~	÷		~	~		124	5,000	U	100	~
Manganese	7439-96-5	4	15	U	~	~		~	~		-4	15	U	~	~
Mercury	7439-97-6	-	0.2	U	~	~		~	-		-	0.2	U	~	*
Nickel	7440-02-0	+	40	U	~	~		~	~		-	40	U	~	-
Potassium	7440-09-7	-	5,000	U	~	~		~	~			5,000	U	~	~
Selenium	7782-49-2		20	U		(~)		~	~		**	20	U	~	~
Silver	7440-22-4	-	10	U	-			~	~			10	U	rich.	~
Sodium	7440-23-5	988	5,000	JB	~	ī		~	~			5,000	U	~	~
Thallium	7440-28-0		10	U	~	*		~	~		-4	10	U	1~	~
Vanadium	7440-62-2		50	U	~	~		~	~			50	U	~	·~
Zinc	7440-66-6		20	U	~	- 2		~	~		349 T	20	U	~	~

#### Notes:

- --: Not detected
- ~: Sample not analyzed for this parameter
- B: Analyte detected in associated laboratory blank

CASRN: Chemical Abstracts Service Registry Number

Conc: Concentration

J: Estimated concentration

MDL: Method detection limit

N/A: Not applicable

Q: Data Qualifier

U: Not detected

#### Table 5-1. Analytical Results-Trip and Field Blank Samples Former Hester Street Works Manhattan, New York

Sample Location Field Sample ID Date Sample No.		FE 1/	d Blank 311708 17/08 92872	Tr	ip Blank B11708 1/17/08		Field Blank FB13108 1/31/08 895762		Trip I TB13 1/31 895	3108 ./08	I	eld Blank FB21908 2/19/08 899656
Parameter	CASRN	Conc	MDL Q	Conc	MDL C	Con		0 0		MDL Q	Conc	MDL
Volatile Organic Compounds												
Acetone	67-64-1	1-2	5 U	70	5 L	J	5 I	J		5. U	~	~
Benzene	71-43-2	-	1 U	34	1 1		1 1	J		1 U	*	~
Bromodichloromethane	75-27-4	144	1 U	44	1 (			J	-	1 U	~	~
Bromoform	75-25-2	-	5 U	-	5 L	-				5 U	~	~
Bromomethane	74-83-9		.5 U		5 1	-		-		5 U	100	~
2-Butanone	78-93-3	-	5 U		5 L				-	5 U	~	~
Carbon Disulfide	75-15-0	**	5 U	70	5 L			(i) +4	**	5 U	-	-
Carbon Tetrachloride	56-23-5	197	2 U		2 L 5 L	-		-	**	2 U	~	~
Chlorobenzene	108-90-7 75-00-3		5 U	**		-		-	-	5 U	- 14	- 7
Chloroethane Chloroform	67-66-3	44	5 U	144	5 t					5 U	~	
Chloromethane	74-87-3		5 U	-	5 L	-		_		5 U	~	~
Dibromochloromethane	124-48-1	4-	5 U		5 L	_		-	_	5 U	~	~
1.1-Dichloroethane	75-34-3	94	5 U		5 L			-		5 U	~	~
1,2-Dichloroethane	107-06-2		2 U		2 (					2 U	~	~
1.1-Dichloroethene	75-35-4	346	2 U	120	2 1	100		-	42	2 U	~	
cis-1,2-Dichloroethene	156-59-2	-	5 U		5 1	The second		_	2	5 U	~	_
trans-1,2-Dichloroethene	156-60-5	2	5 U	1.	5 L			-		5 U	~	~
1,2-Dichloropropane	78-87-5		1 U	40	1 1			-	_	1 U	~	~
cis-1,3-Dichloropropene	10061-01-5	4-	5 U	- A	5 L			-		5 U	~	~
trans-1,3-Dichloropropene	10061-02-6		5 U		5 L	-		-		5 U	~	~
Ethyl Benzene	100-41-4		4 U		4 U				-	4 U	~	~
2-Hexanone	591-78-6		5 U	34	5 L	1		-	-	5 U	~	~
4-Methyl-2-Pentanone	108-10-1	-	5 U		5 L		5 (	j I		5 U	~	~
Methylene Chloride	75-09-2	4-	3 U		3 L		3 1	J		3 U	~	~
Styrene	100-42-5		5 U		5 L		5 (	]	+	5 U	-	~
1,1,2,2-Tetrachloroethane	79-34-5		1 U	46	1 1		I I	j		1 U	~	~
Tetrachloroethene	127-18-4		1 U	77	1 1		1 1	J	-	1 U	2	~
Toluene	108-88-3	**	5 U		5 L		5 (	J		5 U	~	~
1,1,1-Trichloroethane	71-55-6	45	5 U	1-24	5 L		5 1	J	24	5 U	~	~
1,1,2-Trichloroethane	79-00-5	-	3 U	1-4	3 (	124	3 (	)	4	3 U	~	~
Trichloroethene	79-01-6	44	1 U		1 1	-		-	*	1 U	~	~
Vinyl Chloride	75-01-4		5 U	198	5 L	-		-	+	5 U	i~	~
o-Xylene	95-47-6	-	5 U	7-5	5 L		-		4	5 U	~	*
m/p-Xylenes	126777-61-2	715	5 U	75	5 L	4		-	77	5 U	~	7
Total Xylenes		**	N/A U		N/A L	-		)		N/A U	~	~
Total VOCs			N/A	-	N/A		N/A	+	•	N/A	144	~
Semivolatile Organic Compounds	02.22.0		10. 17			-						10
Acenaphthene	83-32-9		10 U	~	~	-		-	~	~	240	10
Acenaphthylene	208-96-8		10 U	~	(~)	~		-	~	~	-	10
Anthracene	120-12-7	- A-		~	~	~		#	~	~		
Benzo(a)anthracene Benzo(a)pyrene	56-55-3 50-32-8		1 U	~	~	~		+	~	~	1 (24)	1
Benzo(a)pyrene Benzo(b)fluoranthene	205-99-2		1 U	~	~ ~	~		-	~	~	194	1
Benzo(g,h,i)perylene	191-24-2		10 U	~	~	1		+	~	~		10
Benzo(k)fluoranthene	207-08-9		1 U	-	~	1 3		+	~	6	4-	1
bis(2-Chloroethoxy)methane	111-91-1		10 U		~	~		+-	~	~		10
bis(2-Chloroethyl)ether	111-44-4	4-	1 U	~	2	~			~	~	-	1
bis(2-Ethylhexyl)phthalate	117-81-7		10 U	~	~	~		+	~	-		10
4-Bromophenyl-phenylether	101-55-3	**	10 U	~	~	~			~	~		10
Butylbenzylphthalate	85-68-7		10 U	4	~	-			~	~	-	10
Carbazole	86-74-8		10 U	~	×.	~		-	~	~		10
4-Chloro-3-methylphenol	59-50-7	22	10 U	~	~	~			-	~	(44)	10
4-Chloroaniline	106-47-8	-	10 U	~	~	~			×	~	440	10
2-Chloronaphthalene	91-58-7	4	10 U	~	~	~			~	~	4-	10
2-Chlorophenol	95-57-8	-	10 U	~	~	~			~	-	*	10
4-Chlorophenyl-phenylether	7005-72-3	**	10 U	~	~	~	~		~	(m)	(37.)	10
Chrysene	218-01-9	40	10 U	- 4	~	~	~		~	~	**	10
Dibenz(a,h)anthracene	53-70-3		I U	~	-	~			~	-	144	1 1
Dibenzofuran	132-64-9		10 U	~	~	~	·		~	~	1341	10
1,2-Dichlorobenzene	95-50-1	GE II	10 U	~	~	~	~		~	~	-	10
1,3-Dichlorobenzene	541-73-1	64	10 U	~	~	~	~		~	~	+	10
1,4-Dichlorobenzene	106-46-7		10 U	~	~	~			~	~	4	10

Table 5-1. Analytical Results-Trip and Field Blank Samples
Former Hester Street Works
Manhattan, New York

Sample Location		Fie	ld Blank		Tri	p Blank		Fiel	ld Blank		Tri	p Blank		Fie	ld Blank	- 11
Field Sample ID		FI	311708		TI	311708		FE	313108		T	B13108		FF	321908	
Date		1	/17/08		1	/17/08		1	/31/08		1	/31/08		2.	/19/08	
Sample No.		8	92872	- 1	8	92871		89	95762	į.	8	95761		89	99656	
Parameter	CASRN	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q
Semivolatile Organic Compound	ds (continued)															
3,3-Dichlorobenzidine	91-94-1	1-6-	20	U	~	~		~	~		2	~			21	U
2,4-Dichlorophenol	120-83-2	44	10	U	2	~		2	-		8	*		24	10	U
Diethylphthalate	84-66-2	44	10	U	~	·~		~	~	17	3	~		+	10	U
2,4-Dimethylphenol	105-67-9	+	10	U	~	~		~	~		~	~			10	U
Dimethylphthalate	131-11-3		10	U	~	~		~	~		*	h~		-	10	U
Di-n-butylphthalate	84-74-2	-	10	U	~	100		~	~		~	~		-	10	U
4,6-Dinitro-2-methylphenol	534-52-1	3-4	31	U	~	~		- 9	~		*	, air.			31	U
2,4-Dinitrophenol	51-28-5	-	31	U	~	×		~	~		7	~		- 64	31	U
2,4-Dinitrotoluene	121-14-2	22	2	U	-	-		~	-		1	-			2.1	U
2,6-Dinitrotoluene	606-20-2		2	U	~	~		~	0		7	~		46	2.1	U
Di-n-octyl phthalate	117-84-0		10	U	~	~		~	in.		7	~			10	U
Fluoranthene	206-44-0		10	U	~	~		~	~		-	~			10	U
Fluorene	86-73-7	>	10	U	~	~		-	-		1	-		**	10	U
Hexachlorobenzene	118-74-1	Per .	1.	U	~	~		~	~		*	~			1	U
Hexachlorobutadiene	87-68-3	44	2	U	~	~		~	~		~	~		) <del></del> (	2.1	U
Hexachlorocyclopentadiene	77-47-4	25	10	U	7	100		7	-		7	100		- 24	10	U
Hexachloroethane	67-72-1	Sec	1	U	~	~		~	~		~	~			1	U
Indeno(1,2,3-cd)pyrene	193-39-5	4-	1	U	101	~		~	·		~	~		+4	1	U
Isophorone	78-59-1		10	U	~	~		~	~		~	~		+	10	U
2-Methylnaphthalene	91-57-6	6-7	10	U	~	~		~	-		~	~			10	U
2-Methylphenol	95-48-7	**	10	U	~			~	~		~	~		1.4	10	U
3+4-Methylphenols	106-44-5	-	10	U	~	~		~	*		~	,		4-	10	U
Naphthalene	91-20-3	1-4	10	U	-	×		~	)×		~	~		-20	10	U
2-Nitroaniline	88-74-4	44	20	U	~	~		~	~		~	~		4-2	21	U
3-Nitroaniline	99-09-2	- 64	20	U	~	~		~	~		~	~		446	21	U
4-Nitroaniline	100-01-6		20	U	~	~		~	~		~	~		- 140-	21	U
Nitrobenzene	98-95-3	777	1	U	~	~		~	~		~	~		140	1	U
2-Nitrophenol	88-75-5	194	10	U	~	~		~	~		*	~			10	U
4-Nitrophenol	100-02-7		31	U	~	~		~	~		~	(60)		- <del></del> -	31	U
N-Nitroso-di-n-propylamine	621-64-7	1-2	1	U	~	~		~	~		~	~		92	1	U
N-Nitrosodiphenylamine	86-30-6		10	U	~	~		120	~		~	<b>~</b>			10	U
2,2-oxybis(1-Chloropropane)	108-60-1	-	10	U	~	~		~	~		~	~		+	10	U
Pentachlorophenol	87-86-5		31	U	~	~		~	~		~	-		-	31	U
Phenanthrene	85-01-8	175	10	U	~	~			~		*	- >-		75	10	U
Phenol	108-95-2	- H	10	U	~	~		*	-		2			- 44	10	U
Pyrene	129-00-0	4-	10	U	~	~		~	*		2	~		124	10	U
1,2,4-Trichlorobenzene	120-82-1	4.	1	U	~	~		7	~		1	~		-	1	U
2,4,5-Trichlorophenol	95-95-4	şi.	10	U	~	~		~	~		1	~		*	10	U
2,4,6-Trichlorophenol	88-06-2		10	U	~	~		-	-		3	~		12	10	U

Table 5-1. Analytical Results-Trip and Field Blank Samples Former Hester Street Works Manhattan, New York

Sample Location Field Sample ID Date Sample No.	2.00	F 1 8	ld Blank B11708 /17/08 92872		TI 1 8:	p Blank 311708 /17/08 92871		FI 1. 89	ld Blank 313108 /31/08 95762		1 1 8	ip Blank B13108 /31/08 95761		FE 2/	ld Blank 321908 /19/08 99656	
Parameter	CASRN	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q	Conc	MDL	Q
Inorganics																
Aluminum	7429-90-5		62.6	U	~	~		~	~		100	~		-	~	
Antimony	7440-36-0		5.8	U	-	~		~	~		~	~		~	~	
Arsenic	7440-38-2	-	3.2	U		~		100	~		~	~		7	~	
Barium	7440-39-3	5++	1.7	U	745	~		·	~		~	>		~	~	
Beryllium	7440-41-7	70	0.3	U	~	~		~	~		~	~		~	~	
Cadmium	7440-43-9		0.4	U	~	~		~	~		~	~		~-	~	
Calcium	7440-70-2	+-	42.5	U	~	~		~	~		~	~		~	~	
Chromium	7440-47-3	-	1.6	U	~	~		~	-		-	~		~	~	
Cobalt	7440-48-4		1.7	U	~	~		~	~		*	~		~	~	
Соррег	7440-50-8	122	3.7	U	~	~		~	~		~	~		~		
Cyanide	N/A	-	0.1	U	~	~		~	~		~	~		~	~	
Iron	7439-89-6	-	39.2	U	~	~		~	-		~	~		~	~	
Lead	7439-92-1	+	2.7	U	~	-		~	~		-	~		~	-	
Magnesium	7439-95-4	175	41.6	U	~	>~		~	~		~	~		~	~	
Manganese	7439-96-5		1.2	U	~	~		~	~		~	-		~	-	
Mercury	7439-97-6	192	0.1	U	~	~		~	~		~	~		-4	~	
Nickel	7440-02-0	142	2.4	U	~	-		-	~		~	~		~	~	
Potassium	7440-09-7		315.0	U	~	-		~	~		-	~		-	~	
Selenium	7782-49-2	-	4.2	U	-	100		~	~		~	-		~	~	
Silver	7440-22-4	-	1.4	U	~	~		~	~		~	~		~	~	
Sodium	7440-23-5		396.0	U	~	~		~	~		~	~		~	~	
Thallium	7440-28-0		5.6	В	~	×-		~	~		·	-		~	~	
Vanadium	7440-62-2		3.0	U	~	~		~	~		÷.	4		(46-4	~	
Zinc	7440-66-6		7.0	В	~	~		~	~		~	~		~	~	

#### Notes:

- --: Not detected
- ~: Sample not analyzed for this parameter
- B: Analyte detected in associated laboratory blank

CASRN: Chemical Abstracts Service Registry Number

Conc: Concentration

J: Estimated concentration

MDL: Method detection limit

N/A: Not applicable

Q: Data Qualifier

U: Not detected

Sample Location			SB-01		S	B-01		
Field Sample ID		5	SB-01		DI	JP-01		
Date		11	/16/06		11/	16/06		
Sample No.		X5	546-01		X55	646-02		
Matrix			soil		10.00	soil		
Parameter	CASRN	Conc	MDL	Q	Conc	MDL	Q	RPD
Volatile Organic Compounds								
Acetone	67-64-1	4	0.14	U		0.14	U	4.
Benzene	71-43-2	19	0.029	U	-	0.028	U	
Bromodichloromethane	75-27-4	6.	0.029	U	-	0.028	U	1 de
Bromoform	75-25-2	3	0.029	U	-	0.028	U	-
Bromomethane	74-83-9	»÷	0.029	U	-	0.028	U	1+
2-Butanone	78-93-3	-	0.14	U	-	0.14	U	-
Carbon Disulfide	75-15-0	100	0.029	U	-	0.028	U	
Carbon Tetrachloride	56-23-5	-	0.029	U	2-	0.028	U	1.0
Chlorobenzene	108-90-7		0.029	U	-	0.028	U	4
Chloroethane	75-00-3	12.	0.029	U	2	0.028	U	82
Chloroform	67-66-3	Ŧ	0.029	U		0.028	u	13
Chloromethane	74-87-3	4	0.029	U	è	0.028	U	- 2
Dibromochloromethane	124-48-1	+	0.029	U		0.028	U	1.
1,2-Dichloroethane	107-06-2		0.029	U	2	0.028	U	
1,1-Dichloroethane	75-34-3	÷	0.029	U	9	0.028	U	
1,1-Dichloroethene	75-35-4	41	0.029	U	-	0.028	U	19
cis-1,2-Dichloroethene	156-59-2	-	0.029	U	4	0.028	U	1.
trans-1,2-Dichloroethene	156-60-5	14	0.029	U	-	0.028	Ü	0.0
1,2-Dichloropropane	78-87-5		0.029	U	-	0.028	U	-
cis-1,3-Dichloropropene	10061-01-5	4	0.029	U	-	0.028	U	4
trans-1,3-Dichloropropene	10061-02-6	4	0.029	U	-	0.028	U	
Ethyl Benzene	100-41-4	PS.	0.029	U	-	0.028	U	1
2-Hexanone	591-78-6	12	0.14	U	-	0.14	U	(4)
Methylene Chloride	75-09-2	0.041	0.029	В	0.025	0.028	J	48.5%
4-Methyl-2-Pentanone	108-10-1	-	0.14	U	-	0.14	U	120
Styrene	100-42-5	re .	0.029	U		0.028	U	
1,1,1-Trichloroethane	71-55-6	4.0	0.029	U	-	0.028	U	-
1,1,2-Trichloroethane	79-00-5		0.029	Ü	-	0.028	U	1.79
Trichloroethene	79-01-6	4	0.029	U	+	0.028	U	
1,1,2,2-Tetrachloroethane	79-34-5	(2)	0.029		5	0.028		-
Tetrachloroethene	127-18-4	-	0.029		-	0.028	U	i-
Toluene	108-88-3	-	0.029	U	-	0.028	U	
Vinyl Chloride	75-01-4	-8	0.029		1	0,028		
m/p-Xylenes	126777-61-2		0.029		2.1	0.028		4
o-Xylene	95-47-6		0.029	U	-	0.028	U	-

### Table 5-2. Duplicate Soil Sample Analytical Results Site Characterization Study Hester Street Former Manufactured Gas Plant

Manhattan, New York

Sample Location				H 3	SB-01		
Field Sample ID			SB-01	119	DUP-01		
Date		1	1/16/06	1:	1/16/06		
Sample No.		X	5546-01	X!	5546-02		
Matrix			soil		soil		
Parameter	CASRN	Conc	MDL C	Conc	MDL	Q	RPD
Semivolatile Organic Compou	nds					_	
Acenaphthylene	208-96-8	1	1.9 L	0.4	0.36	U	
Acenaphthene	83-32-9	-	1.9 L	13	0.36	U	
Anthracene	120-12-7	4	1.9 L	0 -	0.36	U	
Benzo(a)anthracene	56-55-3	4	1.9 (		0.36	U	-
Benzo(b)fluoranthene	205-99-2	+	1.9 (	0-	0.36	U	
Benzo(k)fluoranthene	207-08-9	-	1,9 L	-	0.36	U	3
Benzo(g,h,i)perylene	191-24-2	-	1.9 L	C.S.	0,36	U	- 2
Benzo(a)pyrene	50-32-8	4	1.9 L	12	0.36	U	
bis(2-Chloroethyl)ether	111-44-4		1,9 0		0.36	U	
bis(2-Chloroethoxy)methane	111-91-1	-	1,9 (		0.36	U	-
bis(2-Ethylhexyl)phthalate	117-81-7	-	1.9 (				
4-Bromophenyl-phenylether	101-55-3	-	1.9 (		0.36		5.
Butylbenzylphthalate	85-68-7	-	1.9 (		0.36	U	
Carbazole	86-74-8	-	1.9 U		0.36		
4-Chloroaniline	106-47-8	-	1.9 (		0.36		ŧ
Chrysene	218-01-9		1.9 (		0.36		
4-Chloro-3-methylphenol	59-50-7	-	1.9 L		0.36		4
2-Chloronaphthalene	91-58-7	-	1.9 U		0.36		- 0
4-Chlorophenyl-phenylether	7005-72-3	-	1.9 U		0.36		
2-Chlorophenol	95-57-8		1,9 0		0.36		4
Di-n-octyl phthalate	117-84-0	100	1.9 L		0.36		ı G
Dibenzofuran	132-64-9	1,2	1.9 U		0.36		-
Dibenz(a,h)anthracene	53-70-3	-2	1.9 U		0.36		
Di-n-butylphthalate	84-74-2	10.7	1.9 (		0.36		
1,4-Dichlorobenzene	106-46-7	100	1.9 U		0.36		
2,4-Dichlorophenol	120-83-2	1	1.9 U		0.36		
1.3-Dichlorobenzene	541-73-1		1.9 U		0.36		
3,3-Dichlorobenzidine	91-94-1	2	1.9 U		0.36		
1,2-Dichlorobenzene	95-50-1	100	1.9 0		0.36		1 4
Diethylphthalate	84-66-2	2.	1.9 U		0.36		
2,4-Dimethylphenol	105-67-9	194	1.9 0		0.36		
Dimethylphthalate	131-11-3		1.9 U		0.36		
2,4-Dinitrotoluene	121-14-2		1.9 U		0.36		i e
4,6-Dinitro-2-methylphenol	534-52-1	2	4.9 U		0.92		2
2,4-Dinitrophenol	51-28-5	-	4.9 U		0.92		14
2,6-Dinitrotoluene	606-20-2		1.9 U		0.36		- 4
Fluoranthene	206-44-0	1	1.9 0		0.36		
Fluorene	86-73-7		1.9 U		0.36		2
Hexachlorobenzene	118-74-1	2	1.9 U		0.36		
Hexachloroethane	67-72-1	101	1.9 0		0.36		2
Hexachlorocyclopentadiene	77-47-4		1.9 U		0.36		
Hexachlorobutadiene	87-68-3	12	1.9 0		0.36		
Indeno(1,2,3-cd)pyrene	193-39-5	100	1.9 U		0.36		
Isophorone	78-59-1		1.9 U		0.36		
2-Methylnaphthalene	91-57-6	0.35		1	0.36		14

### Table 5-2. Duplicate Soil Sample Analytical Results Site Characterization Study Hester Street Former Manufactured Gas Plant

#### Hester Street Former Manufactured Gas Plant Manhattan, New York

Field Sample ID						
Tota barripio ib		S	B-01	D	UP-01	
Date		11,	16/06	11	/16/06	
Sample No.		X5.	546-01	X5	546-02	
Matrix			soil		soil	
Parameter	CASRN	Conc	MDL	Q Conc	MDL (	RPD
Semi-Volatile Organic Compo	unds (continued	1)				
3+4-Methylphenols	106-44-5		1.9	JI.	0.36 (	1 -
2-Methylphenol	95-48-7		1.9		0.36 (	
Naphthalene	91-20-3	4	1.9	J L	0.36 (	] .
4-Nitroaniline	100-01-6	16.2	4.9	J -	0.92 (	
2-Nitroaniline	88-74-4		4.9 1		0.92 (	
3-Nitroaniline	99-09-2	100	4.9		0.92 (	
Nitrobenzene	98-95-3		1.9	777	0.36 (	
4-Nitrophenol	100-02-7	-2	4.9 1		0.92 L	
2-Nitrophenol	88-75-5	riber:	1.9		0.36 L	
N-Nitrosodiphenylamine	86-30-6		1.9		0.36 L	
N-Nitroso-di-n-propylamine	621-64-7	4	1.9		0.36 L	
2,2-oxybis(1-Chloropropane)	108-60-1	2	1.9		0.36 L	
Pentachlorophenol	87-86-5		4.9		0.92 L	
Phenol	108-95-2	100	1.9		0.36 L	
Phenanthrene	85-01-8		1.9		0.36 L	
Pyrene	129-00-0		1.9			
1,2,4-Trichlorobenzene	120-82-1		1.9		0.36 1	
2,4,6-Trichlorophenol	88-06-2		1.9		0.36 L	
2,4,5-Trichlorophenol	95-95-4		4.9 1	21	0.92 L	
Inorganics	33 33 4		4.5		0.52	, , , , ,
Aluminum	7429-90-5	11800	23.6	5280	22.2	76.39
Antimony	7440-36-0		7.09 (	1 123.55	6.66 L	
Arsenic	7440-38-2	3.94	1.18	1.78		75.59
Barium	7440-39-3	72		38.9		59.79
Beryllium	7440-41-7	0.536				
Cadmium	7440-43-9	0.000	0.591	1 212.22	0.555 L	
Calcium	7440-70-2	1770	591	2870		47.49
Chromium	7440-47-3	18.3	1.18	19.2		4.8%
Cobalt	7440-48-4	7.58	5.91	4.1		3,000
Copper	7440-50-8	13.3		13.5		1.5%
ron	7439-89-6	16600		8900		60.49
Lead	7439-99-0	24.1		16.6		36.99
Magnesium	7439-95-4	2590	591	1950		28.29
Manganese	7439-95-4	640	1.77	314		68.39
Mercury	7439-96-5	0.072	0.012	314	0.011 L	
Nickel	7440-02-0	17.9	4.73	15		17.69
Potassium	7440-02-0	961	591	778		21.09
Selenium	7782-49-2	0.513			2.22 L	
Silver		0.513				
	7440-22-4	050	1.18		1.11 (	
Sodium	7440-23-5	259		100000		
Thallium	7440-28-0	2.12				
Vanadium Zana	7440-62-2	23.8		15.3		43.59
Zinc	7440-66-6 CN	41.8 1.47	2.36 0.591	24.8 1.92		51.19 26.59

Sample Locati	ion		MW-	01		MW-	01	
Field Sample ID			MW-	01		DUP13	3108	
Sample Date			1/31	/08		1/31	/08	
Sample No.			895	763	4	8957	767	
Matrix			wat	er		wat	er	
Parameters		CASRN	Conc	Q	MDL	Conc	Q	MD
Volatile Organi	c Compounds							
	Acetone	67-64-1	ND	U	5	ND	U	
	Bromodichloromethane	75-27-4	0.3	J	1	0.3	)	1
	Bromoform	75-25-2	ND	U	4	ND	U	1.5
	Bromomethane	74-83-9	ND	U	5	ND	U	
	2-Butanone	78-93-3	ND	U	5	ND	U	+7
	Carbon Disulfide	75-15-0	ND	U	5	ND	U	
	Carbon Tetrachloride	56-23-5	ND	U	2	ND	U	- 1
	Chlorobenzene	108-90-7	ND	U	5	ND	U	
	Chloroethane	75-00-3	ND	U	5	ND	U	16
	Chloroform	67-66-3	10		5	10		- 1
	Chloromethane	74-87-3	ND	U	5	ND	U	
	Dibromochloromethane	124-48-1	ND	U	5	ND	U	1.0
	1,1-Dichloroethane	75-34-3	ND	U	5	ND	U	713
	1,2-Dichloroethane	107-06-2	ND	U	2	ND	U	
	1,1-Dichloroethene	75-35-4	ND	U	2	ND	U	- 1
	cis-1,2-Dichloroethene	156-59-2	0.5	J	5	0.5	1	
	trans-1,2-Dichloroethene	156-60-5	ND	U	5	ND	U	
	Total 1,2-Dichloroethene	N/A	0.5	1	5	0.5	J	
	1,2-Dichloropropane	78-87-5	ND	U	1	ND	U	
	cis-1,3-Dichloropropene	10061-01-5	ND	U	5	ND	U	
	trans-1,3-Dichloropropene	10061-02-6	ND	U	5	ND	U	16
	2-Hexanone	591-78-6	ND	U	5	ND	U	
	4-Methyl-2-Pentanone	108-10-1	ND	U	5	ND	U	- 6
	Methylene Chloride	75-09-2	ND	U	3	ND	U	
	Styrene	100-42-5	ND	U	5	ND	U	
	1,1,2,2-Tetrachloroethane	79-34-5	ND	U	1	ND	U	
	Tetrachloroethene	127-18-4	5.4		1	5.2		
	1,1,1-Trichloroethane	71-55-6	ND	U	5	ND	U	
	1,1,2-Trichloroethane	79-00-5	ND	U	3	ND	U	
	Trichloroethene	79-01-6	0.8		1	0.7		
	Vinyl Chloride	75-01-4	ND		5	ND	-	
	Benzene	71-43-2	ND		1	ND		-
	Toluene	108-88-3	0.3	1	5	0.4	J	19
	Ethyl Benzene	100-41-4	ND		4	ND		p
		126777-61-2		~	-	-		
	o-Xylene	95-47-6	~	~	~		~	- 0
	Xylene (Total)	1330-20-7	ND	U	5	ND	U	10
	Total BTEX	N/A		U N/A			U N	
	Total Target VOCs	N/A		J N/A		17.1		
	VOC TICs	N/A		U N/A			U N	
	Total VOCs	N/A		J N/A		17.1		

Sample Locati	on		MW	-01		MW	01	
Field Sample ID			MW	-01		DUP1	3108	
Sample Date			1/31	/08		1/31	/08	
Sample No.			895	763		895	767	
Matrix			wat	ter		wat	er	
Parameters		CASRN	Conc	Q	MDL	Conc	Q	MDL
Semivolatile Org	ganic Compounds				- 117			
	bis(2-Chloroethyl)ether	111-44-4	ND	U	1	ND	U	1
	bis(2-Chloroethoxy)methal	111-91-1	ND	Ü	10	ND	U	10
	2,2-oxybis(1-Chloropropar	108-60-1	ND	U	10	ND	U	10
	bis(2-Ethylhexyl)phthalate	117-81-7	ND	U	10	ND	U	10
	4-Bromophenyl-phenyleth	101-55-3	ND	U	10	ND	U	10
	Butylbenzylphthalate	85-68-7	ND	U	10	ND	U	10
	Carbazole	86-74-8	ND	U	10	ND	U	10
	4-Chloroaniline	1.06-47-8	ND	U	10	ND	U	10
	2-Chloronaphthalene	91-58-7	ND	U	10	ND	U	10
	4-Chlorophenyl-phenylethe	7005-72-3	ND	U	10	ND	U	10
	Dibenzofuran	132-64-9	ND		10	ND		10
	Di-n-butylphthalate	84-74-2	ND	U	10	ND		10
	1,2-Dichlorobenzene	95-50-1	ND		10	ND	U	10
	1,3-Dichlorobenzene	541-73-1	ND		10	ND		10
	1,4-Dichlorobenzene	106-46-7	ND		10	ND		10
	3,3'-Dichlorobenzidine	91-94-1	ND		20	ND	77.	20
	Diethylphthalate	84-66-2	ND		10	ND		10
	Dimethylphthalate	131-11-3	ND		10	ND		10
	2,4-Dinitrotoluene	121-14-2	ND	_	2	ND	_	- 2
	2,6-Dinitrotoluene	606-20-2	ND		2	ND		2
	Di-n-octylphthalate	117-84-0	ND		10	ND	-	10
	Hexachlorobenzene	118-74-1	ND	_	1	ND		1
	Hexachlorobutadiene	87-68-3	ND		2	ND		2
	Hexachlorocyclopentadien	77-47-4	ND		10	ND		10
	Hexachloroethane	67-72-1	ND		1	ND		+
	Isophorone	78-59-1	ND		10	ND		10
	2-Nitroaniline	88-74-4	ND		20	ND		20
	3-Nitroaniline	99-09-2	ND		20	ND		20
	4-Nitroaniline	100-01-6	ND		20	ND		20
	Nitrobenzene	98-95-3	ND		1	ND		1
	N-Nitroso-di-n-propylamine	621-64-7	ND		1	ND		1
	N-Nitrosodiphenylamine	86-30-6	ND		10	ND		10
	1,2,4-Trichlorobenzene	120-82-1	ND		1	ND		1
	Phenolic Compounds	120 02 1	(ID	0		110	0	
	2-Chlorophenol	95-57-8	ND	TT.	10	ND	Tr	10
	2,4-Dichlorophenol	120-83-2	ND		10	ND	-	10
	2,4-Dimethylphenol	105-67-9	ND		10	ND		10
	2,4-Dinitrophenol	51-28-5	ND		31	ND		31
	2-Methylphenol	95-48-7	ND	-	10	ND	-	10
	4,6-Dinitro-2-methylphenc	534-52-1	ND		31	ND		31
	4-Chloro-3-methylphenol	59-50-7	ND	-	10	ND		10
	4-Methylphenol	106-44-5	ND	-	10	ND		
	3+4-Methylphenols	N/A		~	~		~	10

Sample Locati	on			MW	-01			MW	-01	
Field Sample ID				MW	-01		D	JP1	3108	
Sample Date				1/31	/08		1	/31	1/08	
Sample No.				895	763			395	767	
Matrix				war	ter			wa	ter	
Parameters		CASRN		Conc	Q	MDL	C	onc	Q	MDI
Semi-Volatile O	rganic Compounds (continued)									
	2-Nitrophenol	88-75-5		ND	U	10		ND	U	10
	4-Nitrophenol	100-02-7		ND	U	31		ND	U	31
	Pentachlorophenol	87-86-5		ND	U	31		ND	U	31
	2,4,5-Trichlorophenol	95-95-4		ND	U	10	1	ND	U	10
	2,4,6-Trichlorophenol	88-06-2		ND	U	10	7	ND	U	10
	Phenol	108-95-2		2	J	10		1.8	J	10
	Total Phenolic Compounds PAHs	N/A		2	U N/A	1		1.8	U N/	A
	Acenaphthene	83-32-9		ND	U	10		ND	U	10
	Acenaphthylene	208-96-8		ND	U	10		ND	U	10
	Anthracene	120-12-7		ND	U	10		ND	U	10
	Benzo(a)anthracene	56-55-3		ND	U	1		ND	U	1
	Benzo(a)pyrene	50-32-8		ND	U	1		ND	U	1
	Benzo(b)fluoranthene	205-99-2		ND	U	1		ND	U	1
	Benzo(g,h,i)perylene	191-24-2		ND	U	10		ND	U	10
	Benzo(k)fluoranthene	207-08-9		ND	U	1		ND	U	1
	Chrysene	218-01-9		ND	U	10		ND	U	10
	Dibenzo(a,h)anthracene	53-70-3		ND	U	1		ND	U	1
	Fluoranthene	206-44-0		ND	U	10		ND	U	10
	Fluorene	86-73-7		ND	U	10		ND	U	10
	Indeno(1,2,3-cd)pyrene	193-39-5		ND	U	1		ND	U	1
	2-Methylnaphthalene	91-57-6		ND	U	10		ND	U	10
	Naphthalene	91-20-3		ND	U	10		ND	U	10
	Phenanthrene	85-01-8		ND	U	10		ND	U	10
	Pyrene	129-00-0		ND	U	10		ND	U	10
	Total PAHs	N/A	ND		U N/A	4	ND		U N/	A
	Total Target SVOCs	N/A		2	J N/A	4		1.8	J N/	Ą
	Total SVOC TICs	N/A		ND	U N/A	<b>\</b>		ND	U N/	A
	Total SVOCs	N/A		2	J N/A	4		1.8	J N/	A

Sample Locat	ion		MW-01			MW-01 DUP13108 1/31/08 895767		
Field Sample ID	6		/-01					
Sample Date			1/31/08 895763					
Sample No.								
Matrix			water			water		
Parameters		CASRN	Conc	Q	MDL	Conc	Q	MDI
Inorganics		3.0			791	400		
	Aluminum	7429-90-5	64700		62.6	15700		62.6
	Antimony	7440-36-0	ND	U	5.8	ND	U	5.8
	Arsenic	7440-38-2	19.4		3.2	3.2	В	3.3
	Barium	7440-39-3	1860		1.7	444	T	1.
	Beryllium	7440-41-7	6.5		0.3	1.2		0.3
	Cadmium	7440-43-9	ND	U	0.4	ND	U	0.4
	Calcium	7440-70-2	42200		42.5	29800		42.5
	Chromium	7440-47-3	129		1.6	31.9		1.
	Cobalt	7440-48-4	74.2		1.7	14.2	В	1.
	Copper	7440-50-8	280		3.7	44.1		3.
	Iron	7439-89-6	95800		39.2	20100		39.
	Manganese	7439-96-5	8760		1.2	1540		1.
	Iron and Manganese	N/A	104560		N/A	21640		N/
	Lead	7439-92-1	118		2.7	18.7		2.
	Magnesium	7439-95-4	40500		41.6	15300		41.
	Mercury	7439-97-6	0.2	J	0.1	ND	U	0.
	Nickel	7440-02-0	339		2.4	60		2.4
	Potassium	7440-09-7	29200		315	15200		31
	Selenium	7782-49-2	ND	U	4.2	ND	U	4.3
	Silver	7440-22-4	14.6		1.4	5.5	В	1.4
	Sodium	7440-23-5	62100		396	63700		396
	Thallium	7440-28-0	ND	U	4.7	ND	U	4.
	Vanadium	7440-62-2	153	-	3	34.1	В	
	Zinc	7440-66-6	345		5.8	68.2		5.
	Cyanide	N/A	ND	U	10	ND	U	0.0
	Cyanide-Amenable	N/A	-	~	~	~	~	1





APPROXIMATE SITE LOCATION OUTLINED ON THE USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES: JERSEY CITY, N.J.-N.Y (photorevised 1981) AND BROOKLYN, N.Y. (photorevised 1979).

# NORTH

### HESTER STREET FORMER MANUFACTURED GAS PLANT SITE

MANHATTAN, NY

N:\project\2006\0600998\01\SCR\SCR Figures\Figure 1-1 Site Location.doc

### FIGURE 1-1. SITE LOCATION MAP

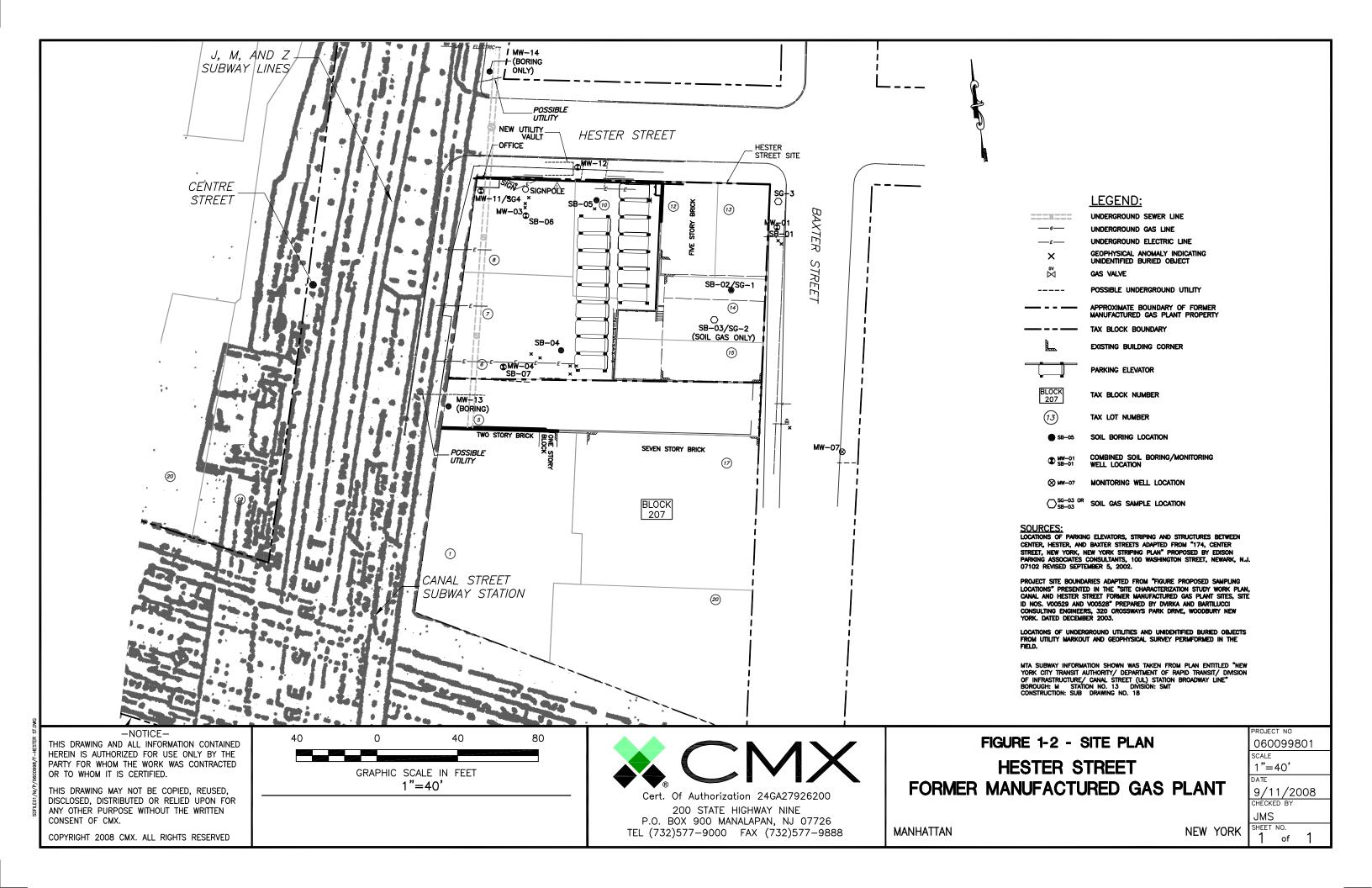


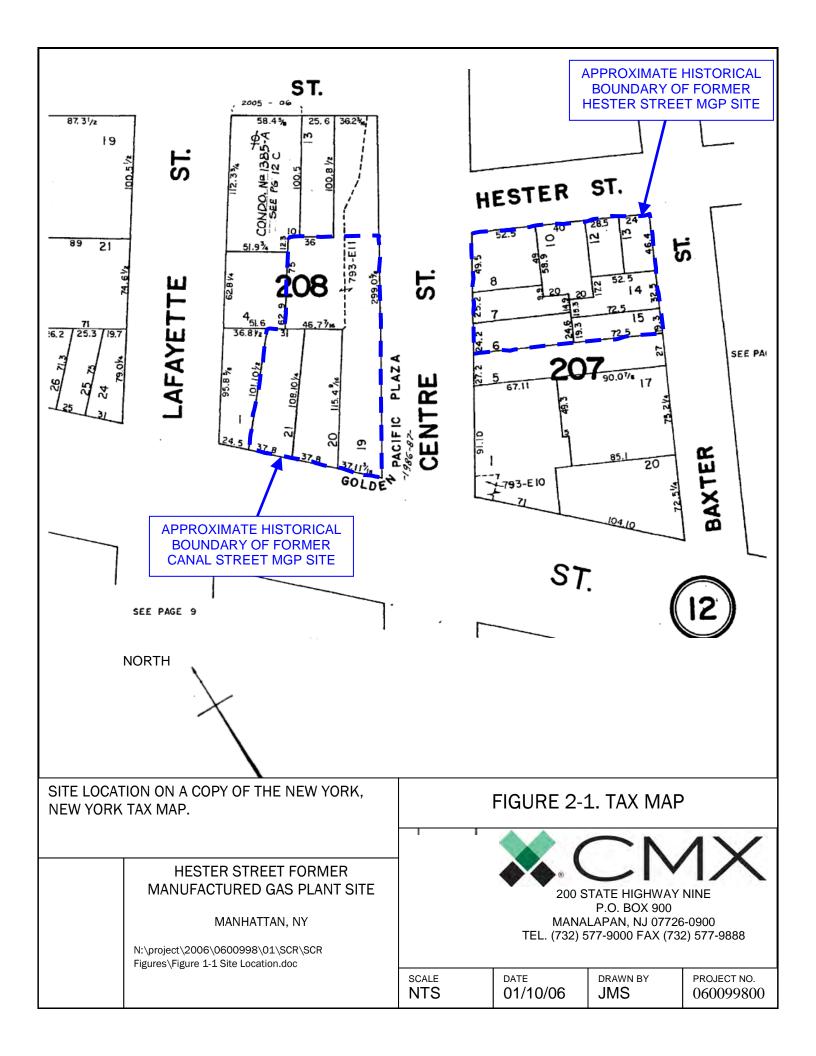
200 STATE HIGHWAY NINE P.O. BOX 900 MANALAPAN, NJ 07726-0900 TEL. (732) 577-9000 FAX (732) 577-9888

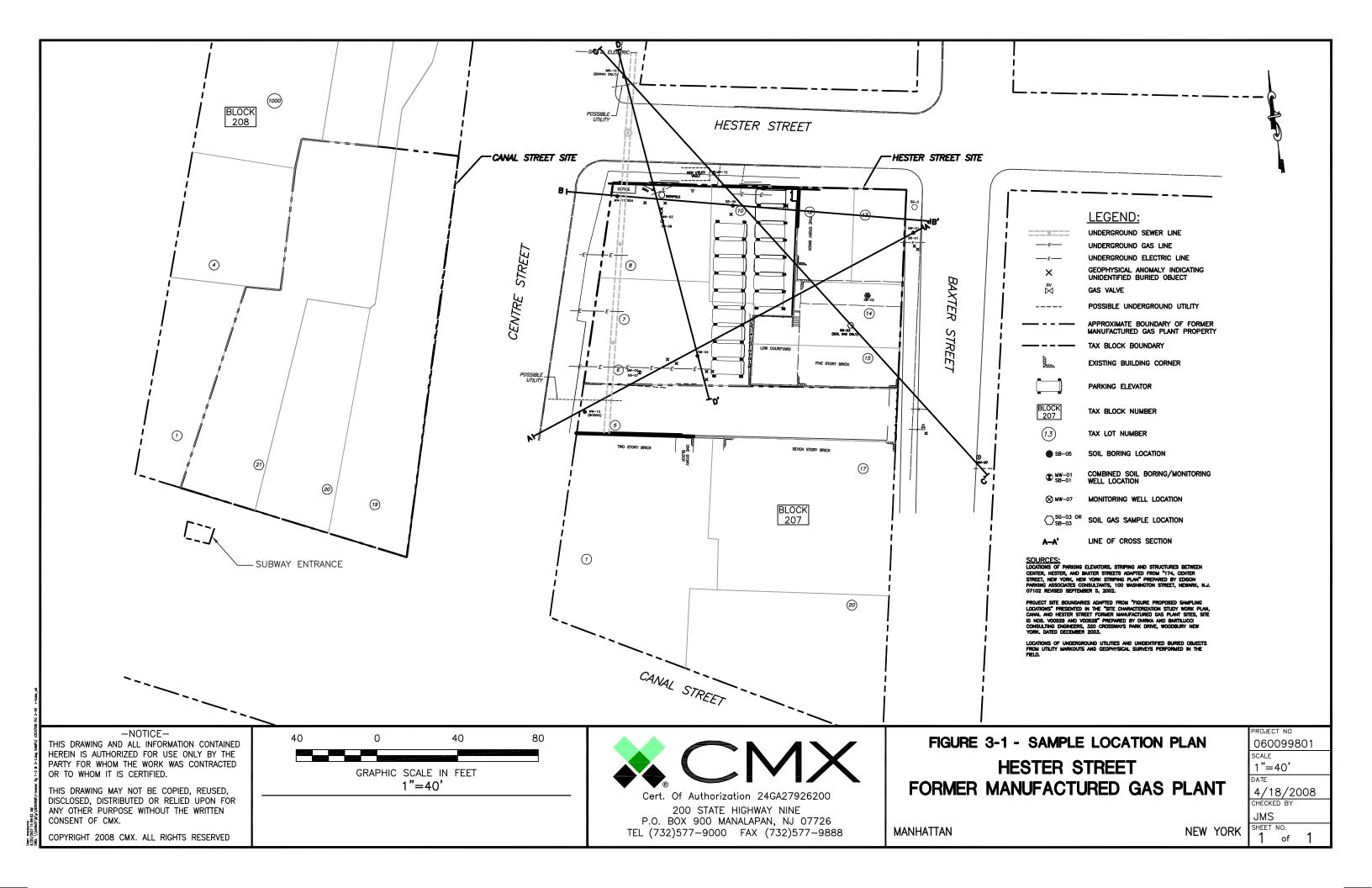
SCALE 1" ~ 2000' DATE 01/10/06

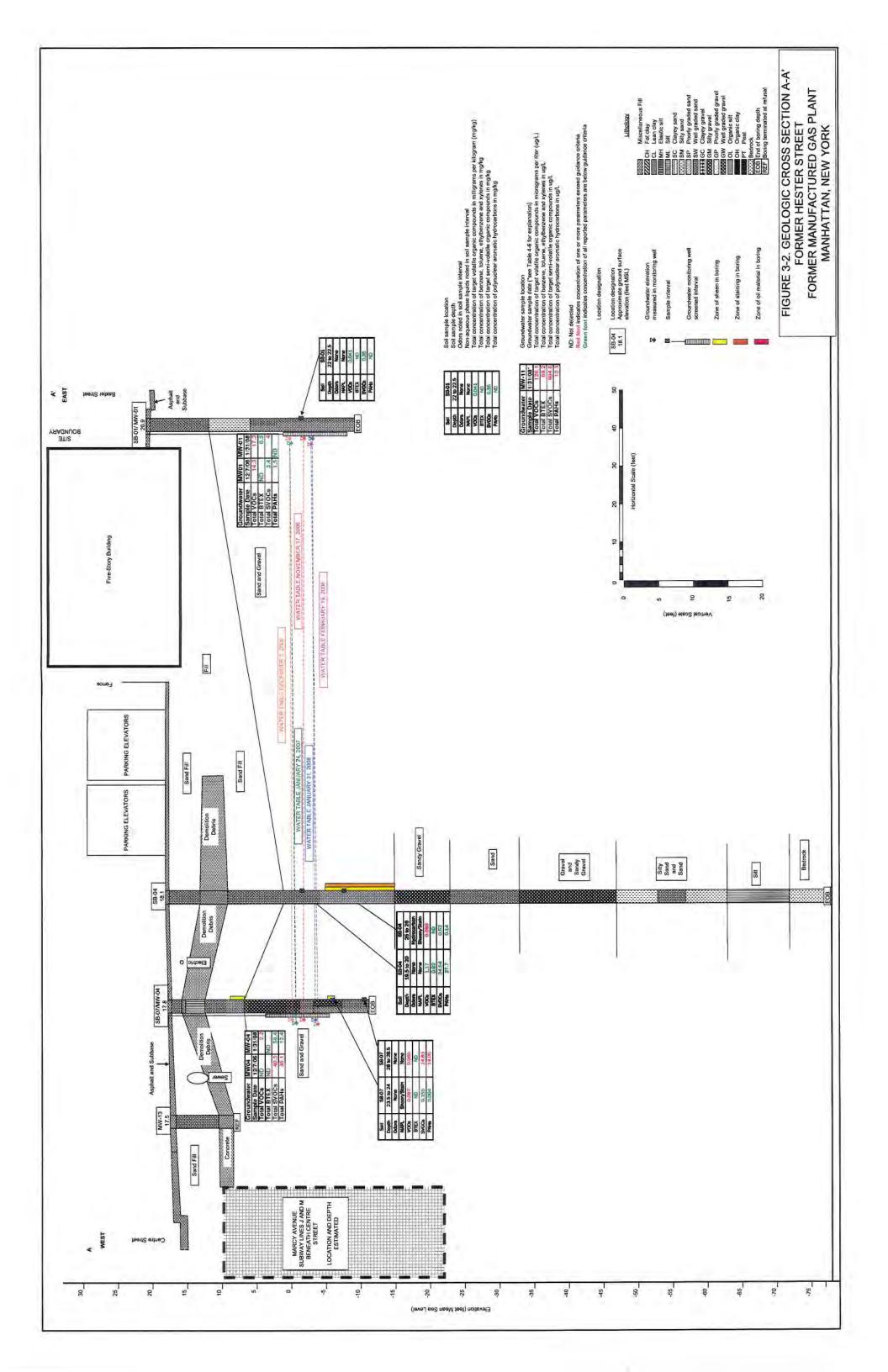
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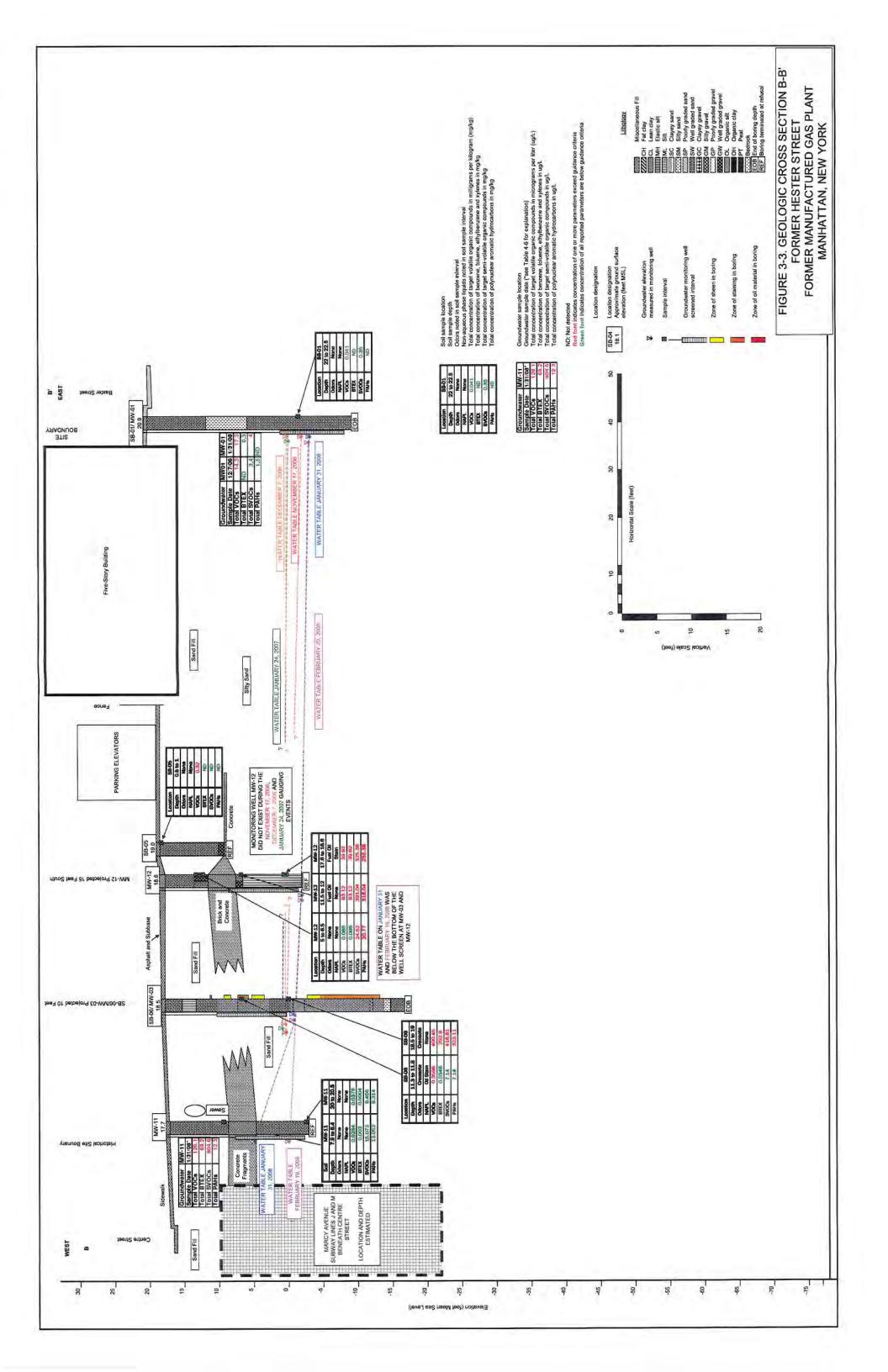
PROJECT NO. 060099800

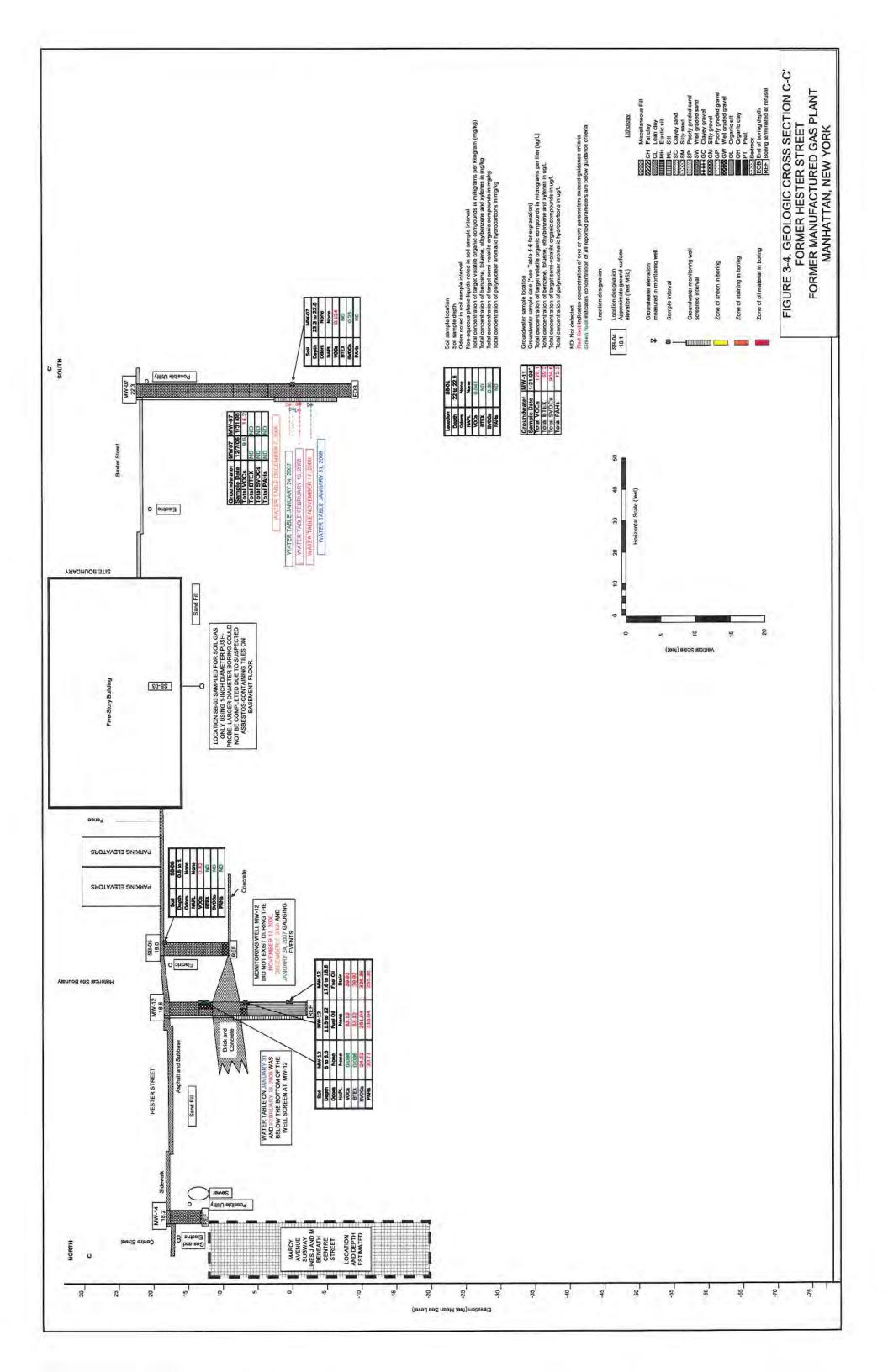


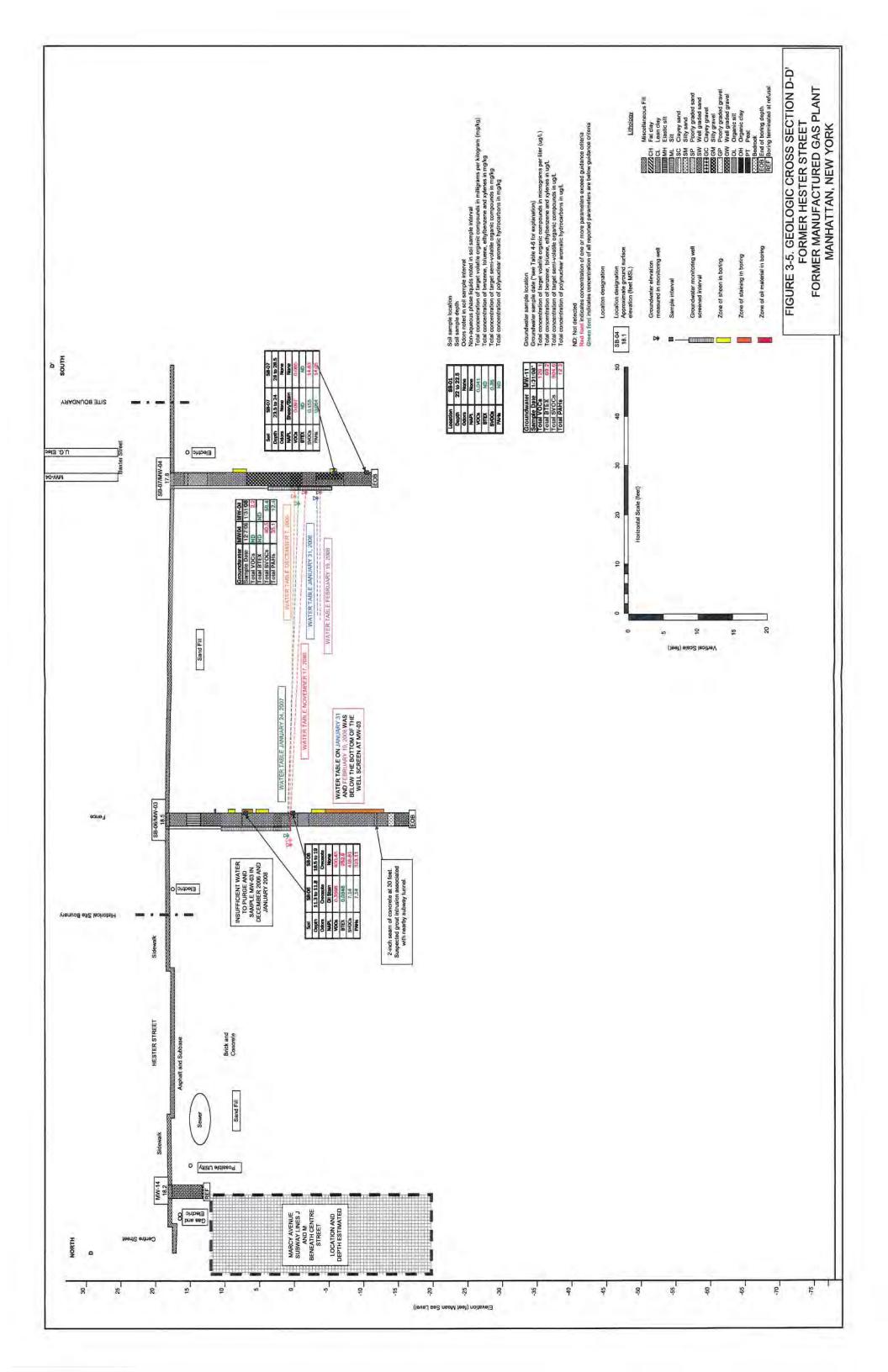


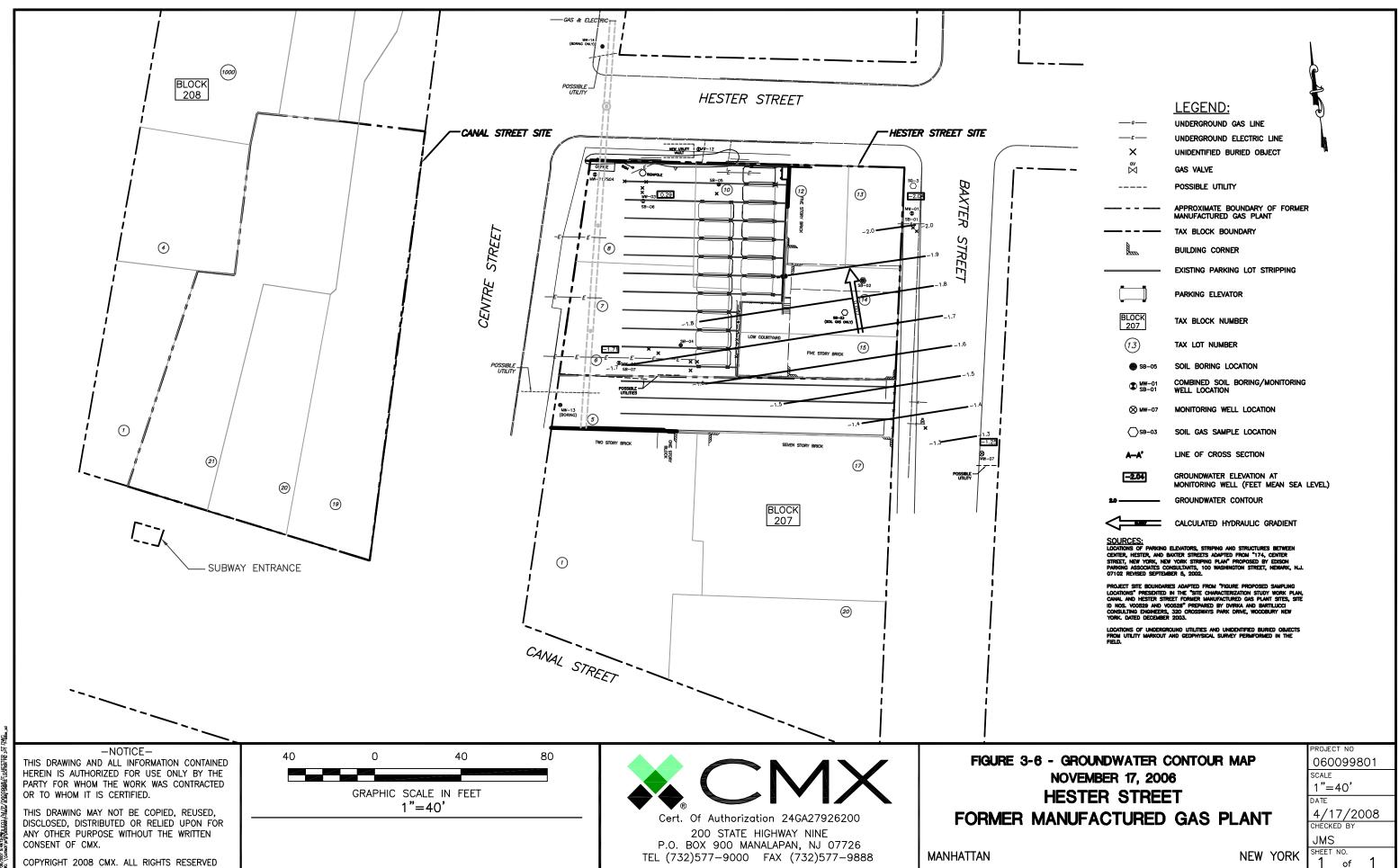




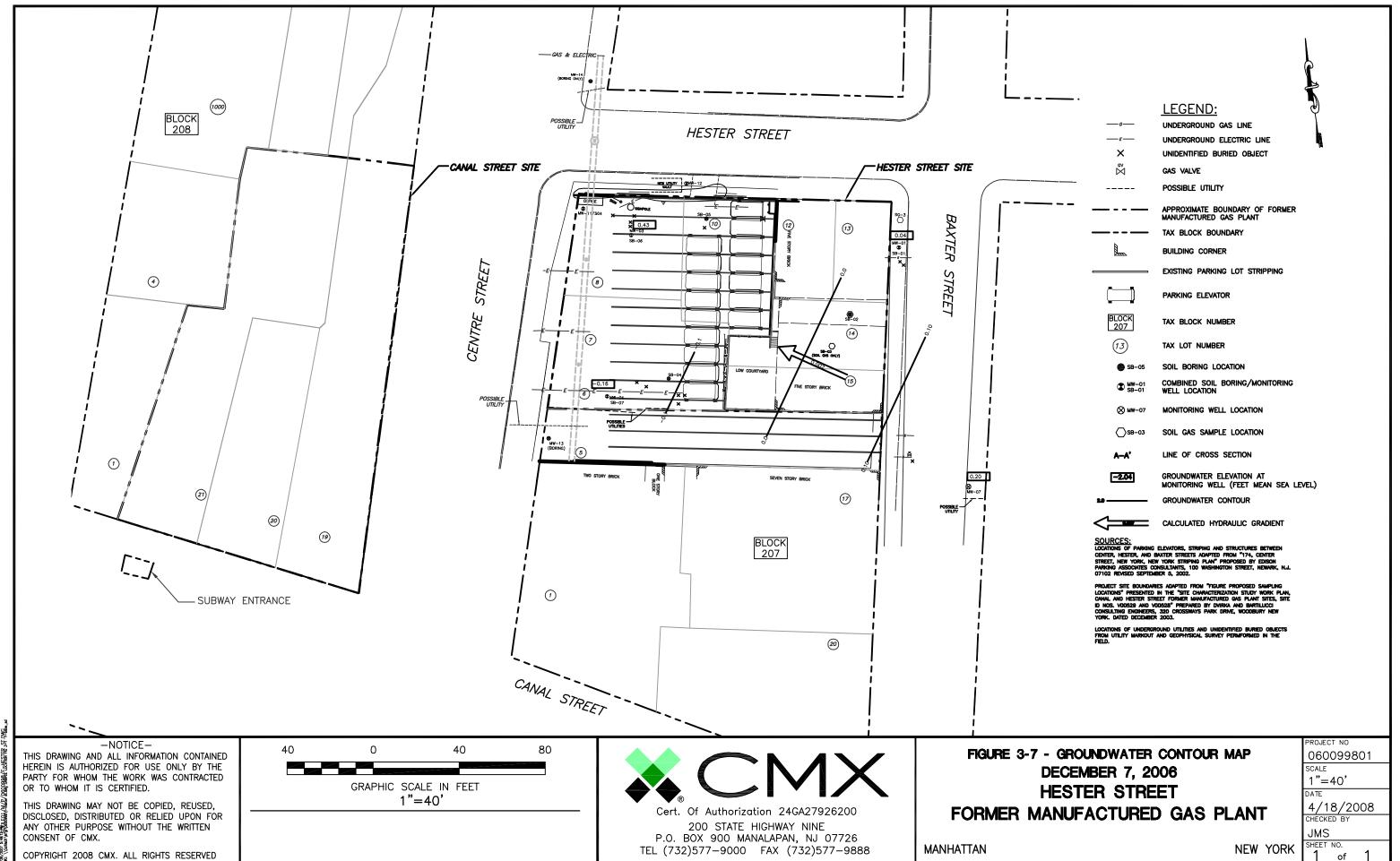




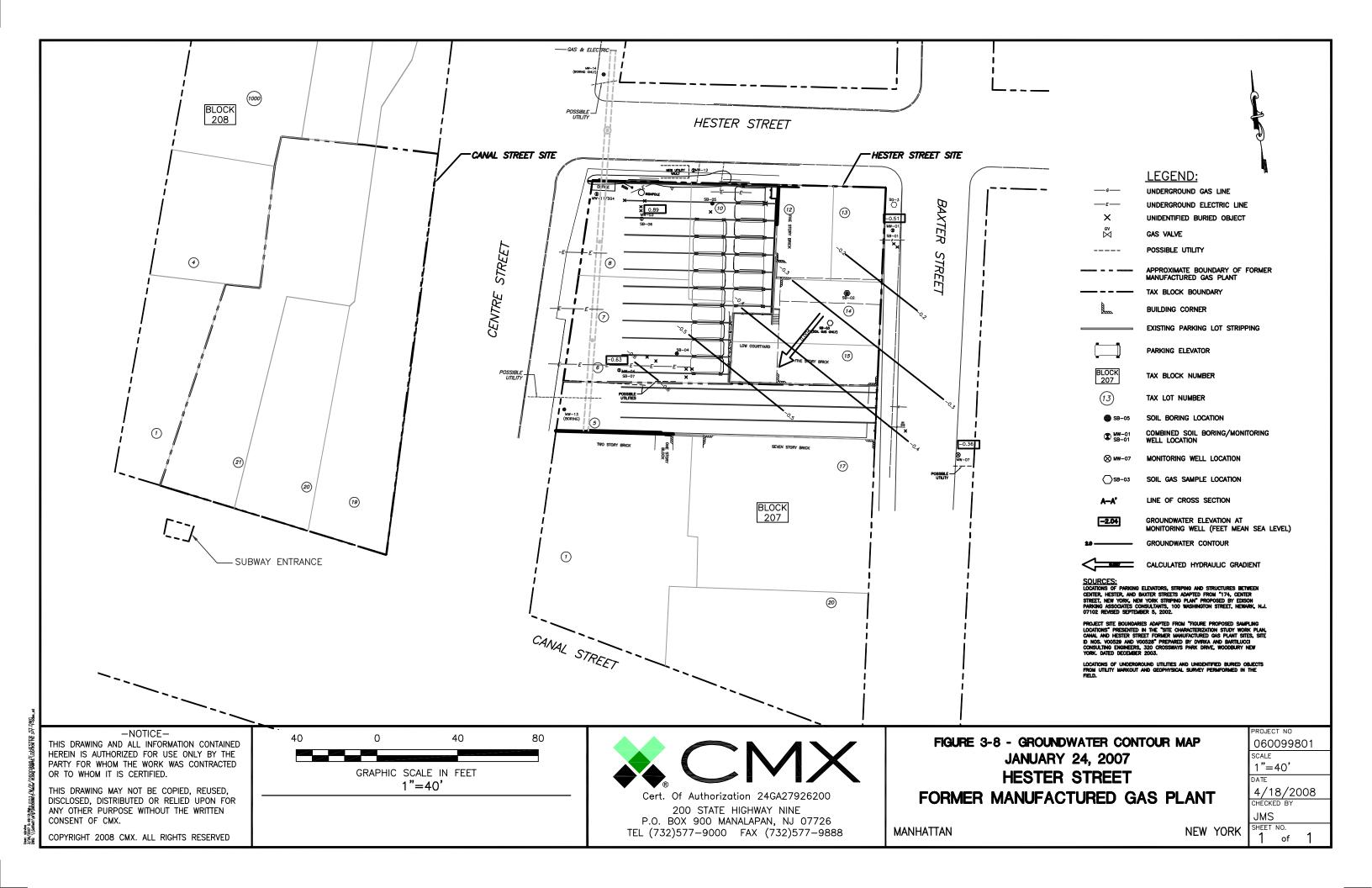


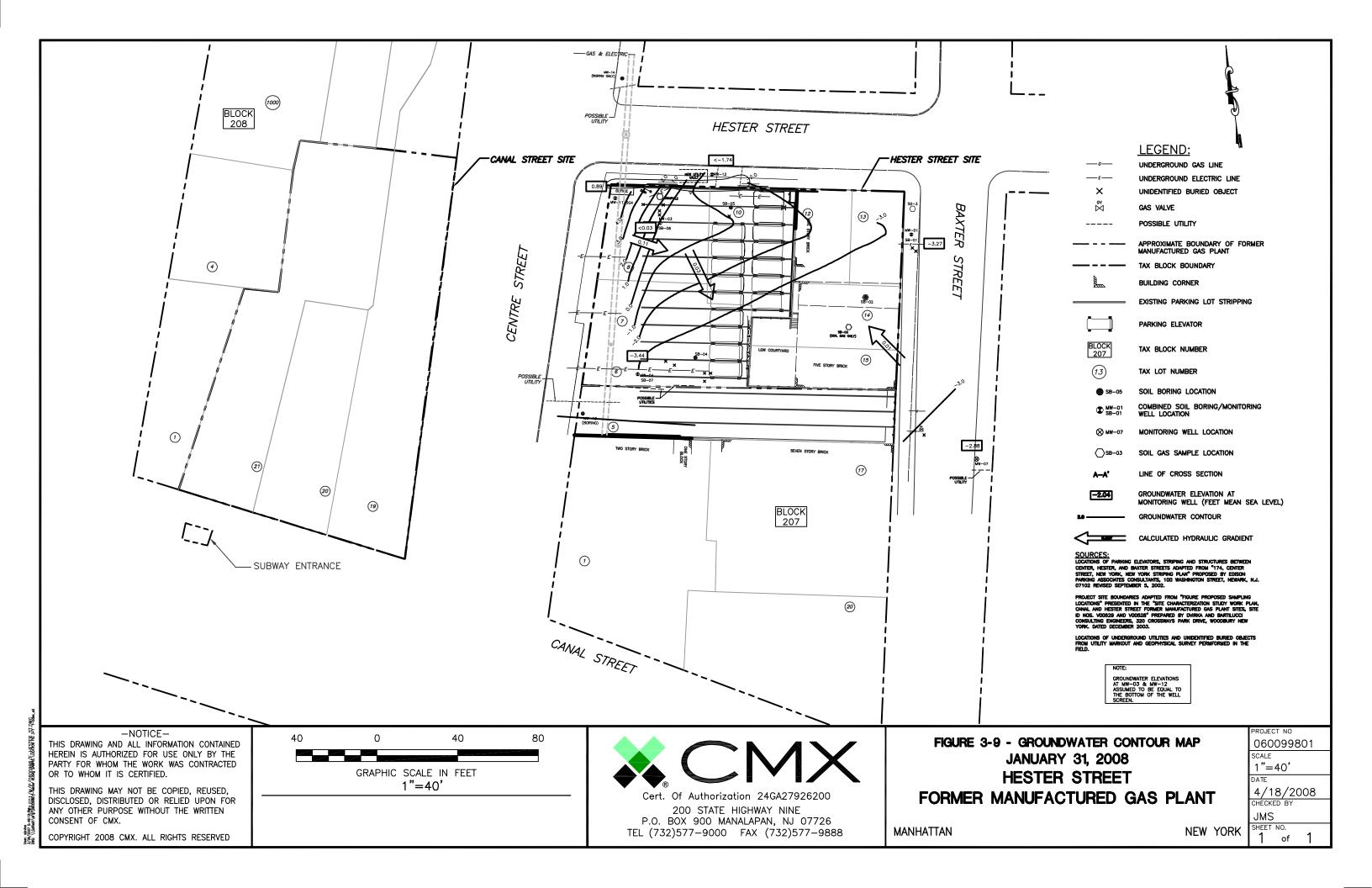


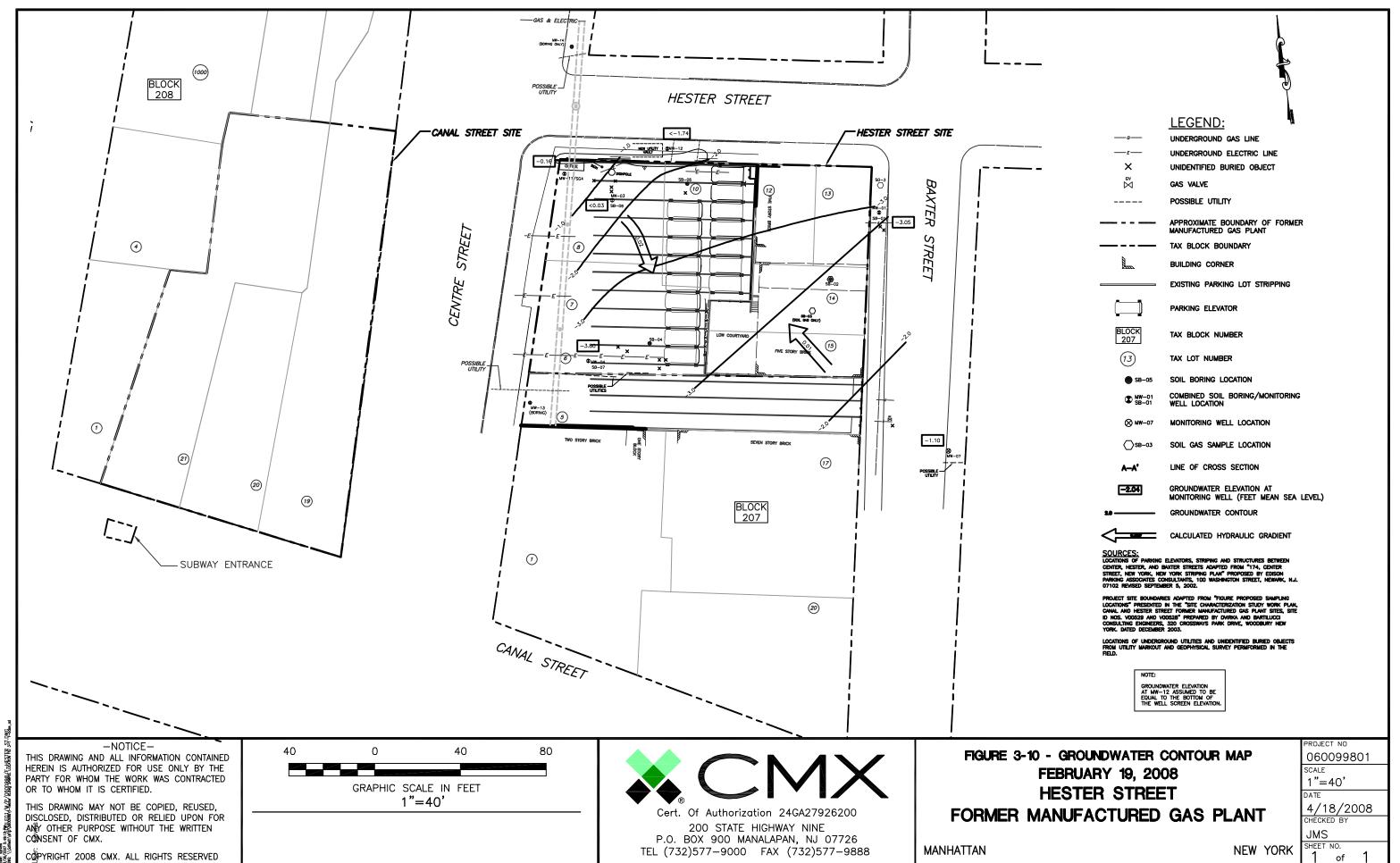
User: sprins



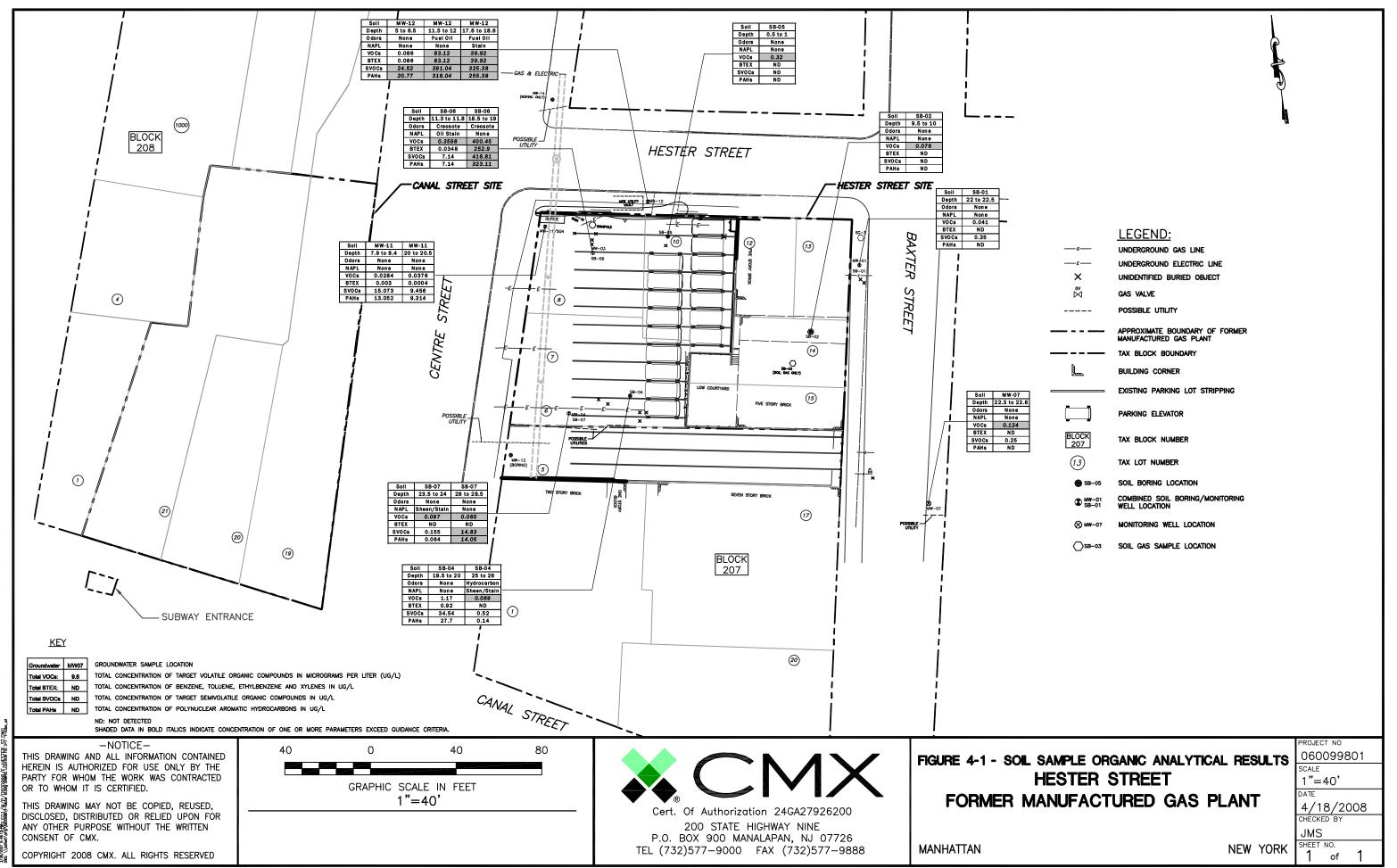
ser: sjovins



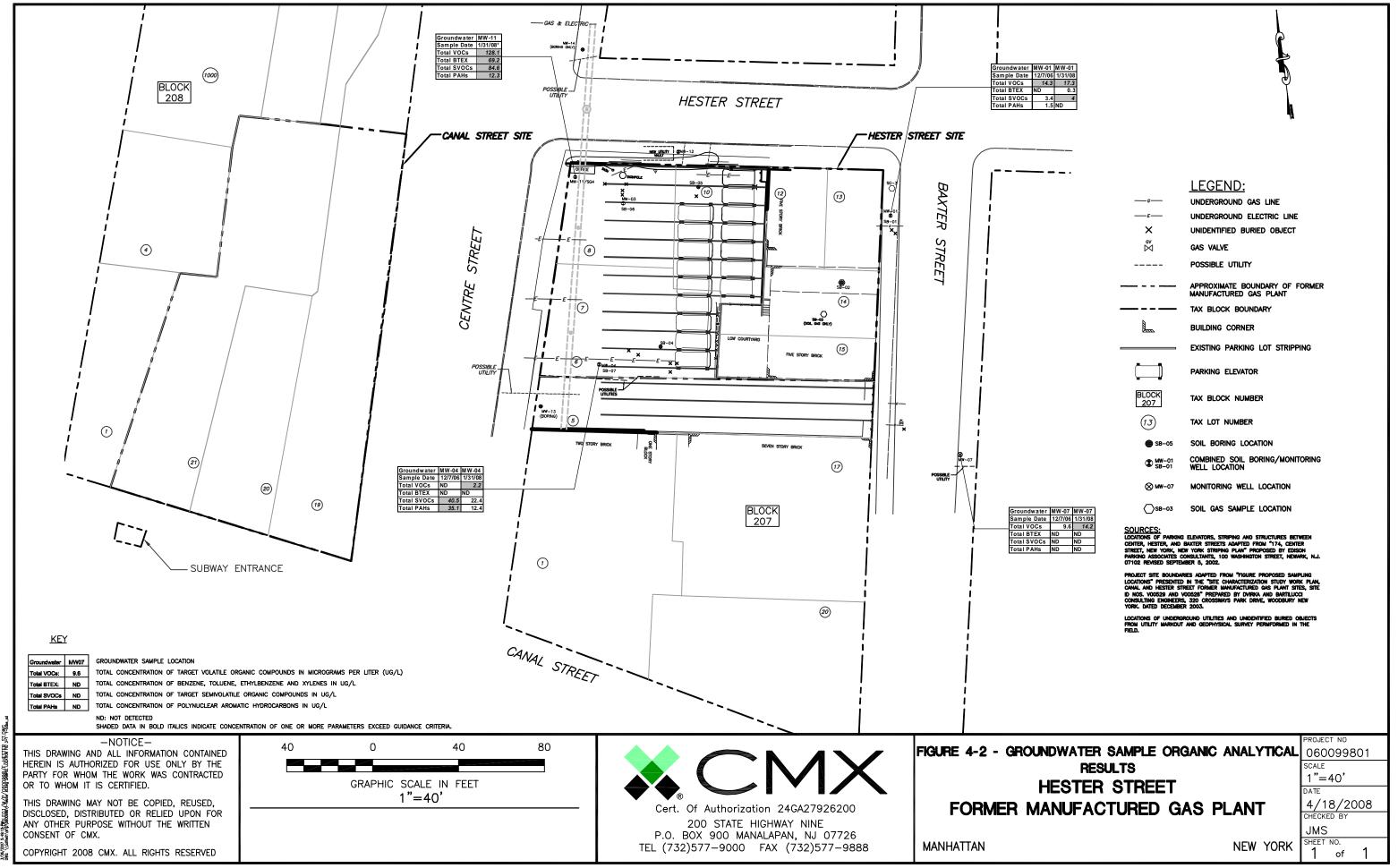




i i



User: spyins



User: spuins

APPENDIX A
SITE PHOTOGRAPHS

### Appendix A PHOTOGRAPIC LOG Canal & Hester Former MGP



Photograph 1. Aerial photograph showing Hester Street site obtained from Microsoft<sup>TM</sup> Windows Live Local 2007.



Photograph 2: View of Parking lot looking northeast towards Hester Street. January 2007.



Photograph 3: Overall picture of site/parking lot looking east from Centre Street. January 2007.



Photograph 4: Looking east towards intersection of Baxter and Hester Streets at location of SB-01/MW-01 and SG-3. October 2006.



Photograph 5: Final completion of MW-01/SB-01 on Baxter Street. January 2007.



Photograph 6: Baxter Street building basement access for SB-02. October 2006.



Photograph 7: Final completion of SB-04 within parking lot. January 2007.



Photograph 8: Final completion of SB-05 within parking lot. January 2007.



Photograph 9: Final completion of MW-03/SB-06 within parking lot. January 2007.



Photograph 10: Final completion of MW-04/SB-07 within parking lot. January 2007



Photograph 11: Final completion of MW-07 on Baxter Street. January 2007.



Photograph 12. Looking south on Baxter Street towards proposed location of MW-07. October 2006.



Photograph 13: MW-11/SG-4 location after soft dig near corner of Centre and Hester Streets. January 2008.



Photograph 14: MW-12 location after soft dig looking south from Hester. January 2008.



Photograph 15: Looking east at electric utility markout on Hester Street nearest to MW-12. January 2008.



Photograph 16: Original location and offset for MW-13 looking south. January 2008.



Photograph 17: Proposed location MW-14 after soft dig looking east on Centre. January 2008.

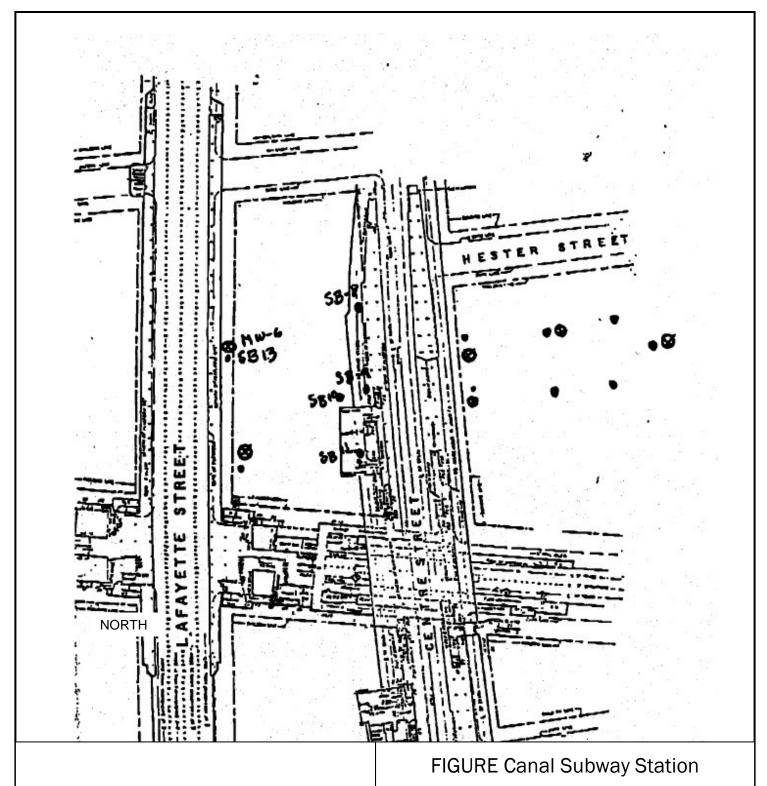


Photograph 18: Bone found in SG-3 location on Baxter Street. January 2008.



Photograph 19: Looking west-southwest at gas utility markout located near corner of Hester and Baxter Streets. January 2008.

# APPENDIX B CANAL STREET SUBWAY STATION DIAGRAM



## HESTER STREET FORMER MANUFACTURED GAS PLANT SITE

MANHATTAN, NY

 $\label{lem:nonconstruction} N:\project\2006\0600998\01\SCR\SCR\\ Figures\Figure 1-1 Site Location.doc$ 



200 STATE HIGHWAY NINE P.O. BOX 900 MANALAPAN, NJ 07726-0900 TEL. (732) 577-9000 FAX (732) 577-9888

SCALE NTS DATE 01/10/06

DRAWN BY JMS

PROJECT NO. 060099800

# APPENDIX C SIDEWALK OPENING PERMITS

#### Holly DAntonio

From:

Dennis Mayer [dmayer@aquiferdriffing.com]

Sent:

Monday, October 30, 2006 10:34 AM

To: Subject: Holly DAntonio FW: Ticket: 63000728

----Original Message----

From: ny@occinc.com [mailto:ny@occinc.com] Sent: Friday, October 27, 2006 4:11 PM

To: dmayer@aquiferdrilling.com

Subject: Ticket: 63000728

NYCLI ONE CALL

Send To: C EMAIL

Seq No: 202

Ticket No: 63000728

ROUTINE

Start Date: 11/01/06

Time: 7:00 AM

Lead Time: 20

Address:

State: NY

County: NEW YORK

Place: MANHATTAN

Dig Street: BAXTER ST

Nearest Intersecting Street: CANAL ST

Second Intersecting Street: HESTER ST

Type of Work Type of Work : SOIL BORING
Type of Equipment : DRILL RIG

Work Being Done For: SCHOOR DEPALMA

In Street: X On Sidewalk: X On Property Location if Private:

Private Property: Front:

Other:

Location of Work: MARK BOTH SIDES OF STREET AND SIDEWALK BETWEEN

INTERSECTING : STREETS

Remarks:

Lat:

Lon:

Zone:

ExCoord NW Lat: 40.7184820 Lon: -74.0005070 SE Lat: 40.7171680

Lon: -73,9988140

Phone: (516)616-6026

Caller Address: 150 NASSAU TERMINAL RD

Phone: (516)616-6026 Fax Phone: (516)616-6194

NEW HYDE PARK, NY 11040

Email Address : dmayer@aquiferdrilling.com

Additional Operators Notified:

CEM CONSOLIDATED EDISON CO. OF N.Y (718)416-2832 BCM EMPIRE CITY SUBWAY-MANHATTAN (212)941-7386 MCINY01 MCI (800)289-3427 QW1 QWEST COMMUNICATIONS (303)992-0211 RCNT01 RCN (718)472-2304 TCCTEL01 TELEPLEX COIN COMMUNICATIONS (212)965-8800 TCG01 TCG (AT&T) (903)753~3145 TIME WARNER CABLE - MANHATTAN TWCNYC05 (212)379-4191 XOCOMM01 XO COMMUNICATIONS, INC. (718) 472-2304

Original Call Date: 10/27/06 Time: 3:46 PM Op: webusr

2

#### Schindler, Jason

From: Dennis Mayer [dmayer@aquiferdrilling.com]

Sent: Friday, October 27, 2006 16:24

To: Schindler, Jason Subject: RE: Ticket: 62960842

Jason, The One Call # for Baxter St is 63000728

Thanks Dennis

----Original Message----

From: Schindler, Jason [mailto:jschindl@schoordepalma.com]

Sent: Friday, October 27, 2006 12:32 PM

To: dmayer@aquiferdrilling.com Subject: RE: Ticket: 62960842

Dennis,

You were also supposed to markout Baxter Street for MW-01/SB-01, MW-07 and the basement borings. Was that done? No markouts were visible in that area in the field this morning.

Thank You, Jason Schindler

----Original Message----

From: Dennis Mayer [mailto:dmayer@aquiferdrilling.com]

Sent: Friday, October 27, 2006 11:41

To: Schindler, Jason

Subject: FW: Ticket: 62960842

----Original Message----

From: ny@occinc.com [mailto:ny@occinc.com] Sent: Monday, October 23, 2006 3:13 PM

To: dmayer@aquiferdrilling.com

Subject: Ticket: 62960842

NYCLI ONE CALL

Send To: C\_EMAIL Seq No: 321

Ticket No: 62960842 ROUTINE

Start Date: 10/26/06 Time: 7:00 AM Lead Time: 20

State: NY County: NEW YORK Place: MANHATTAN Dig Street: CENTRE ST Address: 174

Nearest Intersecting Street: CANAL ST

Second Intersecting Street: HESTER ST

Type of Work : SOIL BORING Type of Equipment : DRILL RIG Work Being Done For: SHOOR DEPALMA

In Street: X On Sidewalk: X Private Property: X Other: On Property Location if Private: Front: X Rear: X Side: X

Location of Work: MARK BOTH SIDES OF STREET AND SIDEWALK AND FRONT REAR AND

: SIDE OF PRIVATE PROPERTY OF ABOVE ADDRESS

#### Remarks:

:

Nad: Lat: Lon: Zone:

ExCoord NW Lat: 40.7191750 Lon: -74.0007800 SE Lat: 40.7173730

Lon: -73.9984690

Company : AQUIFER DRILLING & TESTING INC Best Time: 7AM-4PM Contact Name : DENNIS MAYER Phone: (516)616-6026 Field Contact : SAME Phone: (516)616-6026 Caller Address: 150 NASSAU TERMINAL RD Fax Phone: (516)616-6194

NEW HYDE PARK, NY 11040

Email Address : dmayer@aquiferdrilling.com

Additional Operators Notified:

CEM CONSOLIDATED EDISON CO. OF N.Y (718)416-2832ECM EMPIRE CITY SUBWAY-MANHATTAN (212)941-7386ELCOM01 ELANTIC TELECOM (804)565-7737(800)289 - 3427MCINY01 MCI QWEST COMMUNICATIONS QW1 (303)992-0211RCNT01 RCN (718)472-2304TCCTEL01 TELEPLEX COIN COMMUNICATIONS (212)965-8800 (903) 753-3145 TCG01 TCG (AT&T) (212)379-4191 TWCNYC05 TIME WARNER CABLE - MANHATTAN

Original Call Date: 10/23/06 Time: 2:17 PM Op: webusr

#### Holly DAntonio

From:

Dennis Mayer [dmayer@aquiferdrilling.com]

Sent: Monday, October 30, 2006 10:34 AM

To: Subject:

Holly DAntonio FW: Ticket: 63000728

----Original Message----

From: ny@occinc.com [mailto:ny@occinc.com] Sent: Friday, October 27, 2006 4:11 PM

To: dmayer@aquiferdrilling.com Subject: Ticket: 63000728

NYCLI ONE CALL

Send To: C EMAIL

Seq No: 202

Ticket No: 63000728

ROUTINE

Start Date: 11/01/06 Time: 7:00 AM

Lead Time: 20

State: NY

County: NEW YORK

Place: MANHATTAN

Address:

Dig Street: BAXTER ST

Nearest Intersecting Street: CANAL ST

Second Intersecting Street: HESTER ST

Type of Work : SOIL BORING Type of Equipment : DRILL RIG Work Being Done For: SCHOOR DEPALMA

In Street: X On Sidewalk: X On Property Location if Private:

Private Property:

Other:

Front: Rear:

Location of Work: MARK BOTH SIDES OF STREET AND SIDEWALK BETWEEN

INTERSECTING. : STREETS

Remarks:

Lat:

Lon:

ExCoord NW Lat: 40,7184820 Lon: -74,0005070 SE Lat: 40,7171680

Lon: -73,9988140

Company : AQUIFER DRILLING & TESTING INC Best Time: 7AM-4PM Contact Name : DENNIS MAYER Phone: (516)516-602 Company Field Contact : SAME

Phone: (516) 516-6026 Phone: (516)616-6026 Pax Phone: (516)616-6194

Caller Address: 150 NASSAU TERMINAL RD NEW HYDE PARK, NY 11040 Email Address : dmayer@aquiferdrilling.com

Additional Operators Notified:

CEM CONSOLIDATED EDISON CO. OF N.Y (718)416-2832 ECM EMPIRE CITY SUBWAY-MANHATTAN (212) 941-7386 MCINY01 MCI (800) 289-3427 QWEST COMMUNICATIONS OWT (303) 992-0211 RCNTOl RCN (718) 472-2304 TCCTELOI TELEPLEX COIN COMMUNICATIONS (212)965-8800 TCG01 TCG (AT&T) (903)753-3145 TWCNYC05 TIME WARNER CABLE - MANHATTAN (212) 379-4191 XOCOMM01 XO COMMUNICATIONS, INC. (718)472-2304

Original Call Date: 10/27/06 Time: 3:46 PM: Opt webust

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Cartel Heto8

Department of Transportation

: MARHATTAN ÎNSPECT DIST: 10 000. Date: 1

STREET OPENING PERMIT

PERMIT VALID FROM 01/17/2000 TO 02/16/2000

FEES (MON-REFUNDABLE): ADMIN. \$\*135.00 REISSUE

PERMIT TYPE 0152 **EDADWAY TYPE** CONCRETE SÍBEWALK TYPE ISSUE DATE 01/17/2008

LICENSE # : PERMITTEE # : 02810

COMINACI # :

PERMIT # : MOI-2008017-011 RECORDED # : MOME PREVIOUS # : MOME

TOTAL FEE \$\*\*\*135.00 PAID

PERNISSION HEREBY GRANTED TO:
NAME: GOVIER DAILLING & TESTING, INC
CONTACT MANE: AQUIER DRILLING

PHONE : ( 515 ) 516 - 5026

: 150 MASSAU TERMINAL NEW HYDE PARK MY 11040 MYS DEC ADDRESS

TO OPEN THE SIDEWALK AT:

ON STREET : BAKTER STREET FROM STREET : CANAL STREET TO STREET : HESTER STREET

FOR A MAXIMUM LENGTH OF

40 FEET

FOR THE PURPOSE OF: ST OPMO/INSTA/TESTS PITS/MONIT WELL/PIPE

AGREEMENT BYT MYSDEC AND CON-ED

M0535841

\*\*\* SEE PAGE 2 FOR STEPWEATTONS \*\*\*

PERMIT ORIGINALLY PAINTED ON GIVEY/2008 AT 08:52 BY DRIGH WILDER: PERMIT OFFICE

PAGE 1 07

PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

COMMISSIONER

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Call 1-800-272-4480 before Street Opening Excavations

New York State Industrial Code Rule 753 mandates 2:10 business days notice prior to digging

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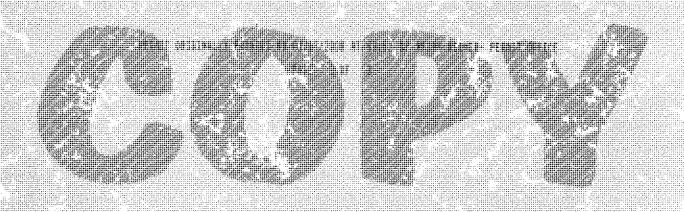
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Department of Transportation

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LOROUGH : HANHETTAN

INSPECT DIST: 10 comm. Board : 2

STREET OPENING PERMIT PERMIT VALID FROM 01/07/2008 TO 02/06/2008

FEES (NON-REFUNDABLE): ADMIN \$\*135.00 PEISSUE

PERNIT TYPE ROADWAY TYPE 0126 SIDEWALK TYPE CONCRETE 12/31/2007 ISSUE DATE

PÉRNITTEE # : 02810 CONTRACT # :

PERMIT #: NO1-2007365-036
RECORDED #: NONE
PREVIOUS #: NONE

TOTAL FEE \$\*\*\*135.00 PAID

PERMISSION HEREBY GRANTED TO:

WATE: AQUIFER DRILLING & TESTING, INC.
CONTACT MAKE: AQUIFER DRILLING.

: ( 516 ) 616 - 6026 : 150 NASSAU TERMINAL NEW HYDE PARK NY 11040 GENERAL CONTRACTOR

TO OPEN THE SIDEWALK AT :

HOUSE #

OK STREET : CENTRE STREET FROM STREET : HESTER STREET TO STREET : HOWARD STREET

FOR A MAXIMUM LENGTH OF

50 FEET

FOR THE PURPOSE OF: IEST PITS, CORES OR BORING VOLUNTARY CLEANUP AGREEMENT WITH MYSDEP

M0535841

\*\*\* SEE PHYE 2 FOR STIPE WITHIN \*\*\*

PERMIT ORIGINALLY PRINTED ON LEVALVIRDA AT ARRISE BY BRIGH GERMAN PERMIT OPPLIE

PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

PER

COMMISSIONER



Call 1-800-272-4480 before Street Opening Excavations.

New York State Industrial Code Rule 753 mandates 2-10 business days notice prior to digging.



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IMSPECT DIST: 10 COMM. BOARD :

Department of Transportation

PERMIT 1: #01-2007365-036 RECORDED # : NOWE

PREVIOUS # : NONE

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SPECIFIC STIPULATIONS: 013 OCMC-STREE

NAINTAIN HINIHUN 5 FOOT CLEAR SIDEWALK

019 OCHC-STREE WORK 7AM - BPM, HOWDAY THROUGH FRIDAY

000 OCAC-STREE

NARBING SIGNS AND TRAFFIC SAFETY DEVICES SHALL BE PROVIDED, INSTALLED, MAINTAINED AND REMOVED BY THE PERMITTEE IN ACCORDANCE WITH THE "FEDERAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", THE NAMUAL MAY BE OBTAINED AT

HTTP://MUTCD.FHWA.BOT.GOV

856 OCMC-STREE DO NOT PLACE MATERIALS, TRAILERS, CRAMES, CONTAINERS, OR EQUIPMENT IN FRONT OF DRIVENAYS, BUS STOPS, NITHIN FIFTEEN FEET OF A FIRE HYDRAMT, IN AUTHORIZED PARKING ZONES OR BLOCKING ACCESS TO DEP NATER TESTING BOXES.

991 OCHO-STREE THIS PERMIT ACTIVITY MAY NOT START UNTIL THE PERMITTEE COORDINATES ALL WORK AND RESTORATION REQUIREMENTS WITH THE RESIDENT ENGINEER.

103 OCNO-STREE PARKING OF PRIVATE VEHICLES ON THE STREET (ROADWAY AND SIDEWALK) WORK AREAS

IS PROWIBLIED.

107 OCMG-STREE

LOADING AND UNLOADING, STANDING OF FARKING IN A LANE ADJACENT TO THE WORK IONE IN THE ROADNAY IS PROHIBITED. THIS APPLIES TO PERMITTEES AND ALL OF THETR

SURCONTRACTORS.

\*\*\* SEE PAGE 2 FOR STIPPLATIONS \*\*\*

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PERMIT BY THE COMMISSIONER.

Call 1-800-272-4480 before Street Opening Excavations.

New York State Industrial Code Rule 753 mandates 2:10 business days notice prior to digging



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: MANHATTAN SPECT DIST: 10 nn. Board :

Department of Transportation

PERNII 1: NO1-2007365-034 RECORDED 1: NOME PREVIOUS 1: NOME

PROTECTED STREET OPENING PERMIT PERMIT VALID FROM 01/07/2008 TO 02/06/2008

FEES (NON-REFUNDABLE): ADMIN \$\*135.00 REISSUE

PERMIT TYPE ROADWAY TYPE 0152P SIDEWALK TYPE CONCRETE ISSUE DATE 12/31/2007

LICENSE # : D2810 CONTRACT # :

TOTAL FEE \$\*\*\*135.00 PAID

PERMISSION HEREBY GRANTED TO :

SOLON MERCES ORMALED TO S HAME : AQUIFER DRILLING & TESTING, INC CONTACT HAME : AQUIFER DRILLING PHONE : (516 ) 616 - 6026 ADDRESS : 150 MASSAU TERMINAL NEW HYDE PARK NY 11040 NYS DEC

TO OPEN THE SIDENALK AT : HOUSE # :

HOUSE 1 : ON STREET : HESTER STREET FROM STREET : BOXTER STREET TO STREET : CENTRE STREET

FOR A MAXIMUM LENGTH OF

50 FEET

FOR THE PURPOSE OF: ST OPNG/INSTA/TEST PITS/MONIT WELL/PIPES
VOLUNTARY CLEANUP AGREEMENT WITH MYSDEC 10535841

\*\*\* BEE PAGE 2 FOR STEPULATIONS \*\*\*

PERMIT DRIGINACLY PRINTED ON 01/02/2008 AT 08:25 BY CARLOS MONTES PRAIT COLLEGE AT

PAGE 1 OF 3

PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

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COMMISSIONER

Call 1-800-272-4480 before Street Opening Excavations

New York State Industrial Code Rule 753 mandates 2,10 business days notice prior to digging



### New York City Department of Transportation =

: MANHATTON PECT DIST: 10

M. BOARD :

PERMIT # : MO1-2007365-034

RECORDED # : KONE PREVIOUS # : KONE

#### PROTECTED STREET OPENING PERMIT PERMIT VALID FROM 01/07/2008 TO 02/05/2008

ALL WORK MUST ADHERE TO THE FOLLOWING STIPULATIONS &

013 038 066 062 091 103 107

SCHOOL WAGEO1 WAGEO2 NOISE1
SPECIFIC STIPULATIONS: CALL MSM 212 4878441, SKETCH NEEDED. LX 1/2/08.
013 OCMC-STREE MAINTAIN NIMINUM 5 FOOT CLEAR SIDEWALK

038 OCHC-STREE NARNING SIGNS AND TRAFFIC SAFETY DEVICES SHALL BE PROVIDED. INSTALLED, MAINTAINED AND REMOVED BY THE PERMITTEE IN ACCORDANCE WITH THE "FEDERAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". THE MANUAL MAY BE OBTAINED AT HTTP://NUTCD.FHWA.DOT.GOV

066 OCHC-STREE DO NOT PLACE MATERIALS, TRAILERS, CRAMES, CONTAINERS, OR EQUIPMENT IN FRONT OF DRIVENAYS, BUS STOPS, WITHIN FIFTEEN FEET OF A FIRE HYDRANT, IN OUTHORIZED PARKING ZONES OR BLOCKING ACCESS TO DEP WATER TESTING BOXES.

082 OCMC-STREE

WORK 7AM - 4PM, MONDAY THROUGH FRIDAY

991 OCHC-STREE THIS PERMIT ACTIVITY MAY NOT START UNTIL THE PERMITTEE COORDINATES ALL WORK AND RESTORATION REQUIREMENTS WITH THE RESIDENT ENGINEER.

103 OCHC-STREE PARKING OF PRIVATE VEHICLES ON THE STREET (ROADWAY AND SIDEWALK) WORK AREAS

IS PROBIBITED.

107 OCHC-STREE LOADING AND UNLOADING, STANDING OR PARKING IN A LANE ADJACENT TO THE WORK ZONE IN THE ROADWAY IS PROHIBITED. THIS APPLIES TO PERMITTEES AND ALL OF THEIR SUBCONTRACTORS.

\*\*\* SEE PAGE 3 FOR STIPULATIONS \*\*\*

PERMIT ORIGINALLY PRINTED ON 01/02/2000 AT 08:28 BY CARLOS MONTAS PRMIT COLLEGE

PAGE 2 0F 3

PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

COMMISSIONER

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Call 1-800-272-4480 before Street Opening Excavations.

New York State Industrial Code Rule 753 mandates 2-10 business days notice prior to digging

BOROUGH : MAD INSPECT DIST: 18 : MANHATTAN

COMM. BOARD: 2

Department of Transportation:

PERNIT # : NO1-2007365-037 RECORDED # : NOME PREVIOUS # : NOME

STREET OPENING PERMIT PERRII VALID FROM 01/07/2008 TO 02/06/2008

FEES (NOW-REFUNDABLE): ADMIN \$\*135.00 REISSUE

PERMIT TYPE 0126 ROADRAY TYPE SIDENALK TYPE CONCRETE . ISSUE DATE 12/31/2007

LICENSE # : PERMITTEE # : 02810

CONTRACT # :

TOTAL FEE \$\*\*\*135.00 PAID

PERNISSION HEREBY GRANTED TO:
NAME: AQUIFER DRILLING & TESTING THE

CONFACT NAME: AQUIFER DRILLING
PHONE: (516) 516 - 5026
ADDRESS: 150 HASSAU TERMINAL NEW HYDE PARK NY 11040
GENERAL CONTRACTOR

TO OPEN THE SIDEWALK AT:
HOUSE # :

ON STREET : CENTRE STREET FROM STREET : CANAL STREET TO STREET ; HESTER STREET

FOR A MAXIMUM LENGTH OF

FEET

FOR THE PURPOSE OF: TEST PITS, CORES OR BORING VOLUNTARY CLEANUP AGREEMENT WITH NYSDEP

MOS35841

\*\*\* SEE PAGE 2 FOR STIPHER IONS \*\*\*

PERMIT ORIGINALLY PRINTED ON 12/21/2007 AT 09:40 BY BRION WEIRER-PERMIT OFFICE

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PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

PER

COMMISSIONER

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Call 1-800-272-4480 before Street Opening Excavations.

New York Stale Industrial Code Rule 753 mandates 2-10 business days notice prior to digging.

: MANHATTAN

INSPECT DIST; 10 COMM. BOARD: 2

PERMIT 1: MOI-2007365-037

RECORDED # : NONE PREVIOUS # : NONE

#### STREET OPENING PERMIT PERMIT VALID FROM 01/07/2008 TO 02/06/2008

013 019 038 066 091 103 107 SCHOOL WAGED1 WAGEO2 NOISE1 ALL NORK MUST ADHERE TO THE FOLLOWING STIPULATIONS:

SPECIFIC STIPULATIONS : OCHC-STREE 113

RAINTAIR NINIAUR S FOOT CLEAR SIDEWALK

019 OCMC-STREE

WORK 7AM - GPM, MONDAY THROUGH FRIDAY

038 OCHC-STREE

WARNING SIGNS AND TRAFFIC SAFETY DEVICES SHALL BE PROVIDED, INSTALLED, MAINTAINED AND REMOVED BY THE PERMITTEE IN ACCORDANCE WITH THE "FEDERAL MAHUAL OF UNIFORM TRAFFIC CONTROL DEVICES". THE MANUAL MAY BE OBTAINED AT

HTTP://MUTCD.FHWA.DCT.GOV

166 OCHO-STREE DO NOT PLACE MATERIALS, TRAILERS, CRAMES, CONTAINERS, OR EQUIPMENT IN FRONT OF DRIVEWAYS, BUS STOPS, WITHIN FIFTEEN FEET OF A FIRE HYDRANT, IN AUTHORIZED PARKING JONES OR BLOCKING ACCESS TO DEP WATER TESTING BOXES.

091 OCTO-STREE THIS PERMIT ACTIVITY MAY NOT START UNTIL THE PERMITTEE COORDINATES ALL WORK AND RESTORATION REQUIREMENTS WITH THE RESTORATE ENGINEER.

103 OCTIC-STREE PARKING OF PRIVATE VEHICLES ON THE STREET (ROADWAY AND SIDEWALK) WORK AREAS IS PROHIBITED.

107 OCAC-STREE

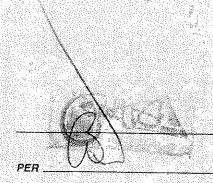
LOADING AND UNLOADING, STANDING OR PARKING IN A LANE ADJACENT TO THE WORK ZONE IN THE ROADWAY IS PROHIBITED, THIS APPLIES TO PERMITTEES AND ALL OF THEIR SUBCONTRACTORS.



\*\*\* SEE PAGE 1: FOR STIPPLATIONS \*\*\*

PERMIT ORIGINALLY PRINTED ON 11/31/2007 AT JONALD BY INSUR ASTREP- PERMIT DEFINE

PERMITTEES SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH THE TERMS AND CONDITIONS OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.



COMMISSIONER



Call 1-800-272-4480 before Street Opening Excavations.

New York State Industrial Code Rule 753 mandates 2-10 business days notice prior to digging.



t BOROUGH : MANHATTAN INSPECT DIST: 10

CONM. BOARD: 2

Department of Transportation

PERMIT # : NO1-2006293-005

RECORDED # : NONE PREVIOUS # : NONE

STREET OPENING PERMIT PERNIT VALID FROM 10/30/2006 TO 11/16/2006

FEES (NON-REFUNDABLE): ADAIN \$\*135.00 REISSDE

PERMIT TYPE 0126 ROADHAT TYPE SIDEWALK TYPE ASPHALT CONCRETE ISSUE DATE 10/20/2006

:

PERMITTEE # : 02010 CONTRACT # :

LICENSE #

TOTAL FEE \$\*\*\*135.00 PAID

PERHISSION HEREBY GRANTED TO:
NAME: : AQUIFER DRILLING & YESTING, INC

CONTACT NAME: AQUIFER DRILLING
PHONE: (516) 616 - 6026
ADDRESS: 150 MASSAU TERMINAL NEW HYDE PARK NY 11040
GOVERNMENT CONTRACTOR (DDC)

TO OPEN THE ROADVAY AND/OR SIDEWALK AT:

HOUSE A ON STREET : BAXTER STREET FROM STREET : CANAL STREET TO STREET : HESTER STREET

FOR A HAXINUM LENGTH OF

100 FEET

FOR THE PURPOSE OF: TEST PITS, CORES OR BORING
SUBSURFACE SITE INVESTIGATION VOLUNTARY CLEANUP
AGREEMENT WITH MYSDEC (BORING).

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\*\*\* SEE PAGE 2 FOR STTPULATIONS \*\*\*

PERNIT DRIGINALLY PRINTER ON 10/20/2006 AT 08:34 BY BRIAN WEINER- PERNIT OFFICE

PAGE 1 OF 2

PERMITTERS SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND WITH YELLTERMS AND CONDITIONS OF THE PRINCET PARTURE TO COMPLY MAY RESULT IN REVOCATION OF THE PERMIT BY THE COMMISSIONER.

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Department of Transportation

BOROUGH : MARKATTAK INSPECT DIST: 10 COMB. BOARD : 2

PERNIT # : NO1-2006293-805 RECORDED # : NONE PREVIOUS # : NONE

#### STREET OPENING PERNIT PERMIT VALID FROM 10/30/2005 TO 11/16/2005

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SPECII 013	TIC STIPULATIONS: _ OCHC-STREE	E.M. - HAIRYAIN-RINIRUM 5-FOOT-CLEAR SIDEWALK
019	OCHC-STREE	WORK 7AH - SPK, MOMBAY THROUGH FRIBAY
038	OCHC-STREE	WAYNING SIGNS AND TRAFFIC SAFETY BEVICES SHALL BE PROVIDED, INSTALLED, MAINTAINED AND REMOVED BY THE PERMITTEE IN ACCORDANCE WITH THE "FEBERAL MANUAL OF UNIFORM TRAFFIC CONTROL BEVICES". THE MANUAL MAY BE OBTAINED AT HTTP://MUTCD.FHWA.BOT.GOY
066	OCMC-STREE	BO NOT PLACE MATERIALS, TRAILERS, CRANES, CONTAINERS, OR EQUIPMENT IN FRONT OF Drivevays, Bus stops, within rifteen feet of a fire hydrant or in Authorized parking zomes.
091	OCHC-STREE	THIS PERMIT ACTIVITY MAY NOT START UNTIL THE PERMITTEE COORDINATES ALL WORK AND RESTORATION REQUIREMENTS WITH THE RESIDENT ENGINEER.
103	OCHC-STREE	PARKING OF PRIVATE VEHICLES ON THE STREET (ROADWAY ARD SIDEWALK) WORK AREAS IS PROHIBITED.
107	OCMC-STREE	LOADING AND UNLOADING, STANDING OR PARKING IN A LAME ADJACENT TO THE WORK JONE IN THE ROADNAY IS PROMIBITED. THIS APPLIES TO PERMITTEES AND ALL OF THEIR SUBCONTRACTORS.

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NO WORK TO BE PERFORMEN NITHIN BLOCK FRONTING SCHOOL INCLUDING INTERSECTIONS FOR ONE HOUR PRIOR TO SCHOOL START TIME THROUGH ONE HOUR AFTER END OF SCHOOL TIME. PERHITTEE MUST NOTIFY SCHOOL PRINCIPAL IN WRITING 48 HOURS PRIOR TO BEGINNING ANY BORK. THIS STIP YOURS ANY/ ALL OTHER CONFLICTING STIPS ON THIS PERMIT UNLESS RECOMPANIED WITH VARIANCE STIP YAROOL.

PERMIT ORIGINALLY PRINTED ON 10/20/2006 AT DB:34 BY BRIAN WEIMER- PERMIT OFFICE

PAGE 2 OF 2

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# APPENDIX D COMMUNITY AIR MONITORING PROGRAM DATA – CD ROM

INSERT DISK WITH COMMUNITY AIR MONITORING PROGRAM DATA

APPENDIX E
SOIL BORING LOGS

V:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Appendices\App E - Boring and Well Logs\[Hester MW07.xls]Page 1

#### Page 2 of 3 **LOG OF SOIL BORING MW-07** CLIENT AUTHORIZATION NO. PROJECT NAME CMX PROJECT NO HDR/LMS PROJECT NO Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR READINGS Dye Test Result Blows per Graphic L Depth Bkg Sample Head feet) INTERVAL DESCRIPTION (ft bgs REMARKS Space 11 9.0-12.0 FILL: Dark reddish brown (5YR 3/2) Drill tools drop one foot (from 11 to 12 feet SAND (SW), well graded fine to below grade) while placing 5-foot length of medium subrounded sand, moist, augers during drilling activities. loose. Construction debris in fill consisting of brick and concrete - 12 11/16 fragments. S-6 No evidence of odor, staining or MGP 10 2.0 0.5 10:45 NA 0.0 0.0 NA 12.0-14.0 residuals. FILL: Dark reddish brown (5YR 3/2) SAND (SW), well graded fine to 3 coarse subrounded sand, little 13 (15%) fine to medium gravel, trace 4 (5%) silt, moist, loose. Fill consists of construction debris; brick and 4 concrete fragments. 14 11/16 14.0-19.0 No evidence of odor, staining or MGP Dark reddish brown (5YR 3/2) SAND 0.0 0.3 10:50 0.0 S-7 57/4' 0.0 NA NA (SW), well graded fine to coarse residuals. subrounded sand, little (15%) fine to 15 medium gravel, trace (5%) silt, moist, loose. 16 11/16 Spoon refusal, No recovery; instrument reading from empty split-spoon. Augered 10:55 0.0 S-8 50/4' 0.3 0.0 NA 0.0 NA through refusal to 19 feet below grade. 17 18 11/16 19 19.0-25.0 Yellowish red (5YR 5/6) SAND No evidence of odor, staining or MGP S-9 20 11:00 3 1.5 NA 0.0 0.0 NA (SW), well graded fine to medium residuals. subrounded sand, some (15%) silt, 8 trace (2%) fine gravel, moist, loose. 20 15 22 21 11/16 0.0 S-10 10 2.0 1.8 11:15 NA 0.0 NA 17 At 11:00 collected soil sample MW07 from 22 22.3 to 22.8 feet below grade, six-inch interval 18 above the water table for laboratory analysis of VOCs, SVOCs, metals and cyanide. 17 23 11/16 Becomes wet at 23 feet S-11 20 1.5 11.20 NA 0.0 0.0 NA 12 15 24 13 18

#### Page 3 of 3

#### **LOG OF SOIL BORING MW-07**

										IG IVI		-			
PROJECT NAME Canal and Hester Street Former MGP Sites			0-849-0	UTHORIZA 6-00002	TION			CMX PROJECT NO 060099801			HDR/LM 51006			S PROJECT NO	
INTERVAL DESCRIPTION		nterval		ater -og		.o.	Sa		nples				GANIC VAI		
		Sample Interva	Depth	Groundwater Graphic Log	Stratum	Sample No.	Blows per 6 inches	Driven (feet)	Recovered (feet)	Time Sampled	Dye Test Result		Sample	Head	DEMANUO.
		Ö	(ft bgs)	<u>ე</u>	Ö	Ø	≅.⊆	ے ۵	Δ.E.	Ėΰ	ם א			Space	REMARKS
25.0-31.0	Yellowish red (5YR 5/6) SAND (SW), fine to medium subrounded sand, some (15%) silt, trace (5%) coarse sand, trace (2%) mica schist, wet, medium dense.		 -26 -			S-12	14 13 18	2.0	1.5	11:50	NA	0.0	0.0	NA	No evidence of odor, staining or MGP residuals.
			- 27 -  - 28 -			S-13	12 18	2.0	1.5	12:00	NA	0.0	0.0	NA	
			- 29 -				15								
	End of boring at 31 feet.		- 30 - - 31 - - 32 -			S-14	8 12 13 17	2.0	1.8	12:15	NA	0.0	0.0	NA	This boring was completed as monitoring well MW-07 with 10 feet of screen set from 20 to 30 feet below grade.
			- 33 -  - 34 -												
			- 35 - - 36 - - 37 -												
			- 38 -  - 39 -												

V:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Appendices\App E - Boring and Well Logs\[Hester MW11.xls]Page 1

### Page 2 of 2 **LOG OF SOIL BORING MW-11** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 ORGANIC VAPOR Samples Graphic Log READINGS Blows per Depth Head Bkg Sample Time Sample Recov (feet) INTERVAL DESCRIPTION (ft bgs REMARKS Space 11 11.0-13.0 FILL: shoe contains gray (N 7/) S-4 18 2.0 0.0 14:15 1/17 0.0 NA NA No evidence of MGP residuals, odor or concrete and subbase gravel and staining. Did not collect sample immediately sand only, wet. above water table due to lack of recovery. - 12 WOH 12" Split-spoon sampler is wet at 12.5 feet 13 13.0-20.6 Reddish brown (5YR 4/4) SAND 0.0 S-5 2.0 0.5 14:20 1/17 0.0 1 NA No evidence of MGP residuals, odor or (SW), well graded fine to medium subrounded sand, some (25%) fine to medium gravel, trace (5%) silt, wet, very loose. 14 2 15 S-6 5 2.0 0.1 08:10 1/18 0.0 0.0 NA Resume drilling on January 18, 2008. 10 16 5 6 17 2.0 1/18 S-7 5 0.3 08:20 0.0 0.0 NA 3 18 2 3 19 08:30 1/18 0.0 S-8 3 16 1.5 0.0 0.0 At 8:30 collected soil sample MW-11B from 20.0 to 20.5 feet below grade. No elevated PID readings, staining or odors. This boring 2 0.0 was completed as a monitor well MW-11 20 screened from 10 to 20 feet below grade. 2 0.0 50/1 End of boring at 20.6 feet below 21 grade. 22 23 24

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### Page 2 of 2 **LOG OF SOIL BORING MW-12** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 ORGANIC VAPOR Samples Graphic Log READINGS Blows per Depth Bkg Sample Head Driven (feet) Time Sample Recov (feet) INTERVAL DESCRIPTION (ft bgs REMARKS Space FILL: Reddish brown (5YR 4/4) 11.0-12.0 and dark reddish brown (5YR S-4 6 2.0 2.0 10:30 1/17 0.0 0.0 12.0 At 10:30 collected soil sample MW-12B from 3/2) Gravelly SAND (GW/SW), 11.5 to 12.0 feet below grade from six inches fine to medium sand and gravel, above water table. 3 1.5 laminated layers of gravel and - 12 sand, wet, loose. Fill consists of 12.0-15.0 25% brick and brick fragments. 4 3.5 3 15.8 Fuel oil odors. 13 FILL: Reddish brown (5YR 4/4) SILT S-5 6 2.0 10:40 1/17 0.0 0.8 0.1 NA Slight fuel oil. (ML), clayey silt, some (20%) fine sand, wet, soft. Fill consists of 25% 5 0.0 brick and brick fragments. 4 0.0 0.0 15 15.0-20.5 FILL: Dark reddish brown (5YR 3/2) S-6 <u>WOH</u> 2.0 1.8 10:50 1/17 0.0 1.0 NA Staining and fuel oil odors. SILT (ML), clayey silt, some (20%) 24" fine sand, wet, very soft. 25% brick 3.5 and brick fragments. 16 3.2 4.2 17 S-7 19 2.0 11:00 1/17 0.0 At 11:15 collected soil sample MW-12C from 1.6 13.2 NA 17.6 to 18.6 feet based on highest PID readings, black staining and fuel odors. 15 15.6 18 23 47.2 23 19 11:15 1/17 0.0 0.0 S-8 22 16 16 0.0 This boring was completed as a monitoring Yellowish brown (10YR 5/4) and well, MW-12 screened from 10 to 20 feet dark grayish brown (10YR 4/2) below grade. SAND (SW), alternating layers 28 of fine sand, some (20%) silt, 20 wet, dense. 36 20.5-20.6 50/1 End of boring at 20.6 feet. 21 22 23 24

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# LOG OF SOIL BORING SB-01/MW-01

ROJECT NAME Canal and Hes	ter Street Former MGP Sites		CLIENT A 0-849-0			TION	NO.	CMX PF 06009	ROJECT 99801	NO					HDR/LM: 51006	S PROJECT NO
		erval		er	Б					nples				GANIC VA		
		Sample Interval	Depth	undwat	Graphic Log	Stratum	Sample No.	Blows per 6 inches	en t)	Recovered (feet)	Time Sampled	Dye Test Result	Bkg	READING Sample		
	DESCRIPTION	San		Gro	<u>1,1,1,1</u>	Stra	San	Blov	Driven (feet)	Rec (fee	Tim	Dye			Space	REMARKS
9.0-15.0	Yellowish red (5YR 5/6) SILTY SAND (SM), fine to medium sand, some (20%) clay, little (10%) fine subrounded gravel, trace (2%) mica fragments, moist, loose.		- 11 -  - 12 - 				S-6	4 8 12	2.0	0.5	15:15	NA	0.0	0.0	NA	No evidence of odors, staining or MGP residuals.
	December hand at 40 feet all transfer	L	- 13 -					10								
	Becomes hard at 13 feet, silt content increases to some (35%)						S-7	15 12	2.0	0.5	15:30	NA	0.0	0.0	NA	No evidence of odors, staining or MGP residuals.
			- 14 -					13								
				Н				8								
15.0-30.0	Yellowish red (5YR 5/6) SAND (SW),	1	- 15 -				S-8	15	1.4	1.4	15:40	NA	0.0	0.0	NA	No evidence of odors, staining or MGP
	fine to medium sand, some (20%) silt, trace (2%) clay, trace (2%) mica	И									10.10	100	0.0	0.0	100	residuals. Refusal on unknown impediment causing hammer to bounce.
	fragments, moist, dense.		- 16 -					27								oddong rammor to sound.
								50/5"								
			- 17 -				S-9	12	2.0	1.5	15:50	NA	0.0	0.0	NA	No evidence of odors, staining or MGP residuals.
			- 18 -					15 12								
								18								
	At 19.0 feet silt content decreases to	1	- 19 -				S-10	6	2.0	1.0	16:00	NA	0.0	0.0	NA	No evidence of odors, staining or MGP
	little (25%) silt, trace (2%) clay, trace (2%) mica fragments, moist, dense.							16								residuals.
			- 20 -					25								
		L	- 21 -			-	•	27								
		П					S-11	67	2.0	1.5	16:10	NA	0.0	0.0	NA	
			- 22 -					23								16:10 Collected sample SB-01 from 22.0 to 22.5 feet below grade (six-inch interval above
			<u>.</u> .					25								water table) for laboratory analysis of VOCs, SVOCs, metals, and cyanide.
				$\bigvee$				22								
	Saturated at 23 feet. Silt content increases to some (30%) and clay is		- 23 -	-			S-12	4	2.0	1.5	16:20	NA	0.0	0.0	NA	
	no longer present below 23 feet.		-					14								
			- 24 -					13								
			-					18								
			- 25 -	ŀ		1		10								

# Page 3 of 3

# LOG OF SOIL BORING SB-01/MW-01

				.00 (											
PROJECT NAME Canal and Hes	ter Street Former MGP Sites		0-849-06	5-00002	TION	I NO.	CMX P 06009							51006	S PROJECT NO
		Interval	Depth (ft bgs)	vater		O	9 Je	Sai	mples				GANIC VA READING	S	
INTERVAL	DESCRIPTION	Sample	Depth (ft bas)	Groundwater Graphic Log	Stratum	Sample No.	Blows per 6 inches	Driven (feet)	Recovered (feet)	Time Sampled	Dye Test Result	Bkg	Sample	Head Space	REMARKS
19.0-30.0	Yellowish red (5YR 5/6) SAND (SW),	.,	- 25 -												
	fine to medium sand, some (20%) silt, trace (2%) clay to 23 feet, trace (2%)	1				S-13	6	2.0	1.5	16:30	NA	0.0	0.0	NA	
	mica fragments, medium dense, wet at 23 feet.	$\parallel$	- 26 -				11								
			20				23								
		Г					11								
			- 27 -												Due to restrictions associated with operations
															in active sidewalk and diminishing light, no split- spoons were collected from 27 feet to the end
			- 28 -												of the boring at 30 feet. Completed monitoring well MW-01 with 10 feet of screen set from 20
															to 30 feet below grade.
			- 29 -												
			20												
	End of boring at 30 feet.	T	- 30 -	www	<b>ו</b>										
			- 31 -												
			- 32 -												
			- 33 -												
			- 34 -												
			- 35 -												
			- 36 -												
			- 37												
			- 38 -												
			20												
			- 39 -		1	otes CDO									

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### Page 2 of 7 **LOG OF SOIL BORING SB-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR **Sraphic Log** READINGS Blows per inches Depth (eet) (eet) DESCRIPTION Space INTERVAL (ft bgs 9.0-17.0 FILL: Light brownish gray (10YR 6/2) S-6 2.0 0.5 9:50 0.0 0.0 NA No evidence of MGP staining, odors or NΑ SAND (SW), fine to coarse residuals. subrounded sand, little (15%) silt, trace (5%) mica schist, moist, loose. Brick and concrete fragments. 12 some (20%) fine to medium rounded gravel below 11 feet. 13 11/1 becomes medium dense at 13.0 S-7 16 2.0 0.7 10:10 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 19 14 20 15 15 11/1 S-8 10:15 No recovery. Cobble in shoe; sample 13 2.0 0.0 NA 0.0 0.0 NA readings from empty spoon. 11 16 12 14 17 17.0-19.0 Brownish yellow (10YR 6/6) SAND S-9 21 2.0 1.0 10:20 NA 0.0 0.0 NA No evidence of MGP staining, odors or (SW), fine to coarse subrounded residuals. sand, some (20%) fine to medium 20 gravel, trace (5%) silt, moist, medium 18 17 15 19 19.0-25.0 Yellowish brown (10YR 5/4) SAND, No evidence of MGP staining, odors or 0.0 S-10 6 20 1.0 10:30 NA 0.0 NA (SW), fine to coarse subrounded residuals. sand, some (20%) fine to medium 8 gravel, trace (5%) silt, trace (2%) At 10:50 collected soil sample SB04 20 mica schist, moist, loose. from last interval six inches above 9 water table 19.5 ft bgs and analyzed for VOCs, SVOCs, metals and cyanide. 10 Becomes dense and wet at 21 feet. 21 11/1 S-11 15 2.0 1.5 10:35 NA 0.0 0.0 NA 14 22 12 12 23 Below 23 feet no gravel, little (15%) Evidence of MGP: black seams of staining, S-12 4 2.0 1.0 10:45 NA 0.0 0.1 silt, wet, loose. hydrocarbon odors, sheen on spoon. 4 24 6

### Page 3 of 7 **LOG OF SOIL BORING SB-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR sraphic Log READINGS Blows per Depth eet) (eet) (ft bgs Space INTERVAL **DESCRIPTION** 25 Collected sample FP-1 from 25.0 to 26.0 feet for 25.0-27.0 Dark reddish brown (5YR 3/2) SAND S-13 6 2.0 2.0 10:50 0.0 42.0 NΑ 40.1 fingerprint analysis Collected soil sample SB-(SW), fine to coarse subrounded 04B from 26.0 to 26.5 feet below grade at sand, little (12%) fine gravel, little highest PID reading for laboratory analysis of 6 (10%) silt, trace (5%) mica schist, VOCs, SVOCs, metals and cyanide. - 26 wet, loose. Hydrocarbon staining and odor, sheen. 5 27 11/1 27.0-33.0 Very dark brown (10YR 2/1) SAND, S-14 3 2.0 2.0 11:10 NA 0.0 4.1 3.2 Hydrocarbon staining and odor, sheen. (SW), fine to coarse subrounded sand, little (12%) fine gravel, little 3 (10%) silt, trace (5%) mica schist, 28 wet, very-loose. 2 3 11/1 29 12:00 S-15 2.0 1.0 NA 0.0 0.0 NA Hydrocarbon staining and odor, sheen. 3 6 30 8 31 11/1 S-16 7 2.0 0.0 12:10 NA 0.0 0.0 NA No recovery due to running sands collapsing hole; sample readings from empty spoon. Unable to continue with hollow stem auger 8 advance. End drilling, begin conversion to mud-32 rotary drilling 8 33 11/2 33.0-41.0 Yellowish red (5YR 5/6) SANDY 10:55 0.0 S-17 5 20 0.5 NA 0.0 NA Complete conversion to mud-rotary drilling and GRAVEL (GW/SW), fine to medium resume drilling on 11/2. 5-3/8 inch ID tricone subrounded gravel, little (20%) silt, bit with 6.25-inch OD steel casing driven to 8 trace (5%) mica schist, wet, loose. keep boring open. 34 No evidence of MGP staining, odors or 8 residuals. 6 35 11/2 S-18 13 2.0 0.0 11:30 NA 0.0 0.0 NA Schist cobble jammed in shoe. No recovery; sample readings from empty spoon. 13 36 11 12 37 11/2 S-19 8 2.0 0.0 12:00 NA 0.0 0.0 No recovery; sample readings from empty spoon. 8

38

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### Page 4 of 7 **LOG OF SOIL BORING SB-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR READINGS Blows per inches Depth eet) feet) DESCRIPTION Space INTERVAL (ft bgs 39 11/2 33.0-41.0 Yellowish red (5YR 5/6) SANDY S-20 6 2.0 0.0 13:15 0.0 0.0 NA NA No recovery; sample readings from empty GRAVEL (GW/SW), fine to medium subrounded gravel, little (20%) silt, 9 trace (5%) mica schist, wet, loose. 40 10 14 41 11/2 41.0-51.0 Yellowish red (5YR 5/6) SAND (SW), S-21 14 2.0 0.5 13:20 NA 0.0 0.0 NA No evidence of MGP staining, odors or fine to coarse subrounded sand, little (15%) fine to medium gravel, little 11 (12%) silt, trace (5%) mica schist, wet, medium dense. 42 12 11 43 11/2 13:40 0.0 NA S-22 2.0 1.0 NA 0.0 11 14 44 17 12 45 11/2 S-23 12 2.0 0.0 14:05 NA 0.0 0.0 No recovery; sample readings from empty spoon. 46 17 12 47 11/2 S-24 20 20 0.0 14:20 NA 0.0 0.0 NA Cobble jammed in shoe. No recovery; sample readings from empty spoon. 21 Halt drilling for the day. 48 19 19 49 11/3 S-25 12 2.0 0.7 9:15 NA 0.0 0.0 NA Resume drilling on 11/3/06 19 50 14 16 51 11/3 51.0-53.0 Yellowish red (5YR 5/6) GRAVEL S-26 14 2.0 1.0 9:25 NA 0.0 0.0 No evidence of MGP staining, odors or (GW), fine to medium subangular residuals. gravel, some (20%) fine sand, trace 23 (5%) silt, wet, medium dense. 52 24

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### Page 5 of 7 **LOG OF SOIL BORING SB-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR READINGS Blows per inches Depth eet) (eet) Space INTERVAL **DESCRIPTION** (ft bgs 53 11/3 Yellowish red (5YR 5/6) SANDY 53.0-57.0 S-27 17 2.0 0.7 9:46 NA 0.0 0.0 NA No evidence of MGP staining, odors or GRAVEL (GW/SW), fine to medium residuals. subangular gravel and sand, trace 15 (5%) silt, (5%) coarse-sand, (2%) 54 mica schist, wet, medium dense. 14 7 55 11/3 Cobble jammed in shoe. No recovery; sample S-28 36 2.0 0.0 10:00 NA 0.0 0.0 NA readings from empty spoon. 12 56 12 11 57 11/3 57.0-65.0 Yellowish red (5YR 5/6) SANDY S-29 2.0 0.5 11:15 0.0 0.0 No evidence of MGP staining, odors or 10 NA NA GRAVEL (GW/SW), fine to medium residuals. subangular sand and gravel, little 15 (10%) silt, trace (5%) mica, wet, 58 medium dense. 15 12 59 11/3 S-30 11 2.0 0.7 11:30 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 60 8 9 61 11/3 S-31 2.0 12:30 0.0 12 1.5 NA 0.0 NA No evidence of MGP staining, odors or residuals. 15 62 14 10 63 11/3 S-32 12 2.0 8.0 12:40 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 17 64 8 11 65 65.0-71.0 Reddish brown (5YR 4/4) SILTY No evidence of MGP staining, odors or S-33 14 2.0 1.5 14:00 NA 0.0 0.0 SAND (SM) fine rounded sand, some residuals. (25%) silt, trace (10%) medium to 14 coarse sand, trace (2%) mica schist, 66 wet, medium dense. 17 20

# Page 6 of 7 LOG OF SOIL BORING SB-04

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PROJECT NAME Canal and Hest	er Street Former MGP Sites		0-849-0			TION	NO.	CMX PI	ROJECT 99801	NO					HDR/LM 51006	S PROJECT NO
		nterval		ater	bo.		lo.	9 .	Sai	mples		l		GANIC VA		
INTERVAL	DESCRIPTION	Sample II	Depth (ft bgs)	Groundw	Graphic Log	Stratum	Sample No.	Blows per 6 inches	Driven (feet)	Recovered (feet)	Time Sampled	Dye Test Result	Bkg	Sample	Head Space	REMARKS
65.0-71.0	Reddish brown (5YR 4/4) SILTY SAND (SM) fine sand, some (25%) silt, trace (5%) fine gravel, trace (2%) mica schist, wet, medium dense.		- 67 -  - 68 -				S-34		2.0	2.0	11/3 15:00		0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
	Below 67 feet no gravel, trace (10%) medium to coarse sand.		- 69 -					23			11/3					
							S-35	19 31	2.0	2.0	15:50	NA	0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
			- 70 -					34 25								Halt drilling at 70 feet on 11/3/06
71.0-75.0	Reddish brown (5YR 4/4) SAND		- 71 -				S-36		2.0	1.0	11/6 10:00	NA	0.0	0.0	NA	Resume drilling at 70 feet on 11/6/06
	(SW) fine to coarse subrounded sand, little (15%) silt, trace (5%) mica schist, wet, medium dense.		 - 72 -					20								No evidence of MGP staining, odors or residuals.
								24 30								
			- 73 -				S-37		2.0	1.5	11/6 10:25	NA	0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
			- 74 -					29								
			- 75 -					21			11/6					
75.0-81.0	Reddish brown (5YR 4/4) SILTY SAND (SM) fine sand, some (25%) silt, little (15%) coarse sand, trace						S-38		2.0	1.0	11:00	NA	0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
	(5%) mica schist, wet, dense.		- 76 -					33								
			- 77 -					41			11/6					
			 - 78 -				S-39	34 38 42	2.0	1.5	11:30	NA	0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
			- 79 -					40			11/6					
	No coarse sand below 79 feet.						S-40	13	2.0	1.5	13:45	NA	0.0	0.0	NA	No evidence of MGP staining, odors or residuals.
			- 80 -					35								
								42								

### Page 7 of 7 **LOG OF SOIL BORING SB-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR READINGS Blows per inches Depth feet) (eet) INTERVAL DESCRIPTION Space (ft bgs 81 11/6 81.0-90.0 Reddish brown (5YR 4/4) SILT (ML) S-41 35 2.0 1.8 14:00 NA 0.0 0.0 NA No evidence of MGP staining, odors or some (20%) fine sand, little (10%) residuals. mica schist, wet, very hard. 41 82 49 54 83 11/6 S-42 12 2.0 1.8 15:45 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 47 84 37 48 Halt drilling at 85 feet on 11/6/06 85 11/7 S-43 2.0 10:40 0.0 0.0 Resume drilling at 85 feet on 11/7/06 12 1.5 NA NA No evidence of MGP staining, odors or residuals. 22 86 42 51 87 11/7 S-44 34 2.0 2.0 11:00 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 60 88 68 65 89 11/7 S-45 32 0.9 0.9 12:30 NA 0.0 0.0 NA No evidence of MGP staining, odors or residuals. 50/5 Drive casing to bedrock at 90 feet. 11/7 90 Dark bluish gray (N2) BEDROCK 89.9-95.0 NA 5.0 4.5 14:30 NA NA NA S-46 NA Switched to rock coring: advanced 5-foot core (Gneiss schist), striations of calcium with NX rock coring 2-inch core barrel from 90 carbonate/ gypsum inclusions, five to 95 feet. No evidence of MGP staining, odors fractures dip 70 to 90 degrees from or residuals in bedrock formation. vertical with slight iron 91 staining/oxidation 92 93 94

End of core at 95 feet below grade

V:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Appendices\App E - Boring and Well Logs\[Hester SB05.xls]Page 1

v:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Appendices\App E - Boring and Well Logs\[Hester SB06MW03.xls]Page 1

# Page 2 of 3

# LOG OF SOIL BORING SB-06/MW-03

PROJECT NAME Canal and Hes	ster Street Former MGP Sites		CLIENT A 0-849-0			I NOI	NO.	CMX PI		Г NO					HDR/LM: 51006	S PROJECT NO
		ıval		. [		J				nples			4	SANIC VA	POR	
		Sample Interval	Depth	ndwate	Graphic Log	Ē	Sample No.	Blows per 6 inches	۲	Recovered (feet)	pel	est	Bkg	READING Sample	S Head	
INTERVAL	DESCRIPTION	Samp	(ft bgs)	Grour	Graph	Stratum	Samp	Blows	Driven (feet)	Recov (feet)	Time Sampled	Dye Test Result	Dkg	Sample		REMARKS
11.0-13.0	Reddish brown (5YR 4/4) SAND, (SW) fine to coarse subrounded sand, little (15%) fine to medium gravel, trace (2%) silt, trace (2%) mica schist, wet, loose.  Wet at 11.8 feet.		- 11 -  - 12 -				S-6	5 6 5	2.0	1.5	9:00	NA	0.0	0.0	0.8	At 8:40 collected soil sample SB06A from 11.3 to 11.8 feet below grade, six inch interval above apparent water table for laboratory analysis of VOCs SVOCs, metals and cyanide.  Water table subsequently determined to be greater than 18 feet deep. Shallow saturated soils observed on this date likely due to heavy rain.Oily
13.0-17.0	Reddish brown (5YR 4/4) SAND, (SW) fine to coarse subrounded sand, little (15%) fine to medium gravel, trace (5%) silt, trace (2%) mica schist, wet, very loose.		- 13 -  - 14 - 				S-7	4 5 3	2.0	1.8	09:05	NA	0.0	26.5	30.0	black staining in last six inches. Creosote odor.  Collected sample FP-2 for fingerprint analysis, sample bottles destroyed in transit. Laboratory could not analyze.
			- 16 - - 16 - - 17 -				S-8	1/18" WOR	2.0	0.0	09:15	NA	NA	NA	NA	Augers slip 2 feet in void
17.0-19.0	Dark grayish brown (10YR 4/2) SAND (SW), fine to medium subrounded sand, some (20%) silt, wet, medium dense.		 - 18 - 				S-9	WOR 10 14 25	2.0	2.0	09:25	NA	0.0	40.2	51.0	Creosote odor.  At 9:30 collected soil sample SB06B from 18.5 to 19.0 feet below grade, (highest PID reading) for laboratory analysis of VOCs SVOCs, metals and cyanide.
19.0-20.5	Dark grayish brown (10YR 4/2) SILT (OL), clayey silt, wet, medium dense.  Dark grayish brown (10YR 4/2)		- 19 -  - 20 -				S-10	10 11	2.0	2.0	09:30	NA	0.0	3.3	NA	Slight creosote odor.
20.0 20.0	SAND (SW), fine to coarse subrounded sand, little (15%) fine to medium gravel, trace (5%) silt, trace (2%) mica schist, wet, medium dense.		- 21 -				S-11	9 10 11	2.0	2.0	09:45	NA	0.0	1.0	NA	Sheen on spoons beginning at 21 feet below grade. Creosote odor.
			- 23 - 24 - 25 -				S-12	6 6 8 10	2.0	1.5	09:55	NA	0.0	10.0	NA	Slight black staining with creosote odor beginning at 23 feet below grade.

# Page 3 of 3

# LOG OF SOIL BORING SB-06/MW-03

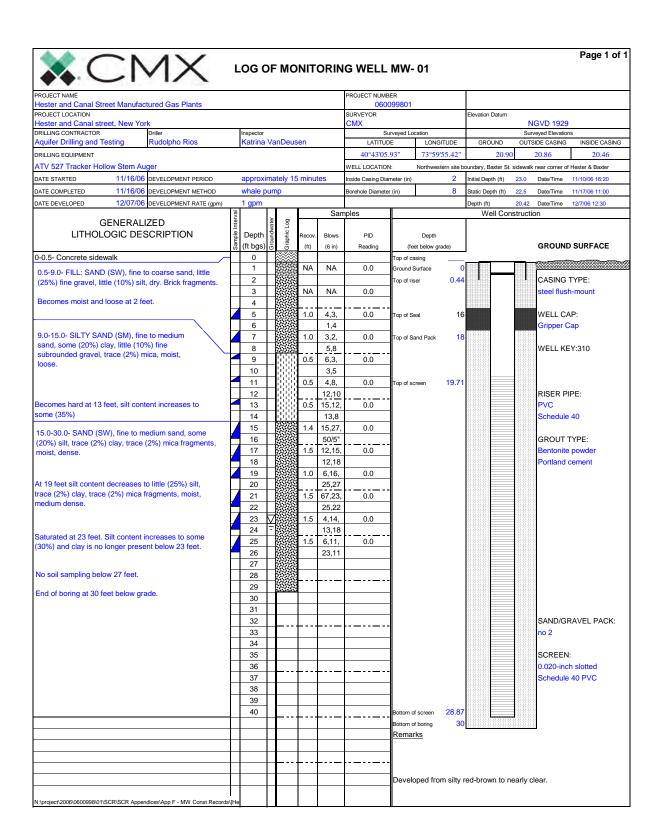
ROJECT NAME Canal and He	ster Street Former MGP Sites		CLIENT A 0-849-0			TION	NO.		ROJECT 99801	Г NO					HDR/LM: 51006	S PROJECT NO
		_								nples				SANIC VA	POR	
		Sample Interval	Depth	ndwate	Graphic Log	Ę	Sample No.	Blows per 6 inches	ے	Recovered (feet)	pele	est It	Bkg	READING Sample	S Head	
INTERVAL	DESCRIPTION	Samp	(ft bgs)	Grou	Grapl	Stratum	Samp	Blows	Driven (feet)	Reco (feet)	Time Sampled	Dye Test Result	Ding	Campio		REMARKS
25.0-27.0	Dark grayish brown (10YR 4/2) SAND (SW), fine to medium subrounded sand, little (10%) fine gravel, trace (5%) silt, trace (2%) mica schist, wet, loose.		- 25 -  - 26 -				S-13	5 3 4 3	2.0	2.0	10:15	NA	0.0	7.1	NA	Black stained soil, creosote odor, sheen.
27.0-32.0	Dark reddish brown (5YR 3/2) SAND (SW), fine to medium subrounded sand, little (10%) fine gravel, trace (5%) silt, trace (5%) mica schist, wet, loose.		- 27 -  - 28 -				S-14	6 7 7 7	2.0	1.5	10:20	NA	0.0	8.0	NA	Black stained soil, creosote odor, sheen.
	2-inch seam of concrete at 30 feet. Suspected grout intrusion associated with nearby subway tunnel.		- 29 -  - 30 - 				S-15	2 4 5 7	2.0	1.8	10:25	NA	0.0	3.2	NA	Black stained soil, creosote odor, sheen.
32.0-33.0	Dark reddish brown (5YR 3/4) SILTY SAND (SM), fine to medium subrounded silty sand, little (15%) silt, trace (5%) mica		- 32 -				S-16	5 6 7 7	2.0	1.8	10:40	NA	0.0	5.0 2.0 0.0	NA	No odors or sheen below 31.5 feet.
33.0-35.0	schist, wet, loose.  Dark reddish brown (5YR 3/4) SAND (SW), subrounded fne to coarse sand, little (10%) silt, trace (5%) mica schist, wet, loose.		- 33 - - 34 - - 35 -				S-17	5 6 7 8	2.0	1.5	10:50	NA	0.0	0.0	NA	No odors or sheen or staining.  Boring collapses at 35 feet due to running sands. This boring completed as MW-03 screened from 8 to 18 feet.
	End of boring at 35 feet.		- 36 - - 37 - - 38 - - 39 -													

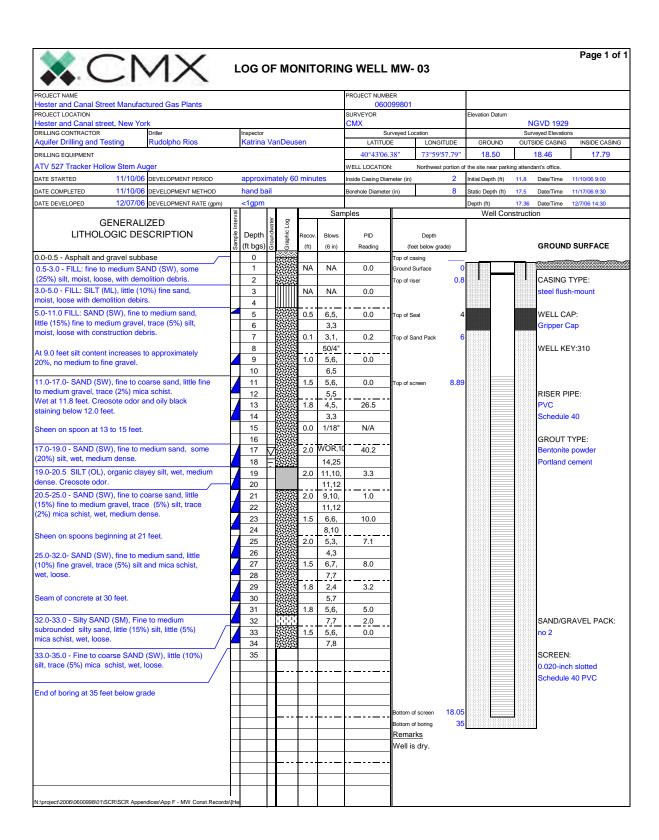
I:\project\2006\0600998\01\05 Reports\SCR-Hester\SCR H Appendices\App E - Boring and Well Logs\[Hester SB07MW04.xls]Page 1

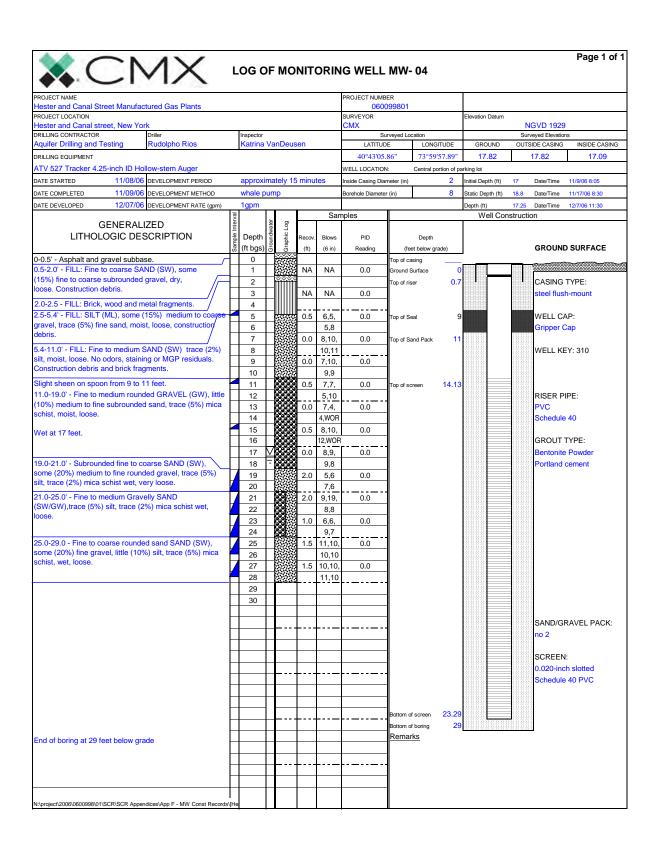
### Page 2 of 3 **LOG OF SOIL BORING SB-07/MW-04** CLIENT AUTHORIZATION NO. HDR/LMS PROJECT NO PROJECT NAME CMX PROJECT NO Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 51006 Samples ORGANIC VAPOR READINGS Blows per Graphic L Test Depth Bkg Sample Head Recov (feet) feet) Dye. INTERVAL DESCRIPTION (ft bgs REMARKS Space 11/8 11.0-19.0 Dark grayish brown (10YR 4/2) No evidence of odors, staining or S-6 7 2.0 0.5 0.0 0.0 NA 11:15 NA GRAVEL (GW), fine to medium MGP residuals. rounded gravel, little (10%) fine to medium subrounded sand, trace 12 (5%) mica schist, moist, loose. 5 10 13 11/8 S-7 7 20 0.0 11:30 NA PID reading from empty split spoon NA NA NA 4 4 WOR 15 11/8 S-8 8 2.0 0.5 11:50 NA 0.0 0.0 NA No evidence of odors, staining or MGP 10 16 12 Halt drilling for the day at 17 feet below grade due to heavy rain. WOR 17 11/9 Resume drilling at 17 feet on 11/09/06. Becomes wet at 17 feet based on S-9 08:05 0.0 2.0 0.0 0.0 8 NA NA drill cuttings and split-spoon No recovery due to cobble in shoe; instrument sampler reading from empty split-spoon. 9 18 Drill cuttings are wet. Saturated water table at 9 17 feet below grade. No material available for soil sample collection at six inches above 8 water table. 11/9 19 19.0-21.0 Dark grayish brown (10YR 4/2) 20 2.0 08:20 0.0 0.0 S-10 5 NA NA No evidence of odors, staining or MGP SAND (SW), fine to coarse subrounded sand, some (20%) fine 6 to medium rounded gravel, trace 20 (5%) silt, trace (2%) mica schist, wet, very loose. 7 6 21 11/9 21.0-25.0 Dark yellowish brown (5YR 4/4) 2.0 08:30 S-11 9 2.0 NA 0.0 0.0 NA No evidence of odors, staining or MGP Gravelly SAND (SW/GW), fine to medium rounded gravel and sand, 19 trace (5%) silt, trace (2%) mica 22 schist wet, loose. 8 8 23 11/9 S-12 6 20 1.0 08:40 NA 0.0 0.0 Slight sheen, and staining at 23.5 to 24 feet NA 6 24 At 8:45 collected soil sample SB07A from 23.5 to 24 feet below grade where staining 9 was observed for analysis of VOCs, SVOCs, metals and Cyanide.

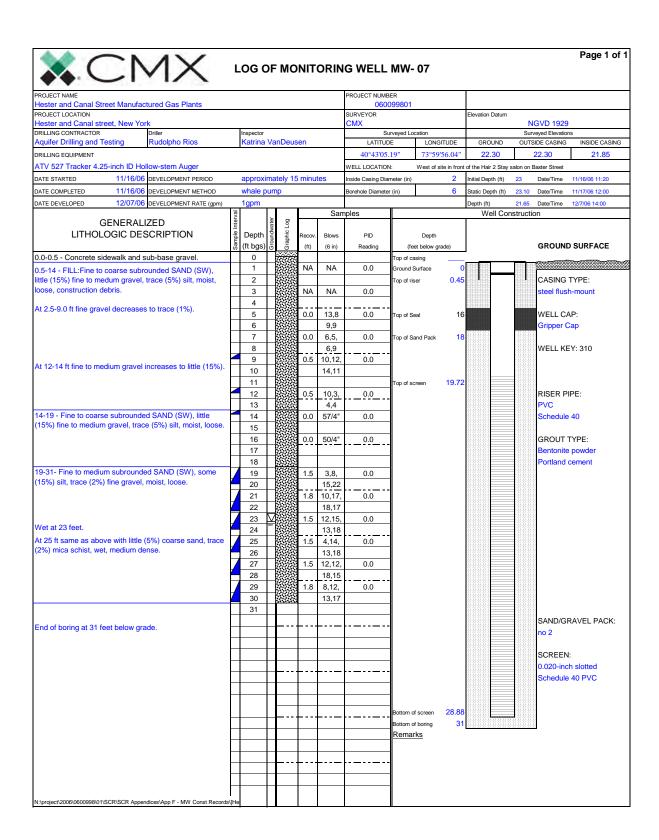
### Page 3 of 3 **LOG OF SOIL BORING SB-07/MW-04** CLIENT AUTHORIZATION NO. CMX PROJECT NO HDR/LMS PROJECT NO PROJECT NAME Canal and Hester Street Former MGP Sites 0-849-06-00002 060099801 Samples ORGANIC VAPOR Graphic Log READINGS Blows per Dye Test Result Depth Bkg Sample Head Recovi (feet) INTERVAL DESCRIPTION (ft bgs REMARKS Space 25 25.0-29.0 Reddish-brown (5YR 4/4) SAND S-13 11 2.0 1.5 8:45 NA 0.0 0.0 NA No evidence of odors, staining or MGP (SW), fine to coarse rounded sand, residuals. some (20%) fine gravel, little (10%) 10 silt, trace (5%) mica schist, wet, - 26 loose. 10 10 27 11/9 09:00 0.0 This boring was completed as monitoring well 2.0 1.5 0.0 S-14 10 NA NA MW-04 with 10 feet of screen set from 13 to 23 feet below grade. 10 28 At 11:00 am collected soil sample SB07B 11 from 28-28.5 feet below grade for analysis of VOCs, SVOCs, metals and Cyanide. 10 29 End of boring at 29 feet below grade 30 31 32 33 34 35 36 37 38

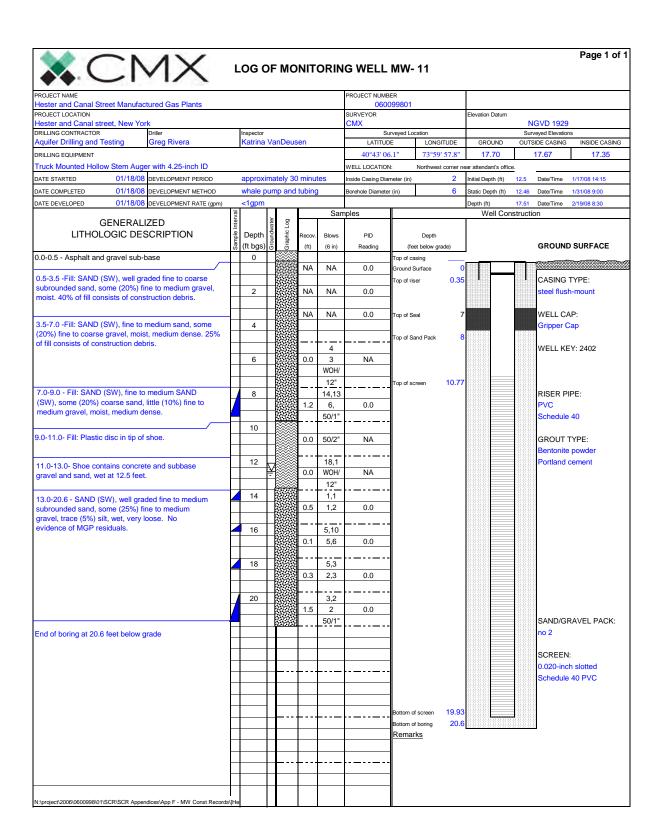
# APPENDIX F MONITORING WELL CONSTRUCTION RECORDS

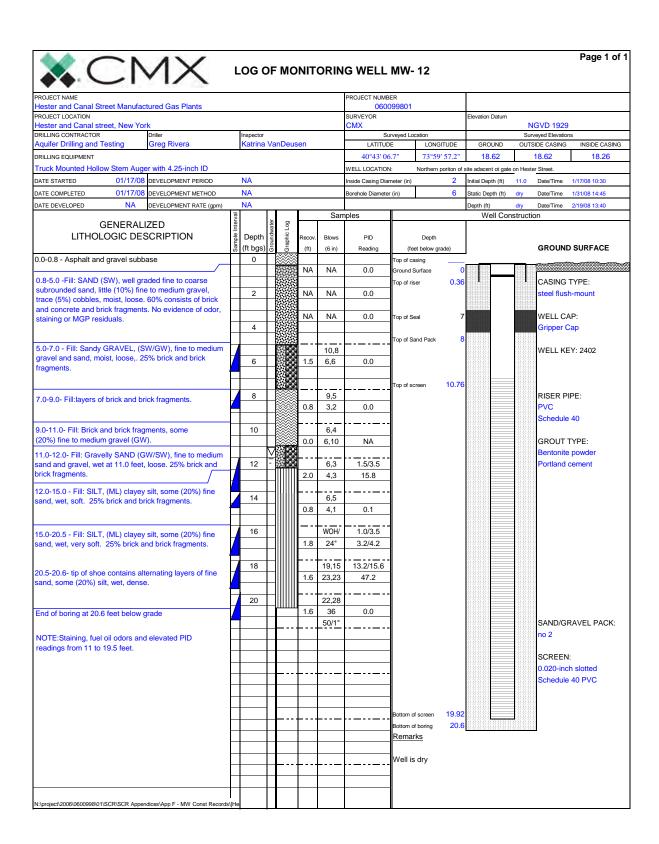












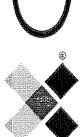
# APPENDIX G WATER LEVEL GAUGING DATA

SITE: Former Canal & Hester MGP

DATE: December 7, 2006

WEATHER: Sunny, breezy, low 30 degrees F

FIELD
PERSONNEL: Katrina VanDeusen





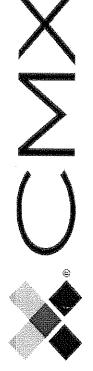
		Remarks						 TOTAL TOTAL	Total Control of the	**************************************	**************************************	The state of the s	ministration and an analysis and a second an	TO THE TAXABLE THE TAXABLE TO THE TA				7.777700	THE PROPERTY OF THE PROPERTY O	THE PROPERTY OF THE PROPERTY O	
	Total Well	Depth	28.85	17.76	23.00	28.85															
	DNAPL	Thickness	NE	NE	NE	NE															
	Depth to	DNAPL	NE	NE	NE	W.															
g Data	Depth to	Water	20.42	17.36	17.25	21.65															
Gauging Data	LNAPL	Thickness	NE	NE	NE	NE															
	Depth to	LNAPL	빙	빙	Ä	NE															
	Reference	Point (1)	2	10	2	2															
	Measure	Time	12:30	14:30	11:30	14:00															
	윤	Reading	0	26.1	0	0															
	Monitoring Well	D	MW-01	MW-03	MW-04	MW-07											***************************************				

<sup>(1)</sup> Indicate measurement reference point, (IC) for inner well casing, or (O) for other, with description in remarks.

SITE: Former Canal & Hester MGP

DATE: January 24, 2007
WEATHER: Sunny, 30 degrees F

FIELD
PERSONNEL: Katrina VanDeusen



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		Remarks							A STATE OF THE PROPERTY OF THE		ALL THE PROPERTY AND ASSESSMENT OF THE PROPERTY OF THE PROPERT		THE REAL PROPERTY AND ADDRESS OF THE PROPERTY					The state of the s	***************************************	######################################	The state of the s			THE PROPERTY AND THE PR	
	Total Well	Depth	28.85	17.76	23.00	28.85																			
	DNAPL	Thickness	ШN	NE	빙	빙																			
	Depth to	DNAPL	JN	N.	빙	빙																			
g Data	Depth to	Water	20.87	16.90	17.72	22.21																			
Gauging Data	LNAPL	Thickness	NE	NE	Ŋ	NE																			
	Depth to	LNAPL	NE	빙	NE	NE																			
	Reference	Point (1)	೨	೦	IC	21																			
	Measure	Time	10:15	9:35	9:50	10:30																			
	음	Reading	0	11.6	0	0																			
	Monitoring Well	Q	MW-01	MW-03	MW-04	MW-07																			

<sup>(1)</sup> Indicate measurement reference point, (IC) for inner well casing, or (O) for other, with description in remarks.

SITE: Former Canal & Hester MGP

**DATE:** January 31, 2008

WEATHER: Sunny, breezy, low 30 degrees F

FIELD Tonya Albela PERSONNEL: Katrina VanDeusen





		Remarks							**************************************					***************************************				***************************************
						·		_										
	Total Well	Depth	28.85	17.76	23.00	28.85	20.00	20.00					 					
	DNAPL	Thickness	N	N	NE	NE	NE	NE										
	Depth to	DNAPL	NE	NE	N.	뮌	NE	NE										
g Data	Depth to	Water	23.73	dry	20.53	24.73	12.46	dry										
Gauging Data	LNAPL	Thickness	NE	NE	NE	NE	NE	Ä										
	Depth to	LNAPL	Ä	빙	NE	밁	NE	岁										
	Reference	Point (1)	೨	೧	IC	IC	21	) (										
	Measure	Time	11:00	2:30	13:02	12:15	9:00	2:45										
	믑	Reading	0	21	0	0	41.9	0										
	Monitoring Well	O O	MW-01	MW-03	MW-04	MW-07	MW-11	MW-12										

<sup>(1)</sup> Indicate measurement reference point, (IC) for inner well casing, or (O) for other, with description in remarks.

SITE: Former Canal & Hester MGP

DATE: February 19, 2008

WEATHER: Sunny, breezy, low 30 degrees F

FIELD Test America

PERSONNEL: Katrina VanDeusen



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**************************************		Remarks	***************************************						111111111111111111111111111111111111111	### ##################################			**************************************	The state of the s					***************************************					The state of the s		**************************************
	Total Well	Depth	28.85	17.76	23.00	28.85	20.00	20.00																		
	DNAPL	Thickness	빌	NE	NE	J.	¥	빙		- Aretes																
	Depth to	DNAPL	NE	NE	NE	NE	NE	NE																		
g Data	Depth to	Water	23.51	dry	20.89	22.95	17.51	dry																		
Gauging Data	LNAPL	Thickness	N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/	NE	NE	N.	NE	NE																		
	Depth to	LNAPL	Ы	R	빙	Ä	¥	NE																		
	Reference	Point (1)	C	)IC	J.	21	೨	10																		
	Measure	Time	14:50	13:35	15:15	15:00	8:30	13:40																		
	음	Reading	0	25	17	0	0	0																		
	Monitoring Well	۵	MW-01	MW-03	MW-04	MW-07	MW-11	MW-12																		

<sup>(1)</sup> Indicate measurement reference point, (IC) for inner well casing, or (O) for other, with description in remarks.

# APPENDIX H GROUNDWATER SAMPLING FORMS

1	
reet MGP	
+=	
Former Hester S	
41	

WEATHER: Sunny, 33's F **DATE:** 2/19/2008

FIELD PERSONNEL: Steve&Tom STL NanDeusen

0 AMBIENT PID (ppm): OPEN WELL PID (ppm):

INITIAL DEPTH TO H20:

PUMP INTAKE DEPTH:

DEPTH TO water w/PUMP IN PLACE NR TOTAL PURGE VOL: 0 8:40 PUMP START TIME:

11:57

PUMP STOP TIME:

18.9 17.51 WELL PERMIT NUMBER: NA SCREEN INTERVAL: 10 to 20 MONITORING WELL ID: MW-11

TOTAL PURGE TIME: 6 hours

ANALYZED FOR: TCL VOC+10, TCL SVOC+20, TAL Metals, Total CN

gallons

Ξ

(ft TOC):

					Specific	cific	Redox	 yox	Dissolved	olved					Volume		
TIME	бі	buil	Ŧ	т.	Condu	Conductivity	Potential	ntial	Oxygen	.gen	Turk	Turbidity	Temp	Temperature	of Water	Pumping	Water
	ıigıı		(pH units)	nits)	(mS/cm)	/cm)	(mv)	٧)	(mg/L)	3/(*)	N.	(NTU)	degr.	(degrees C)	Removed	Rate	Elevation
	nЧ		Reading	+/- 0,1(1)	Reading	+/- 3%(2)	Reading	+/- 10 mv <sup>(3)</sup>	Reading	+/- 10% (4)	Reading	+/- 10% (4)	Reading	+/- 3%(2)	(gal)	(gall/min)	(# TOC)
8:40	×		7.92	NA	1190	VAN	86.3	NA	0.1	NA	2400	NA	7.8	AN	0.2	NA NA	17.51
10:49	×		7.7	0.22	1126	94.62	67.7	-18.6	0.14	140.00	4800	200.00	10.2	130.77	0.15		17.54
11:57	×		8.18	-0.48	941	83.57	81.6	13.9	0.35	250.00	3624	75.50	142	1392.16	0.20		17.52
13:30	×																18.19
14:00	×																18.3
14:25	×																18.7
14:40		×															***************************************
	1_											- Proposition of the Party of t					
		İ															
						•											
						****						-					
																***************************************	
	$\rfloor$																
												AND DESCRIPTION OF THE PERSON					
COMMENTS:		Sittec	d up, too muci	h silt, no rech	Sitted up, too much silt, no recharge, removing as much volume as possible through hand bailing as per JS (0.55 gal).	g as much volt	ume as possi	ble through ha	and bailing as	Der. IS (0.55	(len					-	

(1) pH - Stable when 3 consecutive readings are +/- 0.1.

(2) Specific Conductivity or Temperature - Divide current reading by previous reading, multiply by 100. Stable when 3 consecutive readings are between 97 and 103%.

(3) REDOX Potential - Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 my, redox potential is considered stabilized.

(4) Dissolved Oxygen or Turbidity - Calculate % by dividing current reading by previous reading and multiplying by 100. Stable when 3 consecutive readings are between 90 and 110%.

MGP	
Street	
lester	-
ormer F	, married 1
ME F	I

WEATHER: Sunny, 30's F **DATE:** 1/31/2008

FIELD PERSONNEL: VanDeusen/Aibela

0 AMBIENT PID (ppm):

OPEN WELL PID (ppm):

INITIAL DEPTH TO H20: DEPTH TO water w/PUMP IN PLACE NR (ft TOC): 41.9

9:00 10:20

PUMP START TIME: PUMP STOP TIME:

12.46 18

SCREEN INTERVAL: 10 to 20

PUMP INTAKE DEPTH;

MONITORING WELL ID: MW-11

WELL PERMIT NUMBER: NA

TOTAL PURGE TIME: 39 minutes

ANALYZED FOR: TCL VOC+10, TCL SVOC+20, TAL Metals, Total CN 25 to 35 TOTAL PURGE VOL:

gallons

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|          |  |   | 1  | 1   | 1   
   
   
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  | _  | T   | $\overline{}$  | η-   | T  |  
  | 1   | 1  | η                                       | т  | _  | 1   | _  | <del></del>  
   | -T   | т  | _  | _                  | _  |
|----------|--|---|--|---
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--	--	--	--------------------	--	
Water	Elevation	(# TOC)	- 03	.03	-03
   
   
   | - 0.3  | .03  | -03  | - 0.3  | - 0.3   
  | -03  | -03   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  | VAPORE V PROMINANT |  |
| Pumping  | Rate   | (gall/min)  | NA   | 1   |   
   
   
   | 7  | -  | -  | -  | _   
  |  |   |  |  |  |  
  |   |  |   |  |  |   |  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  
   |  |  |  |                    |  |
| of Water | Removed  | (dal)   | ĄZ   | 0   | 5   
   
   
   | 5  | 5  | 5  | 5  | 3   
  | m  | 6   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    | <del> </del>   |
| rature   | es C)  | +/- 3%(2)   | Ž  | 109.97  | 97.66   
   
   
   | 95.20  | 84.96  | 107.32   | 103.69   | 97.69   
  | 100.09   | 100 09  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| Тетре    | (degree  | Reading   | 11.64  | 12.8  | 12.5  
   
   
   | 11.9   | 10.11  | 10.85  | 11.25  | 10.99   
  | 11.00  | 11.01   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| idity    | (n.  | +/- 10% (4)   | NA   | -8.05   | 100.00  
   
   
   | 100.00   | 100.00   | 100.00   | 100.00   | 100.00  
  | 100.00   | 100.00  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| Turbi    | TS)  | Reading   | 62.1   | -5.0  | -5.0  
   
   
   | 5.0  | -5.0   | -5.0   | -5.0   | -5.0  
  | -5.0   | -5.0  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| het      | (7)  | +/- 10% (4)   | ĄN   | 51.69   | 147.44  
   
   
   | 120.00   | 130.96   | 93.56  | 53.49  | 95.39   
  | 101.33   | 99.29   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| Оху      | gm)  | Reading   | 16.6   | 8.58  | 12.65   
   
   
   | 15.18  | 19.88  | 18.60  | 9.62   | 9.75  
  | 9.88   | 9.81  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  | The state of the s |  |                    |  |
| ntial    | 3  | +/- 10 mv <sup>(3)</sup>  | Ą  | 96-   | -14   
   
   
   | 12   | 7-   | 9  | -3   | 5   
  | 4  | 0   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| Pote     | L)   | Reading   | 126  | 30  | 16  
   
   
   | 28   | 27   | 33   | 30   | 35  
  | 39   | 36  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| ctivity  | cm)  | +/- 3%(2)   | NA   | 101.94  | 95.25   
   
   
   | 109.63   | 103.33   | 117.30   | 106.00   | 98.06   
  | 101.90   | 103.74  |  | 111000000  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| Condi    | /Sm)   | Reading   | 0.310  | 0.316   | 0.301   
   
   
   | 0.330  | 0.341  | 0.400  | 0.424  | 0.420   
  | 0.428  | 0.444   |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
|          | ınits)   | +/- 0.1(1)  | ΑΝ   | 4.3   | -0.02   
   
   
   | -0.08  | -0.12  | -0.06  | 0.03   | -0.04   
  | 0.05   | -0.08   | **************************************   |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
| <u> </u> | ) Hd)  | Reading   | 7.74   | 9.08  | 9.10  
   
   
   | 9.18   | 9.30   | 9.36   | 9.33   | 9.37  
  | 9.32   | 9.40  |  |  |  | | |
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
|          |  |   |  | $\int$  | -   
   
   
   | -  | -  |  |  | $\prod$   
  |  |   | ×  |  |  | Ţ  
  | _   |  | 1                                       |  |  |   |  |  
   |  |  |  |                    |  |
| TIME     | 160  | 1   |  | 9:38 x  | 9:43 x  
   
   
   | 1  | 9:58 x   | 10:03 ×  | 10:08 ×  | | | | | | | | | | | | | | | | | | | | | | | | | | |
  | 1  | 10:17 x   | 10:20  |  |  |  
  |   |  |   |  |  |   |  |  
   |  |  |  |                    |  |
|          | 을 을 위 Conductivity Potential Oxygen Turbidity Temperature of Water Pumping | E         PH         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           E         (PH units)         (mS/cm)         (my)         (mg/L)         (NTU)         (degrees C)         Removed         Rate | Productivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           Productivity         (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (NTU)         (degrees C)         Removed         Rate           Days         A Reading         4/- 3% <sup>(2)</sup> Reading         4/- 10 mv <sup>(3)</sup> Reading         4/- 10 mv <sup>(4)</sup> Reading         4/- 10% <sup>(4)</sup> Reading         4/- 3% <sup>(2)</sup> (gall/min) | Policitis         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           Policitis         (MI)         (MI)         (MI)         (MI)         (MI)         (Mater         Pumping           Policitis         (MI)         (MI)         (MI)         (MI)         (MI)         (MI)         (Mater         Pumping           Main         Main | Policity         Example (a)         Policity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           Policity         (mS/cm)         (mS/cm)         (my/L)         (mg/L)         (mg/L) <td>Example 1         Postential Conductivity         Potential Potential         Oxygen         Turbidity         Temperature         of Water Pumping         Pumping           Example 2         (pH units)         (mS/cm)         (my)         (my)         (mg/L)         (kTIL)         (dsgres C)         Removed         Reterons           X         X         7.74         NA         1.26         NA         16.6         NA         62.1         NA         11.64         NA         NA         NA           X         9.08         -1.34         0.316         101.94         30         -96         8.58         51.69         -5.0         -8.05         12.8         109.97         0         1           X         9.08         -0.02         0.301         95.25         16         12.65         147.44         -5.0         100.00         12.5         97.66         5         1</td> <td>Example 1         Pole Metric (ms/cm)         Folential (ms/cm)         Potential (ms/cm)         Potential (ms/cm)         Oxygen (ms/cm)         Temperature (ms/cm)         of Water (ms/cm)         Pumping (ms/cm)         Pu</td> <td>Exposition (a) Figure (b) Found (c) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c</td> <td>End (pH units)         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           End (pH units)         (mS/cm)         (mS/cm)         (my)         (mg/L)         (NTU)         (dgrees C)         Removed         Removed         Rate           X         7.74         NA         1.26         NA         1.66         NA         62.1         NA         1.164         NA         NA         NA           X         9.08         -1.34         0.310         NA         1.26         NA         62.1         NA         1.164         NA         NA</td> <td>g branch and conductivity         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           g branch and collection of Mark and collection o</td> <td>Exacting by Lands (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mperature of Water of Malping)         (mS/cm)         (mS/cm)         (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mS/cm)         (mS/cm)</td> <td>g) 5/10         PH units)         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           5. S and based bas</td> <td>E         HOLITIS         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           E         (pH units)         (mS/cm)         (mS/cm)         (myL)         (mg/L)         (MTU)         (degrees C)         Removed         Pumping           A         Reading         4+-0.1<sup>(1)</sup>         Reading         4+-10% (4)         Reading         4+-10% (4)         Reading         4-1.3%(2)         Removed         Removed         Repair           X         7.74         NA         0.310         NA         126         NA         62.1         NA         11.64         NA         NA</td> <td>Exprincial bits of polar (in polar)         Conductivity (in polar)         Potential (myll)         Cxygen (myll)         Turbidity (myll)         Temperature (degrees C)         of Water (pumping)         Pumping (all minimal)           2. Social conductivity         (myll)         &lt;</td> <td>  Fig.   Fig.   Fig.   Fig.   Fig.   Formula   /td> <td>E/S         PH         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           0.0         1.0         (m3/cm)         (m3/cm)</td> <td>E branch (b) a conductivity         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         (ms/cm)</td> <td>  Fig. 10   Fig.</td> <td>g b d b d b d b d b d b d b d b d b d b</td> <td>β (β) (β) (β) (β) (β) (β) (β) (β) (β) (β</td> <td>  Fig. 2   Control   Con</td> <td>  Fig.   Fig.   Charles   /td> <td>β (β (β) (β) (β) (β) (β) (β) (β) (β) (β)</td> <td>  Charactering   Char</td> <td>  Particular   Conductivity   Potential   Conductivity   Potential   Canductivity   Potential   Canductivity   Potential   Canductivity   Can</td> <td>  Charles    Charles </td> <td>  Fig.   Fig.   Comparison   Co</td> <td>  Part</td> <td>  Contact   Cont</td> | Example 1         Postential Conductivity         Potential Potential         Oxygen         Turbidity         Temperature         of Water Pumping         Pumping           Example 2         (pH units)         (mS/cm)         (my)         (my)         (mg/L)         (kTIL)         (dsgres C)         Removed         Reterons           X         X         7.74         NA         1.26         NA         16.6         NA         62.1         NA         11.64         NA         NA         NA           X         9.08         -1.34         0.316         101.94         30         -96         8.58         51.69         -5.0         -8.05         12.8         109.97         0         1           X         9.08         -0.02         0.301         95.25         16         12.65         147.44         -5.0         100.00         12.5         97.66         5         1 | Example 1         Pole Metric (ms/cm)         Folential (ms/cm)         Potential (ms/cm)         Potential (ms/cm)         Oxygen (ms/cm)         Temperature (ms/cm)         of Water (ms/cm)         Pumping (ms/cm)         Pu | Exposition (a) Figure (b) Found (c) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c | End (pH units)         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           End (pH units)         (mS/cm)         (mS/cm)         (my)         (mg/L)         (NTU)         (dgrees C)         Removed         Removed         Rate           X         7.74         NA         1.26         NA         1.66         NA         62.1         NA         1.164         NA         NA         NA           X         9.08         -1.34         0.310         NA         1.26         NA         62.1         NA         1.164         NA         NA | g branch and conductivity         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           g branch and collection of Mark and collection o | Exacting by Lands (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mperature of Water of Malping)         (mS/cm)         (mS/cm)         (mS/cm)         (mS/cm)         (mS/cm)         (mg/L)         (mg/L)         (mT/L)         (mS/cm)         (mS/cm) | g) 5/10         PH units)         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           5. S and based bas | E         HOLITIS         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           E         (pH units)         (mS/cm)         (mS/cm)         (myL)         (mg/L)         (MTU)         (degrees C)         Removed         Pumping           A         Reading         4+-0.1 <sup>(1)</sup> Reading         4+-10% (4)         Reading         4+-10% (4)         Reading         4-1.3%(2)         Removed         Removed         Repair           X         7.74         NA         0.310         NA         126         NA         62.1         NA         11.64         NA         NA | Exprincial bits of polar (in polar)         Conductivity (in polar)         Potential (myll)         Cxygen (myll)         Turbidity (myll)         Temperature (degrees C)         of Water (pumping)         Pumping (all minimal)           2. Social conductivity         (myll)         < | Fig.   Fig.   Fig.   Fig.   Fig.   Formula   Formula | E/S         PH         Conductivity         Potential         Oxygen         Turbidity         Temperature         of Water         Pumping           0.0         1.0         (m3/cm)         (m3/cm) | E branch (b) a conductivity         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         Conductivity         Potential (ms/cm)         (ms/cm) | Fig. 10   Fig. | g b d b d b d b d b d b d b d b d b d b | β (β) (β) (β) (β) (β) (β) (β) (β) (β) (β | Fig. 2   Control   Con | Fig.   Fig.   Charles   Charles | β (β (β) (β) (β) (β) (β) (β) (β) (β) (β) | Charactering   Char | Particular   Conductivity   Potential   Conductivity   Potential   Canductivity   Potential   Canductivity   Potential   Canductivity   Can | Charles     | Fig.   Fig.   Comparison   Co | Part               | Contact   Cont |

COMMENTS: Silted up, had to restart due to pump shutdown, fixed pump, surged column. No pumping from 9:05 to 9:32. (1) pH - Stable when 3 consecutive readings are +/- 0.1,

(3) REDOX Potential - Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 mv, redox potential is considered stabilized. (2) Specific Conductivity or Temperature - Divide current reading by previous reading, multiply by 100. Stable when 3 consecutive readings are between 97 and 103%.

(4) Dissolved Oxygen or Turbidity - Calculate % by dividing current reading by previous reading and multiplying by 100. Stable when 3 consecutive readings are between 90 and 110%.

SITE: Former Hester Street MGP MONITORING WELL ID: MW-07 SITE: Former Hester Street MGP	DATE: 1/31/2008 WELL PERMIT NUMBER: NA	WEATHER: Sunny, 30's F SCREEN INTERVAL: 20 to 30	FIELD PERSONNEL: VanDeusen/Albela	PUMP INTAKE DEPTH: 28	0 INITIAL DEPTH TO H20: 24,73	DEPTH TO water w/PUMP I	(ft TOC); mi gailons	START TIME: 12:15 TOTAL PURGE VOL: 15:0 TOTAL PURGE TIME: 18 min	STOP TIME: 12:35 ANALYZED FOR: TCL VOC+10, TCL SVOC+20, TAL Metals Total CN
SITE: For	DATE: 1/	WEATHER: Sur	FIELD PERSONNEL: Vai		AMBIENT PID (ppm):	OPEN WELL PID (ppm):		PUMP START TIME:	PUMP STOP TIME:

	Pumping Water	Rate Elevation			0.83 ~ 0.3	0.83 - 0.3	0.83 -0.3	0.83 -0.3	0.83 -0.3	0.83 -0.3						Mild and the second sec					
Volume	of Water	Removed	(gal)	0	2.5	2.5	2.5	2.5	2.5	2.5							- Warning and American				
	Temperature	(degrees C)	+/- 3%(2)	ΑĀ	106.82	102.02	101.10	99.13	99.78	99.95								- Constitution of the Cons			
	Тетре	элбөр)	Reading	16.71	17.85	18.21	18.41	18.25	18.21	18.2		The state of the s									
	idity	U)	+/- 10% (4)	Ą	52.59	12.95	32.53	117.87	125.81	117.95				****				-			
	Turbidity	(NTU)	Reading	831	437	56.6	18,41	21.7	27.3	32.2											7
lved	gen	/L)	+/- 10% (4)	NA	81.51	94.77	98.16	100.14	101.15	99.43											-
Dissolved	Oxygen	(mg/L)	Reading	9.14	7.45	7.06	6.93	6.94	7.02	6.98											*
Xo <sub>1</sub>	ntial	()	+/- 10 mv <sup>(3)</sup>	AA	-22	-3	3	<b></b>	0	7											
Redox	Potential	(mv)	Reading		127	124	127	128	128	127											
aific	ctivity	cm)	+/- 3%(2)	NA	98.37	100.00	100.55	100.00	99.73	100.28											***************************************
Specific	Conductivity	(mS/cm)	Reading	0.368	0.362	0.362	0.364	0.364	0.363	0.364			-								W.
	Ŧ	units)	+/-0.1(1)	NA	0.41	90.0	0.04	0.01	0.01	-0.01											
	Hd	(pH units)	Reading	7.37	96.9	6.9	6.86	6.85	6.84	6.85											
	ßuil										×		1		 						
	TIME	nign	nd	12:15 ×	12:18 x	12:21 ×	12:24 ×	12:27 ×	12:30 ×	12:33 ×	12:40									***************************************	

(1) pH - Stable when 3 consecutive readings are +/- 0.1.
(2) Specific Conductivity or Temperature - Divide current reading by previous reading, multiply by 100. Stable when 3 consecutive readings are between 97 and 103%.
(3) REDOX Potential - Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are h-- 10 mv, redox potential is considered stabilized.
(4) Dissolved Oxygen or Turbidity - Calculate % by dividing current reading by previous reading and multiplying by 100. Stable when 3 consecutive readings are between 90 and 110%.

MONITORING WELL ID: MW-04	WELL PERMIT NUMBER: NA	SCREEN INTERVAL: 13 to 23	
SITE: Former Hester Street MGP	<b>DATE:</b> 1/31/2008	WEATHER: Sunny, 30's F	FIELD PERSONNEL: VanDeusen/Albela

WELL PERMIT NUMBER: NA

SCREEN INTERVAL: 13 to 23

PUMP INTAKE DEPTH: 21

INITIAL DEPTH TO H20: 20.53

0 0

AMBIENT PID (ppm): \_ OPEN WELL PID (ppm): \_ 13:02

PUMP START TIME: PUMP STOP TIME:

DEPTH TO water w/PUMP IN PLACE NR

(ft TOC): mi gallons

TOTAL PURGE VOL: 40.0



TOTAL PURGE TIME: 28 minutes

(IT LUC): ml gallons

TAL PURGE VOL: 40.0 TOTAL PUF

ANALYZED FOR: TCL VOC+10, TCL SVOC+20, TAL Metals, Total CN

			_	Sp∢	Specific	Re	Redox	Disso	Dissolved					Volume	·	
TIME			Hd	Cond	Conductivity	Pote	Potential	Oxygen	neb.	Turt	Turbidity	Tempe	Temperature	of Water	Pumping	Water
	iiga.		(pH units)	(mS	(mS/cm)	(mv)	(>(	(mg/L)	1/1)	(UTN)	ΓU)	удер)	(degrees C)	Removed	Rate	Elevation
		~	+/- 0.1(1)	Reading	+/- 3%(2)	Reading	+/- 10 mv <sup>(3)</sup>	Reading	+/- 10% (4)	Reading	+/- 10% (4)	Reading	+/- 3%(5)	(gal)	(gal/min)	(ft TOC)
13:02	×	7.13	NA	0.447	Ϋ́	-91	Ą	7.38	AN A	-5.0	NA	17.71	AN	0	Ą	- 0.3
13:07	×	6.77	0.36	0.438	97.99	-108	-17	1.68	22.76	89.3	-1786.00	18,06	101.98	7	1.4	- 0.3
13:12	×	6.76	0,01	0.438	100.00	-112	4-	1.57	93.45	68.8	40.77	18.09	100.17	4.2	1,4	- 0.3
13:15	×	6.76	0.00	0.438	100.00	-113	7	1.53	97.45	60.2	87.50	17.98	99.39	4.2	4.1	- 0.3
13:18	×	6.75	0.01	0.439	100.23	-113	0	1.51	98.69	59.5	98.84	18.1	100.67	4.2	1.4	- 0.3
13:21	×	6.74	0.01	0.440	100.23	-113	0	1.51	100.00	51.7	86.89	17.99	99.39	4.2	1.4	-0.3
13:24	×	6.74	00.00	0.441	100.23	-113	0	1.49	98.68	54.5	105.42	18	100.06	4.2	4,1	-0.3
13:27	×	6.74	0.00	0.441	100.00	-113	0	1.50	100,67	52.6	96.51	18.04	100.22	4.2	4.1	- 0.3
13:30	×	6.74	0.00	0.441	100.00	-113	0	1.50	100,00	52.9	100.57	18.01	99,83	4.2	4.	- 0.3
13:40	_×															- Committee of the comm
												, the state of the				
												***************************************				
												-		, , , , , , , , , , , , , , , , , , ,		
					-											
	-															
												***************************************				
															-	
																The state of the s
COMMENTS:		Fair recharge, turbidity decreases from murky orange-brown to clear	bidity decreaso	es from murk	y orange-brow	n to clear.					1			***************************************	7	
9	-	:				***************************************		***************************************			***************************************					

(i) pH - Stable when 3 consecutive readings are +/- 0.1.

(2) Specific Conductivity or Temperature - Divide current reading by previous reading, multiply by 100. Stable when 3 consecutive readings are between 97 and 103%.

(3) REDOX Potential - Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 my, redox potential is considered stabilized.

MGP	
lester Street	
Former He	

WEATHER: Sunny, 30's F **DATE: 1/31/2008** 

SCREEN INTERVAL: 20 to 30

MONITORING WELL ID: MW-01 WELL PERMIT NUMBER: NA

> FIELD PERSONNEL: VanDeusen/Albela AMBIENT PID (ppm):

0

OPEN WELL PID (ppm):

11:00 11:20

PUMP START TIME: PUMP STOP TIME:

28 23.73 Ē DEPTH TO water w/PUMP IN PLACE NR INITIAL DEPTH TO H20: (ft TOC): PUMP INTAKE DEPTH:

gallons

TOTAL PURGE TIME: 19 minutes

ANALYZED FOR: TCL VOC+10, TCL SVOC+20, TAL Metals, Total CN 19.0

TOTAL PURGE VOL:

	Water	Elevation	(ft TOC)	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3															
															-									
	Pumping	Rate	(gal/min)	Ϋ́	~-	-	-	<b>~</b> ~	-															
Volume	of Water	Removed	(gal)	AA	5	5	3	3	3	***************************************		*****					William   100   10							
	rature	es C)	+/- 3%(5)	NA	104.43	100.62	99.95	99.79	100.15	-							V							
	Temperature	(degrees C)	Reading	18.52	19.34	19.46	19.45	19.41	19.44															
	ilty	)) (r	+/- 10% (4)	ΑN	-3080.00	33.70	93.06	98.96	93.10															
	Turbidity	(NTU)	Reading	-5.0	154	51.9	48.3	47.8	44.5															
, ed	eu		+/- 10% (4)	NA	58.09	96.88	99.57	99.78	99.14															
Dissolved	Oxygen	(mg/L)	Reading	8.28	4.81	4.66	4.64	4.63	4.59															
×	tial	(	+/- 10 mv <sup>(3)</sup>	NA	18	13	4	2	2															
Redox	Potential	(mv)	Reading	80	86	11	115	117	119															
fic	fivity	m)	+/- 3%(2)	NA	98.74	100.32	100.96	100.32	100.31															
Specific	Conductivity	(mS/cm)	Reading	0.317	0.313	0.314	0.317	0.318	0.319															
	_	nits)	+/- 0.1(1)	NA	0.71	0.26	0.11	90:0	0.05											***************************************			***************************************	_
	펍	(pH units)	Reading	8.00	7.29	7.03	6.92	6.86	6.81									and the same of th				- International Control		
	Бијј									×									_				_	
	δι	iign	nd/	×	×	×	×	×	×						$\Box$	$\prod$	$\Box$		$\Box$		$\Box$			
	TIME			11:00	11:05	11:10	11:13	11:16	11:19	11:20														

(1) pH - Stable when 3 consecutive readings are +/- 0.1.

(2) Specific Conductivity or Temperature - Divide current reading by previous reading, multiply by 100. Stable when 3 consecutive readings are between 97 and 103%.

(3) REDOX Potential - Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 mv, redox potential is considered stabilized. (4) Dissolved Oxygen or Turbidity - Calculate % by dividing current reading by previous reading and multiplying by 100. Stable when 3 consecutive readings are between 90 and 110%.



## Well Purging/Sampling Form

				Section 1 - Ge	eneral Informa	ition			
				F. Weat G: Sam H. Sign:	pler: K. Van De	eezy 30 degrees eusen SD, V. Ga	iabrasi HDR		
			Sectio	n 2 - Purging	Calculation/Ir	nformation			
B. Free Pr C. Well De D. Depth fi	ading: Oppm oduct Thickness opth (from top of come top of casing from top of casing from top of casing Column Height (C	casing) (ft): 2 to top of sci	reen (ft): 20 feet	H. Ca	asing Volume I cell Volume (F ) otal number of otal purge volum otal purge volum otal polume Factor = 0 16 16 16 16	well (inches): 2 in Factor: 0.1632 x H)(gals.): 1.44 volumes to be pume (I x J)(gal): N.	ırged: Stabilizat	ion	
Purging N	lethod (Select O	ne): E	Bailer 🗌	Sub. Po	ımp ⊠ Ce	nt. Pump 🗌	Ot	ner:	
	Endpoint (Select	One); \	/olume 🗌	Time [	] Pa	rameter Stabiliza	tion 🛛 Tu	bidity 🗌	
N. Purge De		atad with /in-	strument type): Hor	25-1140 VAI-1-		0 M. 'D. D.			
J. Tield liles	asarements cone	cted with (in			id Measureme				
					ASUREMENTS			,,,,,	
Time	Purge Volume	Temp.	pH	DO mg/l	Spec. Cond.	Turbidity	Depth to Water	PID	COMMENTS
12:30	1.5	17.2	5.93	7.78	ms/c	NTUs	feet	ppm	
12:35					0.756	173	27	0	During Purge
12:35	1.5	17.7	5.89	7.68	0.755	179	27	0	During Purge
	1.5 2.0	17.9	5.88 5.89	7.65	0.758 0.761	175	27	0	During Purge
12:45	1 Z.U	17.9	3.69	7.62	∋ U./b1	177	27	0	During Purge

COMMENTS: good recharge, backed off by squeezing tubing to diminish to slower flow until stabilization achieved. Water went from murky red-brown to clear.



### Well Purging/Sampling Form

	The state of the s	## ***********************************		9 Sacti	ion 1 Ge	eneral Info	rmation	MW-04			hando de la companya
			haneer yee you want	Jeci	OII 1 - GE		mation		- In animalia	**************************************	
A. Company	CMX				E. Date:	12/7/06					
B. Client: Co	on-Edison		··· · · · · · · · · · · · · · · · · ·		F. Weat	her: Sunny	, breezy 30 degre	es F			
C. Project: <u>F</u>	lester Street For	mer MGP		_	G: Samı	pler: <u>K. Va</u>	n Deusen SD, V.	Galiabrasi HD	)R		
D. Location:	Manhattan, NY	·			H. Signa	ature <u>:</u>					
			Sec	tion 2 -	Purging	Calculatio	n/Information			·	
					G. Dia	ameter of t	he well (inches):	2 inches			
A. PID Rea	iding: 0ppm				H. Ca	asing Volur	ne Factor: 0.1632				
B. Free Pro	oduct Thickness	(ft): NA	***************************************		I. W	ell Volume	(F x H)(gals.); 0.9	94			
C. Well De	pth (from top of a	casing) (ft)	23.00		J. To	tal number	of volumes to be	purged: Sta	bilization		
D. Depth fr	om top of casing	to top of	screen (ft): 13 fee	<u>t</u>	K. To	tal purge v	olume (l x J)(gal)	: NA			
E. Depth fr	om top of casing	to water	ft): <u>17.25</u>				r = 0.041 (Well Diamet	er) <sup>2</sup>			
F. Water C	olumn Height (C	- E) (ft. <u>) 5</u>	i.75	······································	2" = 0.6 4" = 0.6 6" = 1.4 8" = 2.6	65 4 <b>7</b>			The state of the s		
L. Purging M	ethod (Select Or	ne):	Bailer 🗌		Sub. Pu	ımp 🛛	Cent. Pump 🔲		Other:		
M. Purging E	indpoint (Select	One):	Volume 🗌		Time [	J	Parameter Stabi	lization 🛚	Turbidity [		
N. Purge De										****	
O. Field mea	surements collec	cted with (	instrument type): I	Horiba U	I-10 Wate	r Quality M	onitor & MiniRae	***************************************	***************************************		
				Section	on 3 - Fie	ld Measur	ements				7
	Bures			FI		SUREME Spec	NTS AND UNITS	Donth	to		
Time	Purge Volume	Temp	). рН		DO	Cond		/ Wate		)	COMMENTS
		°C			mg/l	ms/c	NTUs	feet	ppr	n	
11:40	2.5	15.2	5.16		8.36	1.29	258	21	0		During Purge
11:45	2.5	15.3	5.18		8.00	1,27	238	21	0		During Purge
11:50	2.5	15.7	5.20		7.89	1.20	999	21	0		During Purge
11:55	2.5	16.0	5.21		7.91	1.20	999	21	0		During Purge
Гotal Purge Т	ime (minutes): 1	5 minutes									
「otal Purge V	olume (gals/liter	s):_about_	0 gallons		y.p						
Recovery: exc	cellent recharge		·		www.unr.r.						
COMMENTS:	good recharge	water wer	nt from murky red-	orown to	n clear						



	8						MW-07		
				Section 1 - Ge	neral Inforn	nation			
A. Company;	CMX			E. Date:	12/7/06	MARIA CALLA CA	The state of the s		
B. Client: Co	n-Edison			F. Weath	ner: <u>Sunny,</u>	breezy 30 degree	s F		
C. Project: H	ester Street For	mer MGP		_ G: Samp	ler <u>: K. Van</u>	Deusen SD, V. G	aliabrasi HDR		
D. Location: f	Manhattan, NY			H. Signa	ture <u>:</u>				
			Section	on 2 - Purging (	Calculation	/Information			·
B. Free Production C. Well Depth from E. Depth from F. Water Continued L. Purging Me	ding: 0ppm duct Thickness ( th (from top of c m top of casing m top of casing dumn Height (C	to top of screer to water (ft): 21 - E) (ft.) 7.2	ı (ft): 20 feet	— H. Ca — I. We — J. Tot — K. Tot	sing Volume (final number of sal number of sal purge volume Factor sal purge volume	e well (inches): 2 e Factor: 0.1632  = x H)(gals.): 1.18 of volumes to be plume (I x J)(gal): 1  = 0.041 (Well Diameter)  Cent. Pump	ourged: Stabiliza	ation  ther:	
N. Purge Dep		one, void		I THICK	<u>'</u>	arameter Stabiliz	ation [2]		
O. Field meas	urements collec	ted with (instrui	ment type): Ho	riba U-10 Water	Quality Mo	nitor & MiniRae P	ID		
	1			Section 3 - Fiel	····				
	Duran				SUREMEN' Spec.	TS AND UNITS	Depth to		_
Time	Purge Volume	Temp.	рН	DO	Cond.	Turbidity	Water	PID	COMMENTS
		°C		mg/l	ms/c	NTUs	feet	ppm	
14:00	1.3	17.3	5.82	7.60	0.691	999	20	0	During Purge
14:05	1.3	17.4	5.81	7.87	0.685	200	20	0	During Purge
14:10	1.3	17.1	5.82	7.88	0.684	197	20	0	During Purge
14:15	1.3	17.0	5.84	7.80	0.681	199	20	0	During Purge
Total Purge Vo	ne (minutes): 18  Ilume (gals/liters  Illent recharge	s): about 5 gallo		own to clear.			- Valoria valini saa aata		
					~				



## MONITORING WELL DEVELOPMENT RECORD

SITE:			Con Edis	Con Edison Former Hester Works	· Hester M	Vorks				***************************************	CONSUL	CONSULTING FIRM:		CMX			Sheet 1 of 1
DATE:			January 18, 2008	18, 2008							FIELD PE	FIELD PERSONNEL:		K.VanDeusen (CMX)	en (CMX)		
WEATHER:	ER:		Very cold	(mid teen	s) strong	Very cold (mid teens) strong eastern winds, sunn	ds, sunn)	·					•	Attach			***************************************
WELL NO.:	0::		MW-11		WELL P	WELL PERMIT NUMBER:		Not applicable	able								
PID/FID READINGS	REA	DINGS	AMBIENT AIR:	T AIR:		0	mdd	***************************************		PUMP INTAKE DEPTH:	AKE DE	oTH:				19 ft	feet from TOC
			OPEN W	OPEN WELL (Initial):	;;	0	mdd			<b>WATER E</b>	LEVATIO	N WITH F	UMP IN	WATER ELEVATION WITH PUMP IN PLACE (Initial):		6.65 ft	feet from TOC
		17/222222		***************************************						PUMP START TIME:	ART TIME	ψi				13:15	
	6		Hd	Spec. Cond.	Cond.	Redox	ox	Diss. Oxygen	kygen	Turbidity	dity	Temperature	ature	Volume			***************************************
u	uge		(standard Units)	(mS/cm)	(cm)	Potential (mV)	al (mV)	(mg/L)		(NTU)	 S	(degrees C)	Se C)	of Water	Pumping	Water	Drawdown
	լւմ Մա		Criterion=+0.1 SU	Criterion=±3%	n=+3%	Criterion=+10mV	=+10mV	Criterion=+10%	# <del>+</del> 10%	Criterion=+10%*	=+10%*	Criterion=+3%	1=+3%	Removed	Rate	Elevation	(feet)
TIME		1	Reading   Change   Reading	Reading	RPD	Reading Change	Change	Reading	GGA	Reading	RPD	Reading	RPD	(m)	(ml/min)	(ft from TOC)	Criterion <0.3
13:18 x	J	9.40	ΝΑ	0.729	ΝΑ	N/R	NA	10.18	ΑN	308	ΑΝ	11.8	AN		1.5		
13:21 ×	J	8.78	-0.62	0.687	-5.8%	N/R	NA	10.19	0.1%	363	17.9%	11.7	-0.8%	4	1.5		
13.24 x	_	8.71	-0.07	0.595	-13.4%	N/R	ΝΑ	10.61	4.1%	368	1.4%	11.9	1.7%	8	1.5		
13:27 ×	J	8.76	0.05	0.518	-12.9%	N/R	NA	10.60	-0.1%	672	82.6%	11.9	%0.0	16	1.5		
13:30 x	J	8.70	-0.06	0.467	-9.8%	N/R	NA	10.64	0.4%	302	-55.1%	11.9	%0.0	20	1.5		
13:33 ×		8.66	-0.04	0.441	-5.6%	N/R	NA	10.66	0.2%	215	-28.8%	12.1	1.7%	24	1.5		
13:36 ×		8.63	-0.03	0.451	2.3%	N/R	NA	10.68	0.2%	202	-6.0%	11.8	-2.5%	28	-	7-	
13:39 x		8.65	0.02	0.450	-0.2%	N/R	NA	10.69	0.1%	225	11.4%	11.9	%8.0	29	-		
13:42 ×		8.61	-0.04	0.436	-3.1%	N/R	NA	10.72	0.3%	222	-1.3%	12.0	%8.0	30			***************************************
13:45 x	J	8.59	-0.02	0.442	1.4%	N/R	NA	10.65	-0.7%	234	5.4%	12.0	%0.0	31	-		
13:48 x		8.58	-0.01	0.441	-0.2%	N/R	ΝΑ	10.60	-0.5%	232	%6:0-	12.1	%8.0	32	-	8.98	**************************************
				***************************************													***************************************

COMMENTS: Purged approximately 30 gallons of water, excellent recharge as DTW after purge 8.98 ftbgs, water murky brown to clear discharge (ReDox meter malfunction.)

# \* Criterion for Turbidity applies to values greater than 1 NTU

APPENDIX I
DISPOSAL RECORDS

opposer or cores of the Control Version of		45							4
NON-HAZARDOUS WASTE MANIFEST	Generator's US E	PAID No.		Manifes Document	70:4 2: PG	ige ji	BLI	22896	
Generator's Notes and Molling Address CONSOLT DYED EDISON 31-02 ZOTH AVENUE LONG ISL Conceptor's Phone ( 732 ) 577-5	CANADA CARLATA A BANADA	•			DI HES	RAGEDEN ECAL#( STER_ST #_YORK	<u> </u>	ずで ML STRE NY 10	
'ATCHYER' FROMSTATAL VAC BEF	WICE S	1 1 1 45			5 B A. T	ańsporter's F	hogoE	-8 <b>62</b> -22	graphic for the second
Transporter 2 Company Name			EPA ID Non	pher		onsporter's P			
P. CERRITER TO MINITER SE 105 JACOBUS AVENUE SOUTH KEARNY, NJ 07032	Y, 194C.		EPAID Nun	nicer		zcility's Phons		**************************************	4004
11. Waste Shipping Name and Description						1/2. Cam	oiners Type	13 Total Guanniy	14 Unit Wt/Voi
NON RESULATED MATERIAL				1027		74		ķβ	
									rendered in the second
d  D. Additional Descriptions for Materials tisted A									o programa de aprime mar en del significa de la constanta de l
	ove	16 J. W. O. P. Van Jahr.	Saski Saski	Assertation	IE H	angling Code	s for W	ostes listed A	2036
(a)100% PETROLEUM CONTAMI SOIL	WATEL				E, H		es, for W	ostes listed A	ove 
(a)100% PETROLEUM CONTAMI SOIL  15. Special Handling instructions and Additional (a) his is to certify that the above games	NATED  Information CEN  Materials are or	J AFP.O1	ssifiet,	described	J January Packaged	HIII	and Ia	olet and ar	
(a)100% PETROLEUM CONTAMI SOIL  5. Special Handling Instructions and Additional (a) 115 is to certify that the above name	NATED  Information CEN  Materials are or	operly clas	ssifiet,	described	J January Packaged	HIII	and Ia	olet and ar	
(a) 100% PETROLEUM CONTAMI SOIL  5. Special Handling Instructions and Additional (a) his is to certify that the above named roper condition for transportation accomposed condition for transportation accomposed for transportations and Additional for transportations accomposed for transportation accomposed for transportations accomposed for trans	nated  Information CEN  Leaterials are or cording to the app	operly clam dicable red	ssified, quiations	described of the D	, packaged epartment	, marked, of Transp	ard la ortati	pled and ar	e in
(a) 100% PETROLEUM CONTAMI  SOIL  5. Special Handling Instructions and Additional (a) 115 is to certify that the above names roper condition for transportation accompany condition for transportation accompany to the Printed/Typed Name  CHALLES LEAFY  7. Transporter i Accommediate of Receipt of Printed/Typed Name  Printed/Typed Name  CHALLES LEAFY  7. Transporter i Accommediate of Receipt of Printed/Typed Name  Printed/Typed Name  CHALLES LEAFY	information CEN  I materials are proording to the appropriate described obevertible  Monerials  Materials  Materials  Materials  Materials	operly classicable res	ssified, quiations	described of the D	, packaged epartment	, marked, of Transp	ard la ortati	Silber and ar	e in state of the
(a) 100% PETROLEUM CONTAMI SOIL  15. Special Handling Instructions and Additional (a) his is to certify that the above named roper condition for transportation according to transportation according to the Printed Typed Name  CHARLES LEAD  7. Transporter 1 Accorded general of Receipt of Printed Typed Typed  Printed Typed Types	information CEN  I materials are proording to the appropriate described obevertible  Monerials  Materials  Materials  Materials  Materials	roperly classicable rec ricable rec e on the month Signon,	ssified, quiations est are not u	described of the D	packaged epartment	, marked, of Transp	ard la ortati	aled and ar on hiposol of Hozo (1) 1 1	F In
(a) 100% PETROLEUM CONTAMI SOIL  15. Special Handling Instructions and Additional (a) has is to certify that the above named roper condition for transportation acc roper cond	information CEN.  I materials are producting to the approximation described obovers of Monerials.  JULC 2  I Materials.	operly classificable residence on the manistration of the second of the	ssified, quiations and are control of the control o	described of the D	packaged epartment	, sarked, of Transp	ard la ortati	aled and ar on hiposol of Hozo (1) 1 1	e in  rdous Waste.  Day   Do

1. Generator's US EPA ID No. NON-HAZARDOUS Manifest Decuzoes No. BL122963 N / A 5 of 1 WASTE MANIFEST TRANSPURIEN & 516646 Generator's Name and Mailing Address CONSULIDIED EDISON CENTER CANAL /HESTER ST 71-02 20TH AVENUE LONG ISL CITY NY 11105 NEW YORK Generator's Phone ( 577-9000 US EPA ID Number Transporter I Company Name A. Transporter's Phone 708-862-2277 AUCHTER INDUSTRIAL VAC-SERVICE NJD98077276 Transporter Z Company Name US EPA ID Number B. Transporter's Phone US EPA ID Number C. Facility's Phone Designated Facility Name and Site Address. CLEAN EARTH OF NORTH JERSEY, INC. 105 JACOBUS AVENUE 344-4004 N J D 9 9 1 2 9 1 1 0 SOUTH KEARNY,NJ 07032 113 12. Containers 1), Waste Shipping Name and Description ioral i init NON REGULATED MATERIAL 1027 NON REGULATED MATERIAL 1027 D. Additional Descriptions for Materials Listed Above E. Handling Codes for Waster Listed Above (z) (b) 100% PETROLEUM CONTAMINATED 15. Special Handling Instructions and Additional Information CENJ APP.013551 (a):005 (b):006 (a) 100% PETROLEUM CONTAMINATED WATER This is to certify that the above named materials are properly classified, described, packaged, marked, and labled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation 16. GENERATOR'S CERTIFICATION: I certify the monerois described above on this modified are not subject to lectional regulations for reporting proper disposal of Hazardous Waste Printed/Typed Name Signature 17. Transporter 1 Acknowledgement of Receipt of Materials Printed, Types Nom Signature 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature total pending Manife 19. Discrepancy Indication Space 20. Facility Owner or Operator: Certification of receipt of weste materials covered by this manifest except as noted in Item 19. Signature ORIGINAL - RETURN TO GENERATOR

DRAFT PERENCY OF

WASTE MANIFEST  3. Generator's Name and Molling Address CONSOL IDTED EDISON		100	Sax all said of	TRA	NGF ÓR T	EN #			······································
S1-02 20TH AVENUE LONG ISL CITY	NY 11105				CAL#_ <b>1</b> TER UF	-	<u> </u>	444444	<b>**</b>
Generator's Phone ( 732) 577—9000				COLD TO A STATE OF THE STATE OF	YORK	and the second second		/ 1000	
Transpurier I Company Name AUCHTER INDUSTRIAL VAC SERVICE -	6.         -   -   -   -   -   -   -   -	US EPAJOI	Number 7, 7, 2, 7, &		isponer s P		-015	2277	
f. Transpatter 2 Company, Name	<b>S.</b>	US EFA ID	Number		sporter's P	one	***************************************		
Designated Facility Name and Site Address  LLEAN EARTH OF NORTH JERSEY, INC	10.	US EPA (D)	wumber	<del></del>	lity's Phons	Jacob Wal			74.162.09 170.174.0
105 JACOBUS AVENUE									
SOUTH KEARNY NJ 07032	· Ni	D 9, 9, 1.	29110			Ţ	73 3	744-40	04
1. Woste Shipping Nome and Description			Alle Alle Alle Alle Alle Alle Alle Alle		12. Cont	oiners Type	7	3. Hai Solity	la Unit Wi/V
NIN REGULATED PATERIAL				1					e de Con
Angel and the second of the se			1027		2	D	10 T 3 T	Чос	) F
			Parles de la					i vista i i i i i i i i i i i i i i i i i i i	
			grandina ja 19. 18. langust il				nousell. Produce	Daris Silencial Taris Silencial	
				10 10 10 10 10 10 10 10 10 10 10 10 10 1	•				
									5 / n ·
- Additional Descriptions for Materials Listed Above		ili a ye Maya ya Ya		e de la companion de la compan					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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(a)100% PETROLEUM CONTAMINATED				E Han	dina Code	s for We	ostes List	ed Above	<sup>2</sup> 4
(a)100% PETROLEUM CONTAMINATED SOIL Special Handling Instructions and Additional Information (a)	i Argentini Qu		(a) rolló	#1		<u></u>		<u></u>	·*e
(a)100% PETROLEUM CONTAMINATED SOIL Special Handling Instructions and Additional Information (a) 115 15 to certify that the above named materials	are properl	y Classifie	1. described.o		SETTERS.	ered le	bind at	<u></u>	·*e
(a)100% PETROLEUM CONTAMINATED SOIL Special Handling Instructions and Additional Information (a) 115 15 to certify that the above named materials	are properl	y Classifie	1. described.o		SETTERS.	ered le	bind at	<u></u>	·*e
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(a) 100% PETROLEUM CONTAMINATED SOIL  5 Special Handling Instructions and Additional information (a) Us is to certify that the above named materials open condition for transportation according to	: are proper) the applicab	y classifie le requiatio	i, described, ons of the Dep	ACKAGED, I	marked,	end le ortati	bled er	n are i	Q
(a) 100% PETROLEUM CONTAMINATED SOIL  5. Special Handling Instructions and Additional Information (a)  15 is to certify that the above maked materials ropen condition for transportation according to a generator's Certification: I tently the material standard Printed Types Name  2. Generator's Certification: I tently the material standard Printed Types Name  2. Certification: I tently the material standard Printed Types Name  2. Certification: I tently the material standard Printed Types Name  2. Certification: I tently the material standard Printed Types Name  2. Certification (I) tently the material standard Printed Types Name  2. Certification (I) tently the material standard Printed Types Name  2. Certification (I) tently the material standard Printed Types (I) te	: are proper) the applicab	y Classifie le regulatio	i, described, ons of the Dep	ACKAGED, I	marked,	end le ortati	bled er	ni are i	Q
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(a) 100% PETROLEUM CONTAMINATED SOIL  5. Special Handling Instructions and Additional Information (a) 11s is to certify that the above named materials roper condition for transportation according to 6. GENERATOR'S CERTIFICATION: I certify the materials seed Printed Typed Name  7. Transporter 1 Acknowledgement of Receipt of Materials  Frinted Typed Name  WHEREA	are properly the applicab bed obove on He	y classifie le requiatio	i, described, ons of the Dep	ACKAGED, I	marked,	end le ortati	bled ar	ni are in	Q Weste.
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## APPENDIX J DATA USABILITY REPORT

### **Introduction**

The data usability summary below covers the analytical results submitted by CHEMTECH, Mountainside, New Jersey, for the soil and groundwater samples and Severn Trent Laboratories (STL), Knoxville, Tennessee, for the soil gas samples collected during the investigation at the Former Hester Street Works (Site) in New York City. Both CHEMTECH and STL are New York State Department of Health (NYSDOH)-certified laboratories.

The analytical results submitted by CHEMTECH, standard delivery groups (SDGs) X5264, X5388 and X5546 and STL, SDG H6K090105 were reviewed by Bradley Williams, Ph.D., HDR | LMS' Quality Assurance Officer. Analytical data were examined in regards to the protocol requirements and assessed against the project data quality objectives (DQOs) in preparation of this data usability summary. The following items were reviewed:

- Custody documentations
- Holding times
- Instrument performances and detection limits
- Calibration and continuing calibration
- Data completeness
- Blanks
- Serial dilutions
- Spike recoveries, duplicate correlations

The laboratories performed all the necessary actions in order to provide the most representative data. Overall, the data submitted by CHEMTECH and STL met the project DQOs, and are appropriate to characterize the levels of contamination in the soil, groundwater, and soil gas samples collected from the Site.

A total of 7 soil samples, 5 groundwater (including trip and field blanks), and two(2) soil gas samples were collected and analyzed for the following:

Soil Samples collected were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals and cyanide by methods 8260B and reported in SDGs X5264 and X5546.

Groundwater samples were analyzed for some or all of the following; TCL VOCs, SVOCs, TAL metals, Resource Conservation and Recovery Act (RCRA) Hazardous Characteristics and amenable cyanide and reported in SDG X5814.

Soil gas samples were analyzed for the EPA T015 list VOCS.

All of the analyses were conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP), July 2005 revision except where noted. Samples were analyzed by various EPA SW-846 methods and in accordance with the applicable NYSDEC ASP method requirements with Category B deliverables.

### **Soil Sample Results**

### **Sample Receipt**

All samples were received under proper chain-of-custody and processed within the technical holding time requirements (from the date of sample collection until the date of extraction and analysis).

### **Volatile Organic Compound Results**

In the VOC analyses, holding times and calibrations met the protocol criteria and all the recoveries were within quality control (QC) limits with a few exceptions:

Surrogate recoveries were within criteria with the exception of the recovery of the surrogate 4-bromofluorobenzene in a laboratory blank associated with SDG X5546 which was slightly below QC criteria. Project sample results are not affected and the data is usable as reported.

In SDG X5264 the matrix spike/matrix spike duplicate (MS/MSD) were performed on batch related samples of another project. The recoveries for chloroethane, 1,1-dichloroethene, acetone, carbon disulfide, trans-1,2-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, chloroform, and bromodichloromethane in the MS in SDG X5264 were each below the quality control (QC) limits. Recoveries of chloromethane, chloroethane,

1,1-dichloroethene, acetone, trans-1,2-dichloroethene, 1,1,dichloroethane, cis-1,2-dichloroethene, bromodichloromethane and dibromochloromethane were outside QC criteria in the MSD. Replicate RPDs were within criteria with the exception of 1,1-dichloroethene, acetone, carbon disulfide and 2-butanone. The associated matrix blank spike (MBS) of SDG X5264 showed acceptable recoveries with the exception of high recoveries (above QC limits) for acetone, chloroethane, 1,1-dichloroethene, carbon disulfide, 2-hexanone, tetrachloroethene (PCE), chloromethane, and methylene chloride.

In SDG X5546 the MS and MSD was performed on a project sample (SB-01). Recoveries in both the MS and MSD were within criteria. Recoveries in the MBS were outside of criteria for the compounds chloromethane, bromomethane, 1,1-dichloroethene, acetone, carbon disulfide, chloroform, 1,2-dichloroethane, trichloroethene, bromodichloromethane, 2-hexanone, and methylene chloride.

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. Laboratory Control Samples (LCS) recoveries, which are used to verify that the laboratory can perform the analysis in a clean matrix, were within control limits with the exception of acetone, chloroethane, 1,1-dichloroethene, 2-hexanone, tetrachloroethene, chloromethane, carbon disulfide, and methylene chloride in SDG X5264 and SDG X5264.

With the exception of methylene chloride and acetone discussed below, only bromomethane (at an estimated concentration below reporting limit) and ethylbenzene were detected in samples associated with SDG X5264. No other target analytes were detected in samples reported in SDGs X5264 and X5546. No additional qualification to the data is required due to the MS/MSD/MSB recoveries outside of QC limits and the data is usable as reported.

Methylene chloride and acetone were detected in the associated method blanks in SDG X5264 and methylene chloride was detected in an associated method blank in SDG X5546 Concentrations of acetone and methylene chloride were also detected in sample SB05 and the associated field blank of SDG X5264 and samples SB01, Dup-01, and MW-07 in SDG X5546. Methylene chloride and acetone are common laboratory contaminants. Sample results for methylene chloride in SB05 and FB11106 and acetone in FB11106 in SDG X5264 were less than 10x the results in the associated blank. Per protocol results for

methylene chloride in sample SB05 and methylene chloride and acetone in FB11106 FG-1 in SDG X5264 should be edited to non-detect (ND) in the data summary tables. The concentration reported for acetone in sample SB05 was greater than 10x the concentration reported in the associated blank; therefore the result is considered estimated. The estimated numerical value is usable to show the relative magnitude of acetone in sample SB04.

In every other respect of data review, no further problems were found in the VOC analyses and the reported results for the soil samples are usable as presented by the laboratory.

### **Semivolatile Organic Compound Results**

In the SVOC analyses, holding times and calibrations met the protocol criteria and all the recoveries were within QC requirements with a few exceptions:

The recoveries of the surrogates 2-fluorobiphenyl, and terphenyl-dl4 in sample SB05 of SDG X5264 were outside QC limits. The sample was re-extracted (SB05RE) per protocol requirements and the surrogates 2-fluorobiphenyl, terphenyl-dl4, and phenol-d5 were outside QC limits. According to protocol, positive sample results for the base neutral fraction in sample SB05 and SB05RE of SDG X5264 are considered estimated. However, there were no detections of target analytes in the affected samples and therefore no qualification to the data is required. It should be noted that sample SB05 was run at an initial dilution of 10x resulting in elevated detection limits for these compounds.

The recoveries of the surrogate terphenyl-d14 in samples SB01, SB01RE, and Dup-01RE and terphenyl-d14 and nitrobenzene-d5 in the non-project batch QC sample X5574-03MS were outside QC limits. In addition the recoveries of surrogates 2-flurorophenol, phenol-d5, 2-fluorobiphenyl, and 2,4,6-tribromophenol were below QC limits. No qualification to the data is required per protocol as only one base neutral and/or acid extractable surrogate was outside QC limits in each sample and the data is usable as reported.

Internal standard area counts for perylene-d12 were below QC limits for samples SB04, SB05 and SB05RE in SDG X5264 and for samples SB-01, SB-01RE, Dup-01 and Dup-01RE Dup-01 and the batch-related MS sample X5574-03MS and X5574-04MSD in SDG X5546. All positive detections of analytes associated with this standard in SDG X5264 and SDG X5546 are considered estimated. As previously noted, however, there were no detections of target analytes in the initial and re-extraction of sample SB05 in SDG X5264

and therefore no qualification to the data is required. Positive detections of affected analytes in sample SB04 of SDG X5264 included benzo(b)fluoranthene and benzo(a)pyrene, however, both of these compounds were detected below the reporting limit and are already qualified as estimated. No additional qualification to the data is required and the data is usable as reported. There were no positive detections of affected analytes in samples associated with SDG X5546 therefore no qualification to the data is required and the data is usable as reported.

In SDG X5264 the matrix spike/matrix spike duplicate (MS/MSD) were performed on batch related samples of another project. Recoveries in the MS and MSD were within QC limits. Recoveries of the compounds phenol and bis(2-chloroethoxy)methane in the MBS were outside QC limits. No qualification to the data is required.

In SDG X5546 the matrix spike/matrix spike duplicate (MS/MSD) were performed on batch related samples of another project. Recoveries of a significant number of analytes both base neutral and acid extractable compounds were outside of QC limits. MBS results were within criteria with the exception of the recovery of 2-methylphenol which was slightly below QC limits. Data from both the MS and MSD in SDG X5546 is of little to no value, however, since batch QC was used, project sample results are unaffected and data is usable as reported.

### **Sample Dilutions**

Due to high concentrations of a TCL compound(s) and/or sample matrix, the following samples were analyzed at a dilution: Samples flagged with an "E" qualifier indicated a concentration that exceeded the calibration range. Results for these analytes should be reported from the diluted analysis.

SDG	Sample	Dilution
X5264	SB04	5x
X5264	SB05 / SB05RE	10x
X5546	SB-01 / SB-01RE	5x

In every other respect of data review, no further problems were found in the SVOC analyses and the reported results for the soil samples are usable as presented by the laboratory.

### **Inorganic Results**

In the TAL metals analyses plus cyanide, holding times, calibrations, serial dilutions and spike and duplicate recoveries met the protocol criteria with the following exceptions:

Spike and duplicate recoveries for calcium and iron in SDG X5264 and aluminum and iron in SDG X5546 were outside QC criteria. Sample concentrations were greater than 4X the spiking concentration, therefore, no qualification to the data is required and the data are usable as reported.

In every other respect of data review, no further problems were found in the inorganic analyses and the reported results for the soil samples are usable as presented by the laboratory.

### **Groundwater Sample Results**

### **Sample Receipt**

All samples were received under proper chain-of-custody and processed within the technical holding time requirements (from the date of sample collection until the date of extraction and analysis) and reported in SDG X5814.

### **Volatile Organic Compound Results**

In the VOC analyses, holding times and calibrations met the protocol criteria and all the recoveries were within QC limits with a few exceptions:

The surrogate 1,2-dichloroethane-d4 in the field blank sample FB120706 was slightly above QC limits. Results are not affected and the data is usable as reported.

Although the case narrative states than a MS/MSD was prepared, an MS/MSD was not processed for SDG X5814 (Form III). The lack of an MS/MSD does not necessarily impact data usability. Concentrations of chloroethane, 1,1-dichloroethene and carbon disulfide in

the associated LCS were slightly below QC limits. These compounds were not detected in the project samples; therefore no qualification to the data is required.

In every other respect of data review, no further problems were found in the VOC analyses and the reported results for the groundwater samples are usable as presented by the laboratory.

### **Semivolatile Organic Compound Results**

In the SVOC analyses, holding times and calibrations met the protocol criteria and all the recoveries were within QC requirements with a few exceptions:

The recovery of phenol in the LCS was above QC limits. Phenol was not detected in the project samples and therefore no qualification to the data is required.

Internal standard area counts for perylene-d12 were below QC limits for samples MW04 and MW04RE in SDG X5814. All positive detections of analytes associated with this standard in SDG X5814 are considered estimated. Benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene were each detected in sample MW04 and or MW04RE. Sample results were all reported at concentrations below the quantitation levels and are already qualified as estimated. No additional qualification to the data is required.

The initial calibration for 2,4-dinitrophenol was outside of QC limits, however, 2,4-dinitrophenol was not detected in the project samples therefore no qualification to the data is required.

In every other respect of data review, no further problems were found in the SVOC analyses and the reported results for the groundwater samples are usable as presented by the laboratory.

### **Inorganic Results**

In the TAL metals, RCRA characteristics, and amenable cyanide analyses, holding times, calibrations, serial dilutions and spike and duplicate recoveries met the protocol criteria with the following exceptions:

In SDG X5814 the matrix spike/matrix spike duplicate (MS/MSD) were performed on batch related samples of another project. Recoveries of calcium, magnesium, potassium and sodium in both the MS and MSD were outside criteria. Sample concentrations were greater than 4X the spiking concentration, therefore, no qualification to the data is required and the data are usable as reported.

In every other respect of data review, no further problems were found in the inorganic analyses and the reported results for the groundwater samples are usable as presented by the laboratory.

### **Soil Gas Sample Results**

In the soil gas analyses holding times and calibrations met the protocol criteria and all the recoveries were within QC requirements with a few exceptions:

The recoveries of hexachlorobutadiene and naphthalene exceeded the EPA criteria of 30% in the continuing calibration verification standards but were within the laboratory specific criteria of less than 40% (for no more than 4 compounds). Data is usable as reported and no qualification to the data is required.

In every other respect of data review, no further problems were found in the soil gas analyses and the reported results are usable as presented by the laboratory.

## APPENDIX K LABORATORY RESULTS – SOIL SAMPLES – CD ROM

INSERT DISK WITH SOIL DATA

### APPENDIX L

LABORATORY RESULTS - FINGERPRINT ANALYSIS - CD ROM

INSERT DISK WITH FINGERPRINT REPORT

### APPENDIX M

LABORATORY RESULTS - SOIL GAS SAMPLES - CD ROM

INSERT DISK WITH SOIL GAS DATA

### APPENDIX N

LABORATORY RESULTS - GROUNDWATER SAMPLES - CD ROM

INSERT DISK WITH GROUNDWATER DATA