Shaw® Shaw Environmental, Inc.

REMEDIAL ACTION WORK PLAN
INTERIM REMEDIAL MEASURE

CONSOLIDATED EDISON FORMER KENT AVENUE GENERATING STATION

500 KENT AVENUE
BROOKLYN, NEW YORK

Project No. 126649

September 2012

Prepared for:

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Glossary of Acronyms and Abbreviations

ACM	Asbestos-Containing Material
ASP	Analytical Services Protocol
AS	Air Sparging
AST	Aboveground Storage Tank
bgs	Below Ground Surface
BS	Bio Sparging
BV	Bioventing
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
Con Edison	Consolidated Edison Company of New York, Inc.
DER	Division of Environmental Remediation (New York State Department of Environmental Conservation)
DPE	Dual Phase Extraction
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
FER	Final Engineering Report
FS	Feasibility Study
ft	Feet
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
LBP	Lead Based Paint
MDL	Method Detection Limit
MGP	Manufactured Gas Plant
NYCRR	New York State Codes, Rules and Regulations

NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbon
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyl
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act of 1976
RI	Remedial Investigation
RRSCO	6NYCRR Part 375 – 6.8 (b) Restricted Residential Soil Cleanup Objectives
RSCO	NYSDEC-Technical Administrative Guidance Memorandum # 4046: Recommended Soil Cleanup Objectives
SCG	Site Cleanup Goal
SCO	Soil Cleanup Objective
sf	Square Feet
Shaw	Shaw Environmental, Inc.
SWPPP	Storm Water Pollution Prevention Plan
SVE	Soil Vapor Extraction
SVOC	Semi-volatile Organic Compound
USEPA	United States Environmental Protection Agency
TAGM	Technical Administrative Guidance Memorandum
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 Introduction

1.1 Purpose

The purpose of this Remedial Action Work Plan (RAWP) is to describe the work proposed for the Interim Remedial Measure (IRM) that includes the remediation of soil/fill and associated subsurface materials located north and south of the former Consolidated Edison Kent Avenue Generating Station building.

The former Consolidated Edison (Con Edison) Kent Avenue Generating Station (the "Site") is located at 500 Kent Avenue, Brooklyn, New York. The Site is bounded by Division Avenue to the north, the former Brooklyn Navy Yard to the south, Kent Avenue to the east, and Wallabout Channel (extension of the East River) to the west. A Site Location Map is provided as **Figure 1**. The site has been the subject of previous site investigations and remedial actions related to the former generating plant operated on the site. Previous remedial actions include the 2011/2012 removal and dewatering of sludge from the Ash Pit (northwest portion of the Site), disposal of dewatered sludge at off-site disposal facilities, treatment and permitted discharge of filtrate into Wallabout Channel, closure of the pit with lightweight concrete, and placement of a reinforced concrete cap.

1.2 Site Background

The total area of the Site is approximately 4 acres. It had been developed by a 7- and 9-story structure (demolished in 2009) with a footprint of approximately 2.6 acres which formerly housed the generating station (**Figure 2**). The remaining 1.4 acres consist of a vacant lot on the southern portion of the property (where a previously demolished portion of the generating station complex was located), a concrete walkway in the western portion, and a small concrete/unpaved side yard in the northern portion.

The Site is located in Kings County on the western shore of Long Island. The Site is generally flat and lies at an elevation of approximately 10 feet (ft) above mean sea level. The geology of Long Island consists of varying thicknesses of glacial till, outwash sediments, and marine deposits, overlying a sloping bedrock surface. Bedrock in the Site area is believed to lie at approximately 100 ft below ground surface (bgs).

According to maps found in technical literature[1], the Site location appears to be one that was landfilled sometime between 1844 and 1900. Landfills in New York City during this time period were typically composed of sediments consisting of coal ash, cinders, slag, brick, wood, and cement. This is consistent with the findings by previous site investigations of ash, concrete, and brick, as well as sand, silt, gravel, and clay in the upper 15 ft of the soil column. The water table is at an elevation approximately level with the surface water altitude in the adjacent Wallabout Channel, and thus is likely to be

[1] Landfills in New York City: 1844-1994, Walsh, D.C., and LaFleur, R.G., GROUND WATER, v. 33, No. 4, 1995.

influenced by tidal variations. Depth to groundwater at the Site was found to be approximately 8 ft bgs.

1.3 Contemplated Redevelopment Plan

Con Edison currently has no plans to use the property for utility operations, but is considering marketing it for sale. Based on recent property developments in the Kent Avenue site area, it is anticipated that a buyer would redevelop the site for residential and/or commercial use.

1.4 Description of the Surrounding Properties

Adjacent to the Site on the north is Division Avenue; beyond this dead-end street is a recently closed commercial lumber yard. Adjacent to the south is the former Brooklyn Navy Yard property, of which the portion adjacent to Con Edison's Kent Avenue site was the Nassau Gas Works, a former manufactured gas plant (MGP) site that is being addressed by National Grid. This adjacent property is currently occupied by the New York City Sanitation Department and is used for salt storage. To the east is Kent Avenue; beyond this street is a public park. To the west is Wallabout Channel, a tidal tributary to the East River. The neighborhood is currently a mix of commercial, industrial, and residential uses; however, historical land use was primarily industrial.

2.0 History of Site Investigations

Site investigation history has been summarized in the following documents:

- Phase I Environmental Site Assessment Report, H2M, September 1999;
- Phase II Site Investigation Report: Kent Avenue Site, LMS, February 6, 2000;
- Phase II Site Investigation Report Addendum: Former Kent Avenue Generating Station Facility, LMS, February 16, 2000;
- Site Investigation Summary Report: Consolidated Edison Former Kent Avenue Generating Station, Shaw, April 2007;
- Pre-Design Investigation Report: Former Kent Avenue Generating Station, Shaw, June 2010; and
- Pre-Interim Remedial Measure (IRM) Investigation Summary Report, Shaw, September 2012.

The Phase I Environmental Site Assessment (ESA) recognized several potential environmental concerns on Site:

- underground storage tanks (USTs),
- aboveground storage tanks (ASTs),
- an ash pit,
- suspect materials within the buildings,
- placement of fill material, polychlorinated biphenyls (PCBs), oil-filled electrical components,
- lead-based paint (LBP), and
- asbestos-containing material (ACM).

Regarding subsurface environmental conditions at the Site, the Phase I ESA recommended the collection of shallow-horizon soil samples, and a determination of groundwater quality both upgradient and downgradient of the Site be performed.

The LMS Phase II Site Investigation focused on the applicable areas of concern outlined in the Phase I as a basis for a subsurface investigation. Surface soil samples were collected in 16 locations from depths of 0 to 2 ft bgs. Laboratory analysis of the samples reported concentrations of PCBs exceeding cleanup objectives at six locations. The deeper soil horizon (2 to 8 ft bgs) was investigated at 13 locations, where soil borings were advanced to the depth of the water table (approximately 8 ft bgs), and soil samples were collected for on-site evaluation and for laboratory analysis. The laboratory analyses reported concentrations of metals exceeding cleanup objectives at seven locations,

concentrations of semi-volatile organic compounds (SVOCs) exceeding cleanup objectives at nine locations, and concentrations of volatile organic compounds (VOCs) exceeding cleanup objectives at one location.

During the Phase II Site Investigation field activities, four separate environmental incidents were reported by Con Edison and subsequently reported to the New York State Department of Environmental Conservation (NYSDEC). These included a drum encountered at the southeast corner of the Site on December 9, 1999, and subsequently removed; a sheen formed on the water surface within the ash pit at the northwest corner of the Site during sludge sampling on December 16, 1999 (the ash pit was remediated and closed in late 2011/early 2012); oil-stained soil (fuel oil) was encountered at the southwest corner of the Site at a depth of 9-12 ft bgs on December 16, 1999; and soil saturated with oil (weathered fuel oil) was encountered at a depth of 8-8.5 ft bgs at the Site on December 17, 1999.

The Shaw Environmental, Inc. (Shaw) Site Investigation focused on delineation of subsurface soil contamination and to formulate a Remedial Action Work Plan, if needed, to facilitate potential future Site redevelopment. A total of 12 test pits and nine GeoProbe® soil borings were advanced at the locations shown on **Figure 3**. Three test pits were terminated at 1.5 ft bgs when suspect ACM was encountered. Soil samples were collected and analyzed for VOCs, SVOCs, PCBs and metals; the results are summarized in **Table 1**. Subsurface soil samples were collected in six test pit locations from depths between 5-5.5 ft bgs to 14-14.5 ft bgs. Laboratory analysis of the samples reported no concentrations of VOCs or PCBs exceeding Technical and Administrative Guidance Memorandum #4046 (TAGM) Recommended Soil Cleanup Objectives (RSCOs) at any of the six locations. The laboratory analyses reported concentrations of metals exceeding RSCOs at five locations and concentrations of SVOCs exceeding RSCOs at four locations. The shallow soil horizon (2 to 5 ft bgs) was investigated at nine locations, where hand auger borings were advanced to refusal. Laboratory analysis of the samples reported no concentrations of VOCs or PCBs exceeding TAGM RSCOs at any of the nine locations. The laboratory analyses reported concentrations of one metal (zinc) exceeding RSCOs at one location and concentrations of SVOCs exceeding RSCOs at two locations.

The Site Investigation Summary Report, prepared April 2007 by Shaw, provided the following conclusions regarding the Site investigation:

- Laboratory analyses performed on the soil samples collected from 16 borings reported SVOCs at concentrations exceeding TAGM 4046 RSCOs in seven of the samples. No VOCs were detected above TAGM 4046 RSCOs in any of the soil samples.
- The PCB analyses reported one PCB (Aroclor-1260) at concentrations above method detection limits (MDLs) in most of the subsurface soil samples; however, the concentrations were well below the TAGM 4046 RSCO.

- Metal concentrations were detected above the TAGM 4046 RSCOs in eight of the soil samples. Concentrations of metals such as calcium, iron, sodium, and potassium consisted of a significant portion of the total metals in many of the samples. Arsenic concentrations above the TAGM 4046 RSCOs were detected in two of the samples.
- Levels of total petroleum hydrocarbons (TPH) were detected in all of the soil samples. Fingerprint analysis of selected soil samples reported the identification of heavy lubricating oil and weathered #6 fuel oil in certain samples.
- Physical evidence, such as soil staining, as well as analytical data confirming elevated concentrations of petroleum-related chemical compounds, suggest that environmental impact to Site soils has resulted from facility operations, or possibly from the adjacent property to the south, which is a former MGP site. However, concentrations of most metals in Site soils, possibly with the exception of arsenic, may be due to deposition during landfilling operations over 100 years ago (urban fill). Concentrations of other metals, such as iron, calcium, and sodium, may be representative of typical soil concentrations in the northeastern United States.

The Pre-Design Investigation (PDI) Report, prepared June 2010 by Shaw, provided the results of a field program conducted at the Site between November 18 and December 15, 2009, in accordance with the Pre-Design Investigation Work Plan submitted by Con Edison to NYSDEC on April 28, 2009. The goals of the pre-design investigation field activities were 1) to confirm the presence and location of a 1,500 gallon UST that was used to store fuel oil, and 2) to approximate the lateral and vertical extents of subsurface contamination in the vicinity of soil boring locations PBL-1 and PBL-2 at the southwestern corner of the property; PBL-5 at the northwestern corner of the property (near the ash pit); and PBL-7 and PBL-8 at the southeastern portion of the property. A total of 40 rotasonic soil borings were advanced at the locations shown on **Figure 4**. Subsurface soil samples were collected and analyzed for VOCs, SVOCs and metals; summaries of the analytical results are presented on **Tables 2**, **3**, and **4**, respectively.

The PDI report concluded that:

- The presence of the reported buried 1,500 gallon fuel oil tank at the north end of the site was confirmed, but the specific outline of the UST was not;
- SVOC exceedances of the Part 375 Residential, Restricted Residential and Industrial Soil Cleanup Objectives (SCOs) are driving the delineation of the soil remediation in the PBL-1 and PBL-2 areas;
- A combination of SVOC and metal exceedances of the Part 375 Residential, Restricted Residential and Industrial SCOs are driving the delineation of the soil remediation in the PBL-2 area and the PBL-5 area;
- Metal (in particular, arsenic) exceedances of the Part 375 Residential, Restricted Residential and Industrial SCOs are driving the delineation of the soil remediation in the PBL-7 and PBL-8 areas; and

- A review of the combined results of the PDI and historical investigations indicates that nearly every location sampled had either SVOC or metal exceedances. The SCO exceedances are principally attributable to two (2) chemical constituents detected in the subsurface soils, benzo(a)pyrene and arsenic.

The Pre-IRM Investigation Summary Report, prepared September 2012 by Shaw, provided the results of a field program conducted at the Site between May 7 and 11, 2012, in accordance with the Pre-IRM Investigation Work Plan dated April 2012. The goal of the pre-IRM investigation field activities was to identify any petroleum/chemical impacts and discover potential LNAPL impacts at or below the water-table to a minimum depth of 30 ft bgs, in the area between the former building foundation slab and Wallabout Channel. A total of five rotasonic soil borings were advanced at the locations shown on **Figure 5**. Subsurface soil samples were collected and analyzed for VOCs, SVOCs and metals; summaries of the analytical results are presented on **Tables 5**, **6**, and **7**, respectively.

The Pre-IRM Investigation Summary Report concluded that:

- No VOC concentrations in excess of applicable NYSDEC CP-51/Part 375-6.8(b) RRSCOs were identified in any of the soil samples collected during soil boring activities;
- Two SVOC concentrations and one metals concentration in excess of applicable RRSCOs were identified in soil sample DB-1 (34.5-35') collected at the northwestern portion of the Site;
- Four SVOC concentrations in excess of applicable RRSCOs were identified in soil sample DB-6 (29.5-30') collected at the southwestern portion of the Site; and
- The SVOCs identified in excess of RRSCOs are polycyclic aromatic hydrocarbons (PAHs), which occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning.

3.0 Description of Interim Remedial Measure Areas

Based on the data discussed in Section 2.0 and as shown on **Figure 2**, there are two general areas to be remediated. The first area, North Excavation Area is approximately 5,250 square feet (sf) with an average vertical depth of 8 ft; and the second area, South Excavation Area, is approximately 30,000 sf with an average vertical depth of 8 ft. There is a 1,500-gallon UST in the North Excavation Area that will be removed as part of this IRM. Additional details on the proposed IRM are provided in Section 5.0 Description of Remedial Action Plan.

4.0 Remedial Action Objectives: Site Cleanup Goals

Based on the investigations completed at the Site, the remedial action objectives are to improve the environmental quality of the Site to support potential future restricted residential use. Achieving the remedial action objectives will:

1) Permit the use of the Site without impediment or restriction caused by the suspected ACM, SVOC and metal contaminated soil/fill present to the north and south of the former generating station building; and
2) Protect human health and the environment.

The remediation site cleanup goals (SCGs) for the Site are to eliminate, or reduce to the extent allowed by the remedial action as defined in Section 5.0:

Exposure of persons at or in the immediate vicinity of the Site to concentrations of SVOCs and metals in Site soil/fill material that exceed the clean up objectives established in 6NYCRR Part 375-6.8(b) (Restricted Residential Soil Cleanup Objectives - RRSCOs).

The RRSCOs are proposed as the numerical cleanup criteria, based on the previously collected site characterization data in which polycyclic aromatic hydrocarbons (PAHs) such as benzo(a)pyrene and metals such as arsenic, have been reported by laboratory analyses to persist after multiple sample characterization analyses. Also, exposure of persons at or in the immediate vicinity of the Site to ACM in Site soil/fill material that exceeds one percent (1%) asbestos as established in Title 15, Chapter 1 of the Rules of the City of New York (Title 15, Chapter 1). Achieving the SCGs can be enhanced through institutional controls such as an environmental easement and/or deed restrictions as well as the development of a Site Management Plan that indicates how the institutional controls are to be maintained and places controls on any future site disturbing activities.

4.1 Soils

The SCG for soil/fill material at the Site will be achieved when an excavation reaches a former building basement wall, basement floor slab, or the top of the water table and endpoint soil sample concentrations do not exceed 1% asbestos or the corresponding 6NYCRR Part 375-6.8(b) RRSCOs. In the areas of any noticeable staining on the buried walls or slab, particularly in the area of boring PBL-7 (see **Figure 3**) where a soil sample contained a concentration of 3.5 mg/kg of PCBs, wipe samples will be collected and analyzed for PCBs. Where contaminant concentrations of endpoint samples exceed 1% asbestos or the RRSCOs, the soils will not meet the SCGs. If SCGs cannot be achieved, alternatives to the remediation technology will be evaluated. Endpoint samples will not be collected when the excavation has reached a buried wall or slab that preclude removal and/or sampling due to structural stability issues, respectively.

5.0 Description of Remedial Action Plan

Location and Description

The proposed remediation areas are shown on **Figure 2**. The remedial contractor will be required to adhere to the site-specific engineering plans and specifications developed for implementing the site remediation. The excavation in the South Excavation Area is anticipated to be within the basement walls of a former boiler house building. The excavation in the North Excavation Area will be contained by the basement wall of the former generating station building to the south, the ash pit wall to the west, and the basement wall of a former building located adjacent to Division Avenue. Both excavations will extend down to the basement slab floors which range between seven and ten ft bgs (average depth is eight ft bgs).

The buried 1,500-gallon fuel oil tank (**Figure 2**) within the North Excavation Area will also be removed during this work. There is no documentation to suggest that the fuel oil tank is registered in the NYSDEC Petroleum Bulk Storage (PBS) Program. Therefore, at the start of the remedial program, a PBS Application will be submitted to the NYSDEC PBS Program to register the tank. At least 10 days prior to the tank removal, a NYSDEC Notification for Tank Installation, Closing, Repair or Recondition Form will be submitted to the PBS Program. After successful removal of the tank, a brief closure report will be prepared following the guidelines in DER-10, Section 5.8 and, along with a revised PBS application showing that the tank has been removed and closed, sent to the NYSDEC.

In the event that a portion of an excavation bottom has no floor slab, the excavation will extend down to the top of the water table, which is located at approximately eight ft bgs. Where the excavations are outside of the main building footprint, it is anticipated that there will be no basement floor slab. If any concrete slab is encountered outside of the main building footprint while excavating down to the water table, the slab will be removed. If for reasons of structural stability, a slab should not be removed, soil quality beneath the slab will be investigated using safe, practical methods.

Dewatering within the South Excavation Area is anticipated to be minimal. Test pits completed in 2006 identified small pockets of water on top of the floor slab. If there is appreciable groundwater infiltration, a pump will be used to remove the water into a storage tank maintained on Site. The material removal in the North Excavation Area outside of any floor slabs will extend below grade to the top of the water table. These two areas will be dewatered concurrently with the excavation to reduce the volume of water in the excavated material and to provide a solid bottom to place clean backfill material. The contractor will be required to submit a Dewatering Plan presenting the method by which the excavation will be dewatered including the location of all pumps, sumps, pipelines, sediment filters, sedimentation basins, and other necessary equipment. The Plan will also include a list of the products to be used for dewatering. The piping materials, transfer route, and the location of storage tank(s) will be included in the Plan.

Dewatering of each Area will maintain the saturation zone at least one foot below the bottom of the excavation.

The contractor will be required to obtain all necessary permits (and any sampling and analysis necessary for those permits) to either transport and dispose of the collected groundwater or treat and discharge (to the sanitary sewer or Wallabout Channel). Since the dewatering operation only needs to lower the water table in the immediate area by a minimum of one foot, the anticipated volume of water may be managed with a series of sumps pumping into a storage tank with periodic removal for off-site treatment/disposal by a vacuum truck. Another option involves utilizing a series of well points to locally lower the water table. This option would likely be used where larger volumes of water are anticipated and would likely include on-site pretreatment and discharge to a local sanitary sewer or Wallabout Channel. In addition to additional permitting that would be required for the discharge, the well points would likely impede the movement of equipment and trucks around the site, reducing excavation productivity.

Removal of the soil/fill material eliminates the source of potential impacts to human health and the environment. Excavation and offsite disposal will result in long term remedial effectiveness. The selected technology will require the use of excavation equipment and possibly shoring. Containment areas for temporary stockpiling of the soil/fill materials will be required. The remediation contractor will be required to comply with the bid specifications that identify safeguards to protect the land, water and air.

The estimated volume of soil/fill material to be removed from the South Excavation Area is 8900 cubic yards (13,350 tons). The estimated volume of soil/fill material to be excavated and removed from the North Excavation Area is 1,550 cubic yards (2,325 tons).

Soil and Sediment Control, Storm Water Management & Monitoring

Soil and storm water management will be achieved by using silt fencing and diversion channels with hay bales surrounding the excavation areas. The area immediately surrounding the excavations will be graded to slope toward the excavation areas. To address storm water control, a Storm Water Pollution Prevention Plan (SWPPP) will be developed. The SWPPP will describe the site specific locations of surface water and sediment controls to protect the adjacent areas and Wallabout Channel. Stockpiled soil/fill material will require cover in the form of 6-mil plastic sheeting as specified to the contractor in bid specifications and plans. The SWPPP will also include provisions for weekly compliance inspections. The plan is dependent on the contactor's methods of excavation and loading. These methods will be submitted in advance for review and approval by Con Edison.

Asbestos Variance

It is anticipated that the implementation of the IRM RAWP will require an asbestos variance from the New York City Department of Environmental Protection (NYCDEP). An Asbestos Variance Application will be prepared in accordance with Section 1-03 of Title 15, Chapter 1 and submitted to the NYCDEP. The variance application will specify

which specific rules will require a variance, why they require a variance, and describe alternative procedures that will satisfy each requirement as modified. This will include an asbestos air monitoring program to protect the surrounding community, as well as the on-site workers, from exposure to asbestos.

Dust and Organic Vapor Monitoring & Control

To address health and safety issues relevant to dust and organic vapors, a Community Air Monitoring Plan (CAMP) has been prepared for the RAWP based on the New York State Department of Health (NYSDOH) Generic CAMP in Appendix 1A of DER-10 (see **Attachment A**). In addition to the immediate notification requirements set forth in the CAMP, a weekly summary that highlights any exceedances along with the possible explanation of the exceedances and the corrective action that was taken will be submitted to the NYSDEC and NYSDOH. Similarly, a schedule of air sampling, as well as, site and personal air monitoring will be conducted in accordance with Title 15, Chapter 1 (Sections 1-41 through 1-51). Details of this air monitoring program will be included in the Asbestos Variance Application discussed above.

Health and Safety Plan

To address health and safety issues relevant to implementing the RAWP a Health and Safety Plan (HASP) has been prepared (see **Attachment B**). The HASP is specific to Shaw's engineering oversight role associated with the RAWP. The contractor will be required to develop a HASP for specific methods and tasks that the contractor will implement. The contractor HASP must be approved by Con Edison.

Utility Mark Out and Clear Zones

Prior to implementing the RAWP, the contractors shall be required to identify and verify the location of all utilities within a minimum 50 ft. of the proposed work areas. Clear zones shall be physically located to assure that utility conflicts are avoided.

Protection of Surface and Ground Waters

During the RAWP work, excavated soil/fill material not directly loaded onto trucks will be placed in containment areas. The containment areas will require placement of minimum 6-mil plastic liners as specified to the contractor in the bid plans and specifications. Soil/fill material piles will be covered with secured plastic liners.

Confirmation Samples

It is anticipated that the excavation in the South Excavation Area will be confined within the basement walls and slab floors of former buildings. The specifications for the IRM RAWP will require the contractor to remove all materials from within the excavation by mechanical means, including the use of flat-edged buckets for scraping material off the floor slab. In this case, no soil confirmation samples are anticipated to be collected. If unforeseen conditions arise, soil confirmation samples will be collected as described in the paragraph below. In the areas of any noticeable staining on the buried walls or slab, particularly in the area of boring PBL-7 (see **Figure 3**) where a soil sample contained a concentration of 3.5 mg/kg of PCBs, wipe samples will be collected and analyzed for PCBs.

In the North Excavation Area, as well as any excavation that has a portion without either a basement wall, slab floor, or shoring, samples will be collected at a minimum of one for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area. Each confirmation sample will be analyzed for SVOCs and metals listed in 6NYCRR Part 375-6.8, as well as for asbestos. Analytical results of SVOCs and metals in the soil/fill material will be compared with Restricted Residential SCOs. The PCB wipe samples will be compared to the low contact, outdoor nonimpervious surface cleanup criteria established in Title 40 of the Code of Federal Regulations Part 761.125 (40 CFR Part 761.125). Samples will be analyzed by an Environmental Laboratory Approval Program (ELAP)-certified laboratory. Sample collection and laboratory analyses will conform to the NYSDEC Analytical Services Protocol (ASP) Category B data deliverables per NYSDEC DER-10 Appendix 2B: *Guidance for Data Deliverables and the Development of Data Usability Summary Reports (DUSR).*

Cost

The IRM Engineering and Construction Cost Estimate is presented in **Table 8**. As shown, the cost to implement the selected technology, including all engineering, preliminary investigations, and construction of remedial measures is estimated at $5.3 Million. This is based on the assumption that all soils subject to removal from the site will need to be disposed as asbestos containing material (ACM), which is a worst case scenario.

Overall project cost will be heavily influenced by the percentage of ACM disposal. ACM hauling and disposal is the single most costly activity for the project. Based on the above assumption, over half the total project cost is attributable to hauling and disposal of ACM.

While it has been verified that some fraction of the soils are ACM, the actual fraction has not yet been determined. If a best case scenario of 25% ACM is assumed, the project estimate can be reduced by approximately $1 Million. Therefore, the estimate is very sensitive to the ACM assumption.

The estimate does not include any provisions for structural shoring of any foundation elements, as it seems possible that the exterior foundation walls are adequate to support the excavation without shoring, and all interior walls will likely be demolished.

The project estimate is based on a construction duration of 160 working days with full-time construction support.

6.0 Remedial Action Derived Waste, Management and Disposal

Testing of previously collected site investigation samples did not identify any hazardous wastes. However, all waste streams (soil/fill materials and liquid wastes) will require offsite treatment and/or disposal, and will be pre-characterized as follows:

Soil/Fill

- PCBs by EPA Method 8082.
- Toxicity Characteristic Leaching Procedure (TCLP) Resource Conservation and Recovery Act (RCRA) Metals by EPA Method 6010
- TCLP RCRA (VOCs by EPA Method 8260/SVOCs by EPA Method 8270)
- Reactivity
- Corrosivity
- Ignitibility
- TPH
- ACM

If petroleum contaminated material is identified in the buried tank test pit, a sample will be collected and analyzed for:

- VOCs by EPA Method 8260
- SVOCs by EPA Method 8270

Liquids

- PCBs by EPA Method 8082.
- RCRA Metals by EPA Method 6010
- RCRA (VOCs by EPA Method 8260/SVOCs by EPA Method 8270)
- Reactivity
- Corrosivity
- Ignitibility

The waste characterization of soil/fill materials and liquids will identify the appropriate disposal method(s) and potential receiving facilities. If necessary, wastes will be temporarily stockpiled onsite, then transported by a Con Edison approved waste hauler to a Con Edison approved disposal facility. Proper waste shipping papers (or manifest) will be managed by the remediation contractor under Con Edison Construction Management oversight. Confirmation weight tickets provided by the disposal facility will be obtained

and maintained by Con Edison. Con Edison will verify that all vehicles transporting waste from the site have a valid 6 NYCRR 364 Waste Transporter Permit.

7.0 Site Restoration

The excavations will remain open for sufficient time to allow for inspection by the NYSDEC, or if necessary, until confirmatory sample results are received (when basement walls, floor slab, or shoring are not present), and the results indicate acceptable analyte concentrations in the soil samples. Clean backfill will be imported to the site as needed to restore the site grading in accordance with the plans and specifications. The excavated areas will be backfilled and compacted per specifications in the contract documents. All excavated areas will be backfilled as soon as possible, particularly if inclement weather is forecasted.

All imported backfill shall be certified clean material. The chemical quality of fill shall be certified by laboratory analysis. Criteria for suitable material shall demonstrate that no results exceed the applicable concentrations for 6 NYCRR Part 375 Table 375-6.8 (b) Restricted Residential SCOs. The number of representative clean fill samples shall be in accordance with DER-10, Table 5.4(e)10 There are some materials that may be imported without chemical testing to be used as backfill (rock or stone consisting of virgin material from a permitted mine or quarry). The material will be sand, or sand and gravel containing less than 10% by weight passing a 80 sieve and having a maximum particle size less than 2 inches. In addition, the material shall be free of topsoil, roots and other organic matter. The backfilling will be performed with maximum 12-inch lifts that will be compacted to 92% modified proctor density, and will meet the existing grade. Backfill materials must conform to the requirements of the engineering designs, and construction bid documents and specifications.

8.0 Post-Closure Reporting

All waste characterization results and a narrative description of the contaminated materials will be summarized in a Construction Completion Report (CCR)/Final Engineering Report (FER) to be submitted to the NYSDEC. The report will contain pertinent conclusions, and recommendations for further action, if needed. A preliminary outline for the Report follows:

1. Summary of the Remedy
2. Summary of Remedial Actions for the South Excavation Area and the North Excavation Area
    a. Descriptions of Problems and Solutions Encountered During Remedial Actions
    b. Descriptions of Changes to the Designs and Decision Record
    c. Quantities and Concentrations of Contaminants Removed
    d. List of Waste Streams, Quantities of Wastes and Disposal Facilities
3. List of Remediation Standards Applied to Remedial Actions
4. Tables and Figures For Pre- and Post-Remedial Actions Inclusive of Volumes of Contaminated Materials Removed
5. Detailed Description of Restoration Activities
6. Detailed Description of Source and Quality of Fill
7. As-Built Drawings
8. Manifests
9. Filed Copy of Required Engineering or Institutional Controls

9.0 RAWP Implementation Project Schedule

A project schedule is provided in **Table 9**. The schedule projects a timetable for the major tasks that are the components of the remedial actions proposed by this IRM RAWP, including:

- submission of the IRM RAWP to the NYSDEC (the findings of the Pre-IRM Site Investigation Report may have an impact on the final remedial work scope (and resulting bid specification) prior to finalization of the IRM RAWP for NYSDEC approval),
- approval by the Department,
- preparation of bid specifications,
- issuance of a contract to a qualified remediation contractor through competitive bidding,
- performance of remediation (estimated duration dependent upon the extent of sheeting/shoring and ACM abatement requirements, and
- preparation of a Construction Completion Report (CCR)/Final Engineering Report (FER) for the IRM.

Con Edison and Shaw will make every reasonable effort to adhere to the timetable outlined in the project schedule.

10.0 Signatures of Environmental Professionals

Curtis Kraemer, P.G.
Senior Geologist

John D. Francescon, P.E.
Engineering Manager

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	PBL-1	PBL-2	PBL-5	PBL-5RE	PBL-7	PBL-7RE	PBL-8	PBL-8A	PBL-8ARE	PBL-9	PBL-9RE	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	5'-5.5'	6'-6.5'	8'-8.5'	8'-8.5'	7'-7.5'	7'-7.5'	8'-8.5'	9'-9.5'	9'-9.5'	14'-14.5'	14'-14.5'	
Sample Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Sample Date:	7/26/2006	7/26/2006	7/25/2006	7/25/2006	7/17/2006	7/17/2006	7/14/2006	7/14/2006	7/14/2006	7/20/2006	7/20/2006	
Concentration Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Volatile Organic Compounds (VOCs) by EPA Method 8260:												
Chloromethane	0.0052 U	0.0053 U	0.0052 U	0.0054 U	0.0057 U	0.0057 U	0.0066 U	0.0063 U	0.0062 U	0.0056 U	0.0056 U	**
Vinyl Chloride	0.005 U	0.0051 U	0.005 U	0.0052 U	0.0055 U	0.0055 U	0.0064 U	0.0061 U	0.006 U	0.0054 U	0.0054 U	0.2
Bromomethane	0.012 U	0.013 U	0.012 U	0.013 U	0.013 U	0.013 U	0.016 U	0.015 U	0.015 U	0.013 U	0.013 U	**
Chloroethane	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.014 U	0.017 U	0.016 U	0.016 U	0.014 U	0.014 U	1.9
1,1-Dichloroethene	0.0035 U	0.0035 U	0.0035 U	0.0036 U	0.0038 U	0.0038 U	0.0045 U	0.0042 U	0.0042 U	0.0038 U	0.0038 U	0.4
Acetone	0.120 JB	0.1 JB	0.020 U	0.084 JB	0.160 J	0.110 J	0.140 J	0.093 J	0.077 J	0.076 J	0.094 JB	0.2
Carbon disulfide	0.0022 U	0.02 JB	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.029 J	0.0027 U	0.0027 U	0.0024 U	0.022 J	2.7
Methylene Chloride	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.014 U	0.013 U	0.013 U	0.012 U	0.012 U	0.1
trans-1,2-Dichloroethene	0.0039 U	0.0039 U	0.0039 U	0.004 U	0.0042 U	0.0042 U	0.005 U	0.0047 U	0.0047 U	0.0042 U	0.0042 U	**
1,1-Dichloroethane	0.0016 U	0.0017 U	0.0016 U	0.017 U	0.0018 U	0.0018 U	0.0021 U	0.002 U	0.002 U	0.0018 U	0.0018 U	0.2
2-Butanone	0.028 J	0.017 U	0.017 U	0.018 U	0.019 U	0.019 U	0.022 U	0.021 U	0.021 U	0.019 U	0.019 U	0.3
Carbon Tetrachloride	0.0027 U	0.0027 U	0.0027 U	0.0028 U	0.0029 U	0.0029 U	0.0034 U	0.0033 U	0.0032 U	0.0029 U	0.0029 U	0.6
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U	0.0022 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0021 U	0.0021 U	**
Chloroform	0.0021 U	0.0021 U	0.0021 U	0.0022 U	0.0023 U	0.0023 U	0.0027 U	0.0026 U	0.0026 U	0.0023 U	0.0023 U	0.3
1,1,1-Trichloroethane	0.0025 U	0.0026 U	0.0025 U	0.0026 U	0.0028 U	0.0028 U	0.0033 U	0.0031 U	0.0031 U	0.0028 U	0.0028 U	0.8
Benzene	0.0024 U	0.0025 U	0.0024 U	0.0025 U	0.0027 U	0.0026 U	0.0031 U	0.0029 U	0.0029 U	0.0026 U	0.0026 U	0.06
1,2-Dichloroethane	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0024 U	0.0023 U	0.0023 U	0.002 U	0.002 U	0.1
Trichloroethene	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0024 U	0.0023 U	0.0023 U	0.002 U	0.002 U	0.7
1,2-Dichlororpropane	0.0024 U	0.0025 U	0.0024 U	0.0025 U	0.0026 U	0.0026 U	0.0031 U	0.0029 U	0.0029 U	0.0026 U	0.0026 U	**
Bromodichloromethane	0.002 U	0.0021 U	0.002 U	0.0021 U	0.0022 U	0.0022 U	0.0026 U	0.0025 U	0.0025 U	0.0022 U	0.0022 U	**
4-Methyl-2-Pentanone	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.015 U	0.015 U	0.015 U	0.013 U	0.013 U	1.0
Toluene	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0027 U	0.0027 U	0.0032 U	0.003 U	0.003 U	0.0027 U	0.0027 U	1.5
t-1,3-Dichloropropene	0.0022 U	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.0028 U	0.0027 U	0.0027 U	0.0024 U	0.0024 U	**
cis-1,3-Dichloropropene	0.002 U	0.002 U	0.002 U	0.0021 U	0.0022 U	0.0022 U	0.0026 U	0.0024 U	0.0024 U	0.0022 U	0.0022 U	**
1,1,2-Trichloroethane	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.002 U	0.0019 U	0.0023 U	0.0022 U	0.0022 U	0.0019 U	0.0019 U	**
2-Hexanone	0.022 U	0.022 U	0.022 U	0.023 U	0.024 U	0.024 U	0.028 U	0.027 U	0.027 U	0.024 U	0.024 U	**
Dibromochloromethane	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0018 U	0.0017 U	0.0017 U	0.0015 U	0.0015 U	N/A
Tetrachloroethene	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0049 U	0.0048 U	0.0057 U	0.0054 U	0.0054 U	0.0048 U	0.0048 U	1.4
Chlorobenzene	0.0022 U	0.0022 U	0.0022 U	0.023 U	0.0024 U	0.0024 U	0.0028 U	0.0027 U	0.0027 U	0.0024 U	0.0024 U	0.6
Ethyl Benzene	0.0096 J	0.0022 U	0.0022 U	0.0022 U	0.0024 U	0.0023 U	0.0028 U	0.0026 U	0.0026 U	0.0023 U	0.0023 U	5.5
p&m-Xylenes	0.0093 J	0.0053 U	0.0053 U	0.0054 U	0.015 J	0.011 J	0.0067 U	0.0064 U	0.0064 U	0.0057 U	0.0057 U	**
o-Xylene	0.013 J	0.0024 U	0.0023 U	0.0024 U	0.0026 U	0.0025 U	0.003 U	0.0028 U	0.0028 U	0.0025 U	0.0025 U	**
Styrene	0.0028 U	0.0028 U	0.0028 U	0.0029 U	0.0031 U	0.003 U	0.0036 U	0.0034 U	0.0034 U	0.003 U	0.003 U	**
Bromoform	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0021 U	0.002 U	0.0024 U	0.0023 U	0.0023 U	0.002 U	0.002 U	**
1,1,2,2-Tetrachloroethane	0.0019 U	0.0019 U	0.0019 U	0.002 U	0.0021 U	0.002 U	0.0024 U	0.0023 U	0.0023 U	0.002 U	0.002 U	0.6
Total VOCs	0.180	0.120	0	0.084	0.175	0.121	0.169	0.093	0.077	0.076	0.116	10

Notes:

* Soil cleanup guidance values from NYSDEC, TAGM 4046, April 1995

**No guidance value published in this reference

MDL = Method Detection Limit

J = Indicates an estimated value.

U = Indicates the compound was analzyed for but was not detected.

Highlighted concentrations exceed their respective TAGM value.

N/A = not available

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	PBL-1	PBL-1DL	PBL-2	PBL-5	PBL-5DL	PBL-7	PBL-7RE	PBL-8	PBL-8DL	PBL-8A	PBL-8ARE	PBL-9	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	5'-5.5'	5'-5.5'	6'-6.5'	8'-8.5'	8'-8.5'	7'-7.5'	7'-7.5'	8'-8.5'	8'-8.5'	9'-9.5'	9'-9.5'	14'-14.5'	
Sample Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Sample Date:	7/26/2006	7/26/2006	7/26/2006	7/25/2006	7/25/2006	7/17/2006	7/17/2006	7/14/2006	7/14/2006	7/14/2006	7/14/2006	7/20/2006	
Dilution Factor	10	50	1	1	5	1	1	1	10	1/1/1900	1/1/1900		
Concentration Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270:													
1,2,4-Trichlorobenzene	0.690 U	3.400 UD	0.069 U	0.069 U	0.340 UD	0.074 U	0.074 U	0.089 U	0.890 UD	0.084 U	0.084 U	0.074 U	0.7
1,2-Dichlorobenzene	0.600 U	3.000 UD	0.061 U	0.061 U	0.300 UD	0.065 U	0.065 U	0.079 U	0.790 UD	0.074 U	0.074 U	0.065 U	**
1,3-Dichlorobenzene	0.630 U	3.100 UD	0.064 U	0.063 U	0.320 UD	0.068 U	0.068 U	0.082 U	0.820 UD	0.077 U	0.077 U	0.068 U	0.3
1,4-Dichlorobenzene	0.710 U	3.500 UD	0.071 U	0.071 U	0.350 UD	0.076 U	0.076 U	0.092 U	0.920 UD	0.087 U	0.087 U	0.076 U	1.7
2,2-oxybis(1-Chloropropane)	0.650 U	3.200 UD	0.065 U	0.065 U	0.320 UD	0.070 U	0.070 U	0.084 U	0.840 UD	0.079 U	0.079 U	0.070 U	**
2,4,5-Trichlorophenol	0.610 U	3.100 UD	0.062 U	0.062 U	0.310 UD	0.066 U	0.066 U	0.080 U	0.800 UD	0.075 U	0.075 U	0.066 U	**
2,4,6-Trichlorophenol	0.590 U	2.900 UD	0.060 U	0.059 U	0.300 UD	0.064 U	0.064 U	0.077 U	0.770 UD	0.072 U	0.072 U	0.064 U	**
2,4-Dichlorophenol	0.740 U	3.700 UD	0.075 U	0.075 U	0.370 UD	0.080 U	0.080 U	0.097 U	0.970 UD	0.091 U	0.091 U	0.080 U	0.4
2,4-Dimethylphenol	0.640 U	3.200 UD	0.064 U	0.064 U	0.320 UD	0.069 U	0.069 U	13.000 E	17.000 D	0.078 U	0.870	0.069 U	**
2,4-Dinitrophenol	3.400 U	17.000 UD	0.350 U	0.340 U	1.700 UD	0.370 U	0.370 U	0.450 U	4.500 UD	0.420 U	0.420 U	0.370 U	0.2
2,4-Dinitrotoluene	0.590 U	2.900 UD	0.060 U	0.059 U	0.300 UD	0.064 U	0.064 U	0.077 U	0.770 UD	0.072 U	0.072 U	0.064 U	1.0
2,6-Dinitrotoluene	0.570 U	2.800 UD	0.057 U	0.057 U	0.280 UD	0.061 U	0.061 U	0.074 U	0.740 UD	0.070 U	0.070 U	0.061 U	1.0
2-Chloronaphthalene	0.670 U	3.300 UD	0.067 U	0.067 U	0.330 UD	0.072 U	0.072 U	0.087 U	0.870 UD	0.082 U	0.082 U	0.072 U	**
2-Chlorophenol	0.640 U	3.200 UD	0.065 U	0.064 U	0.320 UD	0.069 U	0.069 U	0.083 U	0.830 UD	0.079 U	0.079 U	0.069 U	0.80
2-Methylnaphthalene	0.850 J	3.400 UD	0.068 U	0.067 U	0.340 UD	0.260 J	0.260 J	0.300 J	0.870 UD	0.300 J	0.280 J	0.072 U	36.4
2-Methylphenol	0.670 U	3.300 UD	0.067 U	0.067 U	0.330 UD	0.072 U	0.072 U	**1.900**	**1.700** JD	**0.110** J	0.082 U	0.072 U	0.100 or MDL
2-Nitroaniline	0.510 U	2.500 UD	0.052 U	0.051 U	0.260 UD	0.055 U	0.055 U	0.066 U	0.660 UD	0.062 U	0.062 U	0.055 U	0.430 or MDL
2-Nitrophenol	0.620 U	3.100 UD	0.062 U	0.062 U	0.310 UD	0.067 U	0.067 U	0.080 U	0.800 UD	0.076 U	0.076 U	0.067 U	0.330 or MDL
3,3-Dichlorobenzidine	0.690 U	3.400 UD	0.069 U	0.069 U	0.340 UD	0.074 U	0.074 U	0.089 U	0.890 UD	0.084 U	0.084 U	0.074 U	**
3+4-Methylphenols	0.630 U	3.200 UD	0.064 U	0.064 U	0.320 UD	0.068 U	0.068 U	5.000 E	5.400 D	0.340 J	0.330 J	0.068 U	**
3-Nitroaniline	0.520 U	**2.600**	0.053 U	0.052 U	0.260 UD	0.057 U	0.057 U	0.068 U	0.680 UD	0.064 U	0.064 U	0.057 U	0.500 or MDL
4,6-Dinitro-2-methylphenol	0.780 U	3.900 UD	0.079 U	0.078 U	0.390 UD	0.084 U	0.084 U	0.100 U	1.000 UD	0.095 U	0.095 U	0.084 U	**
4-Bromophenyl-phenylether	0.600 U	3.000 UD	0.061 U	0.060 U	0.300 UD	0.065 U	0.065 U	0.078 U	0.780 UD	0.073 U	0.073 U	0.065 U	**
4-Chloro-3-methylphenol	0.550 U	2.800 UD	0.056 U	0.056 U	0.280 UD	0.060 U	0.060 U	0.072 U	0.720 UD	0.068 U	0.068 U	0.060 U	0.240 or MDL
4-Chloroaniline	0.480 U	2.400 UD	0.048 U	0.048 U	0.240 UD	0.052 U	0.052 U	0.062 U	0.620 UD	0.059 U	0.059 U	0.052 U	0.220 or MDL
4-Chlorophenyl-phenylether	0.630 U	3.200 UD	0.064 U	0.064 U	0.320 UD	0.069 U	0.069 U	0.083 U	0.830 UD	0.078 U	0.078 U	0.069 U	**
4-Nitroaniline	0.690 U	3.400 UD	0.069 U	0.069 U	0.340 UD	0.074 U	0.074 U	0.089 U	0.890 UD	0.300 J	0.084 U	0.074 U	**
4-Nitrophenol	0.500 U	2.500 UD	0.050 U	0.050 U	0.250 UD	0.054 U	0.054 U	0.065 U	0.650 UD	0.061 U	0.061 U	0.054 U	0.100 or MDL
Acenaphthene	14.000	21.000 D	0.072 U	0.320 J	0.360 UD	0.077 U	0.077 U	0.093 U	0.930 UD	0.110 J	0.110 J	0.077 U	50.0
Acenaphthylene	21.000	38.000 D	0.066 U	0.140 J	0.330 UD	0.070 U	0.070 U	0.085 U	0.850 UD	0.083 J	0.080 J	0.070 U	41.0
Anthracene	28.000	46.000 D	0.088 J	0.820	0.850 JD	0.100 J	0.100 J	0.079 U	0.790 UD	0.180 J	0.180 J	0.065 U	50.00
Benzo(a)anthracene	**27.000**	**37.000** D	0.130 J	**2.200**	**2.200** D	0.061 U	0.094 J	0.073 U	**0.730** UD	**0.290** J	**0.280** J	0.061 U	0.224 or MDL
Benzo(a)pyrene	**24.000**	11.000 JD	**0.110** J	**2.300**	**2.200** D	0.069 U	0.069 U	0.084 U	**0.840** UD	**0.300** J	0.079 U	0.069 U	0.061 or MDL
Benzo(b)fluoranthene	**23.000**	25.000 D	0.100 J	**3.700** E	**3.000** D	0.048 U	0.048 U	0.057 U	0.570 UD	0.460 J	0.400 J	0.048 U	1.10
Benzo(g,h,I)perylene	4.500	10.000 JD	0.067 U	0.670	1.000 JD	0.072 U	0.072 U	0.086 U	0.860 UD	0.270 J	0.430 J	0.072 U	50.0
Benzo(k)fluoranthene	**7.700**	**11.000** D	0.089 U	**1.300**	1.000 JD	0.095 U	0.095 U	0.110 U	1.100 UD	0.180 J	0.190 J	0.095 U	1.1
bis(2-Chloroethoxy)methane	0.660 U	3.300 UD	0.067 U	0.066 U	0.330 UD	0.071 U	0.071 U	0.086 U	0.860 UD	0.081 U	0.081 U	0.071 U	**
bis(2-Chloroethyl)ether	0.630 U	3.200 UD	0.064 U	0.064 U	0.320 UD	0.069 U	0.069 U	0.083 U	0.830 UD	0.078 U	0.078 U	0.069 U	**
bis(2-Ethylhexyl)phthalate	0.770 U	3.900 UD	0.078 U	0.077 U	0.390 UD	0.083 U	0.083 U	0.100 U	1.000 UD	0.094 U	0.100 J	0.083 U	50.0
Butylbenzylphthalate	0.650 U	3.200 UD	0.066 U	0.065 U	0.330 UD	0.070 U	0.070 U	0.084 U	0.840 UD	0.080 U	0.080 U	0.070 U	50.0
Carbazole	1.000 J	3.100 UD	0.062 U	0.370 J	0.350 JD	0.066 U	0.066 U	0.080 U	0.800 UD	0.075 U	0.075 U	0.066 U	**
Chrysene	**24.000**	**35.000** D	0.130 J	**2.100**	2.100 D	0.078 U	0.390 J	0.094 U	0.940 UD	0.340 J	0.340 J	0.078 U	0.60
Dibenz(a,h)anthracene	**0.820** J	2.500 UD	0.051 U	**0.063** J	0.250 UD	0.054 U	0.054 U	0.066 U	0.660 UD	0.062 U	0.062 U	0.054 U	0.014 or MDL
Dibenzofuran	4.500	6.500 JD	0.067 U	0.180 J	0.330 UD	0.098 J	0.100 J	0.086 U	0.860 UD	0.120 J	0.120 J	0.072 U	6.2
Diethylphthalate	0.690 U	3.500 UD	0.070 U	0.070 U	0.350 UD	0.075 U	0.075 U	0.090 U	0.900 UD	0.085 U	0.085 U	0.075 U	7.1
Dimehylphthalate	0.650 U	3.200 UD	0.065 U	0.065 U	0.320 UD	0.070 U	0.070 U	0.084 U	0.840 UD	0.079 U	0.079 U	0.070 U	2.0
Di-n-butylphthalate	0.610 U	3.100 UD	0.062 U	0.061 U	0.310 UD	0.066 U	0.066 U	0.080 U	0.800 UD	0.075 U	0.075 U	0.066 U	8
Di-n-octyl phthalate	0.680 U	3.400 UD	0.069 U	0.069 U	0.340 UD	0.074 U	0.074 U	0.089 U	0.890 UD	0.084 U	0.084 U	0.074 U	50.0
Fluoranthene	37.000 E	**77.000** D	0.250 J	3.600 E	4.800 D	0.140 J	0.130 J	0.078 U	0.780 UD	0.520	0.410 J	0.065 U	50.0
Fluorene	33.000 E	**57.000** D	0.086 J	0.370 J	0.340 UD	0.120 J	0.120 J	0.088 U	0.880 UD	0.120 J	0.110 J	0.073 U	50.0
Hexachlorobenzene	0.640 U	3.200 UD	0.065 U	0.064 U	0.320 UD	0.069 U	0.069 U	0.084 U	0.840 UD	0.079 U	0.079 U	0.069 U	0.41
Hexachlorobutadiene	0.620 U	3.100 UD	0.062 U	0.062 U	0.310 UD	0.067 U	0.067 U	0.080 U	0.800 UD	0.076 U	0.076 U	0.067 U	**
Hexachlorocyclopentadiene	0.640 U	3.200 UD	0.065 U	0.064 U	0.320 UD	0.069 U	0.069 U	0.083 U	0.830 UD	0.079 U	0.079 U	0.069 U	**
Hexachloroethane	0.680 U	3.400 UD	0.069 U	0.068 U	0.340 UD	0.074 U	0.074 U	0.089 U	0.890 UD	0.084 U	0.084 U	0.074 U	0.4
Indeno(1,2,3-cd)pyrene	**3.500** J	**16.000** JD	0.052 U	0.510 U	1.700 JD	0.055 U	0.055 U	0.066 U	0.660 UD	0.120 J	0.190 J	0.110 J	3.20
Isophorone	0.600 U	3.000 UD	0.061 U	0.061 U	0.300 UD	0.065 U	0.065 U	0.078 U	0.780 UD	0.074 U	0.074 U	0.065 U	4.4
Naphthalene	12.000	**17.000** JD	0.069 U	0.160 J	0.340 UD	0.200 J	0.200 J	0.210 J	0.890 UD	0.300 J	0.300 J	0.074 U	13.0
Nitrobenzene	0.880 U	4.400 UD	0.089 U	0.088 U	0.440 UD	0.095 U	0.095 U	0.110 U	1.100 UD	0.110 U	0.110 U	0.095 U	0.200 or MDL
N-Nitroso-di-n-propylamine	0.660 U	3.300 UD	0.067 U	0.067 U	0.330 UD	0.072 U	0.072 U	0.087 U	0.870 UD	0.081 U	0.081 U	0.072 U	**
N-Nitrosodiphenylamine	0.660 U	3.300 UD	0.067 U	0.066 U	0.330 UD	0.071 U	0.071 U	0.086 U	0.860 UD	0.081 U	0.081 U	0.071 U	**
Pentachlorophenol	0.930 U	4.600 UD	0.094 U	0.093 U	0.470 UD	0.100 U	0.100 U	0.120 U	**1.200** UD	0.110 U	0.110 U	0.100 U	1.0 or MDL
Phenanthrene	**69.000** E	**150.000** D	0.320 J	2.700	3.200 D	0.440	0.450	0.093 J	0.830 UD	0.550	0.550	0.069 U	50.0
Phenol	0.610 U	3.000 UD	0.061 U	0.061 U	0.310 UD	0.066 U	0.066 U	0.350 J	**0.790** UD	0.075 U	0.075 U	0.066 U	0.03 or MDL
Pyrene	**60.000** E	**97.000** D	0.380 J	3.800 E	3.700 D	0.640	0.580	0.092 U	0.920 UD	0.820	1.100	0.077 U	50.0
Total SVOCs:	394.87	822.4	1.59	24.79	44.35	1.998	2.424	20.85	24.10	5.81	6.37	0.11	500

Notes:
* Soil cleanup guidance values from NYSDEC, TAGM 4046, April 1995
**No guidance value published in this reference
Highlighted concentrations exceed their respective TAGM value.
MDL = Method Detection Limit
J = Indicates an estimated value.

U =The compound was not detected at the indicated concentration.
D = Identifies all compounds identified in an analysis at a secondary dilution factor.

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	PBL-1	PBL-2	PBL-5	PBL-7	PBL-8	PBL-8A	PBL-9	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	5'-5.5'	6'-6.5'	8'-8.5'	7'-7.5'	8'-8.5'	9'-9.5'	14'-14.5'	
Sample Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Sample Date:	7/26/2006	7/26/2006	7/25/2006	7/17/2006	7/14/2006	7/14/2006	7/20/2006	
Concentration Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Metals								
by EPA Method 6010B/7471:								
Aluminum	6,510	4,920	4,310	1,980	8,500	6,950	6,920	33,000
Antimony	1.8 JN	0.41 U	3.3 JN	0.43 U	0.51 U	26.6	3.2 JN	NA
Arsenic	4.4	4.1	10.9	**59.90**	**1270**	**680**	**12.8**	12.0
Barium	39.3 E	25.3 E	397	102.0	509	304	26 J	600
Beryllium	0.45 J	0.34 J	0.32 J	0.53 J	**2.62**	1.21	0.38 J	1.75
Cadmium	0.14 J	0.04 U	1.7	**1.09**	**5.02**	**1.19**	0.04 U	1
Calcium	2,150 E	2,530 E	16,500 E	5,420	18,700	32,600	3,810	35,000
Chromium	11.9	12.6	13.7	35.90	**65.60**	39.10	11	40
Cobalt	6.7	6.2 JN	6.3 N	7.23	20.20	11.40	6.2 JN	60
Copper	41.2	16.7	287	**1,010**	**152**	**524**	12.4	50
Iron	14,900	16,100	18,600	58,600	96,300	55,500	14,000	550,000
Lead	75.8	34.2	**805**	152	480	**576**	43.8	**
Magnesium	2,460	2,150	2,070	804	**8,610**	**7,380**	2,250	5,000
Manganese	151 E	205 E	303 E	166.0	460	280	161 E	5,000
Mercury [1]	0.164	0.1	0.694	**0.36**	**1.40**	**1.30**	0.06	0.20
Nickel	14.4	13	39.9	**33.2**	**140**	**117**	11.8	25
Potassium	1,380	945	726	6.97 U	8.30 U	1,200	798	43,000
Selenium	1.5 N	0.42 U	1.0 J	**5.28**	**53.00**	**24.60**	2.3 N	3.9
Silver	0.57 J	0.65 J	1.2 J	0.10 U	4.05	0.119 U	0.47 J	NA
Sodium	775 N	1,030 N	291 JN	223 J	2,000	38.80 U	176 JN	8,000
Thallium	1.2	1.3	0.640 U	0.693 U	9.710	5.390	0.72 J	NA
Vanadium	18.4 E	19.9 E	16 E	18.1	62	35.5	16.4 E	300
Zinc	**183**	**50.2**	**771**	**495**	**2,190**	**718**	48.9	50.0
Total Metals	28,727	28,065	45,155	69,114	139,534	106,975	28,311	NA

Notes:

*Standards were derived from the highest of Eastern USA Background Levels, an alternative to TAGM values as reported by the NYSDEC for background metals in the lower Hudson Valley.

**Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

Highlighted concentrations exceed their respective TAGM value.

Mercury analyzed by EPA Method 7471

MDL = Method Detection Limit

NA = Not Analyzed

J = Indicates an estimated value.

U = Indicates the compound was analzyed for but was not detected.

N= Presumptive Evidence of a Compound

E = Value exceeds instrument calibration range

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	PBL-1	PBL-2	PBL-5	PBL-7	PBL-8	PBL-8A	PBL-9	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	5'-5.5'	6'-6.5'	8'-8.5'	7'-7.5'	8'-8.5'	9'-9.5'	14'-14.5'	
Sample Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Sample Date:	7/26/2006	7/26/2006	7/25/2006	7/17/2006	7/14/2006	7/14/2006	7/20/2006	
Concentration Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PCBs by EPA Method 8082:								
AROCLOR 1016	0.0031 U	0.0031 U	0.003 U	0.0033 U	0.004 U	0.0038 U	0.0033 U	10(1)
AROCLOR 1221	0.0048 U	0.0048 U	0.0047 U	0.0051 U	0.006 U	0.0058 U	0.0051 U	10(1)
AROCLOR 1232	0.0071 U	0.0072 U	0.007 U	0.0077 U	0.009 U	0.0087 U	0.0077 U	10(1)
AROCLOR 1242	0.0063 U	0.0064 U	0.0062 U	0.0068 U	0.008 U	0.0078 U	0.0068 U	10(1)
AROCLOR 1248	0.0031 U	0.0031 U	0.003 U	0.0033 U	0.004 U	0.0038 U	0.0033 U	10(1)
AROCLOR 1254	0.002 U	0.002 U	0.002 U	0.0022 U	0.003 U	0.0025 U	0.0022 U	10(1)
AROCLOR 1260	0.0051 U	0.0052 U	0.095	3.500 E	0.370 P	0.450	0.0055 U	10(1)
Total Petroleum Hydrocarbons (TPH) by EPA Method 8015	3,420	17.90	113.00	NA	1,560	808.00	ND	**
Qualitative TPH GC Fingerprint by EPA Method 8015	HW	HW	HW	M	M+B	M+B	NA	**
Total Organic Carbon by EPA Method 9060	>19488	3,500	>19362	NA	NA	NA	4700	

Notes:

* Soil cleanup guidance values from NYSDEC, TAGM 4046, April 1995

**No guidance value published in this reference

Highlighted concentrations exceed their respective TAGM value.

MDL = Method Detection Limit

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

NA= not Analyzed.

E= Value Exceeds Calibration Range

HW= #6 Fuel Oil, Weathered

M= 50 W Lubricating Oil

B= Some Unknown Fuel Oil

P= For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

(1) = This soil cleanup objective applies to subsurface concentrations to protect groundwater quality

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	S-2	S-3	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	2' - 2.5'	2.5' - 3'	
Sample Type:	Grab	Grab	
Sample Date:	12/5/2006	12/5/2006	
Concentration Unit:	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds			
(VOCs) by EPA Method 8260:			
Chloromethane	ND U	ND U	**
Vinyl Chloride	ND U	ND U	0.2
Bromomethane	ND U	ND U	**
Chloroethane	ND U	ND U	1.9
1,1-Dichloroethene	ND U	ND U	0.4
Acetone	ND U	ND U	0.2
Carbon disulfide	ND U	ND U	2.7
Methylene Chloride	ND U	ND U	0.1
trans-1,2-Dichloroethene	ND U	ND U	**
1,1-Dichloroethane	ND U	ND U	0.2
2-Butanone	ND U	ND U	0.3
Carbon Tetrachloride	ND U	ND U	0.6
cis-1,2-Dichloroethene	ND U	ND U	**
Chloroform	ND U	ND U	0.3
1,1,1-Trichloroethane	ND U	ND U	0.8
Benzene	ND U	ND U	0.06
1,2-Dichloroethane	ND U	ND U	0.1
Trichloroethene	ND U	ND U	0.7
1,2-Dichlororpropane	ND U	ND U	**
Bromodichloromethane	ND U	ND U	**
4-Methyl-2-Pentanone	ND U	ND U	1.0
Toluene	ND U	ND U	1.5
t-1,3-Dichloropropene	ND U	ND U	**
cis-1,3-Dichloropropene	ND U	ND U	**
1,1,2-Trichloroethane	ND U	ND U	**
2-Hexanone	ND U	ND U	**
Dibromochloromethane	ND U	ND U	**
Tetrachloroethene	ND U	ND U	1.4
Chlorobenzene	ND U	ND U	0.6
Ethyl Benzene	0.0082 J	0.0059 J	5.5
p&m-Xylenes	0.012 J	0.0066 J	**
o-Xylene	ND U	ND U	**
Styrene	ND U	ND U	**
Bromoform	ND U	ND U	**
1,1,2,2-Tetrachloroethane	ND U	ND U	0.6
Total VOCs	0.0202	0.0125	10

Notes:
* Soil cleanup guidance values from NYSDEC, TAGM 4046, April 1995
**No guidance value published in this reference
J = Indicates an estimated value.
U = Indicates the compound was analzyed for but was not detected.
Highlighted concentrations exceed their respective TAGM value.

Sample ID:	S-2	S-3	S-3RE	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	2' - 2.5'	2.5' - 3'	2.5' - 3'	
Sample Type:	Grab	Grab	Grab	
Sample Date:	12/5/2006	12/5/2006	12/5/2006	
Concentration Unit:	mg/kg	mg/kg	mg/kg	mg/kg
Semi-Volatile Organic Compounds				
(SVOCs) by EPA Method 8270:				
Acenaphthene	0.110 J	0.120 J	0.110 J	50
Acenaphthylene	ND U	ND U	ND U	41
Anthracene	0.320 J	0.300 J	0.300 J	50
Benzo(a)anthracene	**0.520**	**0.840**	**0.860**	0.224 or MDL
Benzo(a)pyrene	**0.380** J	**0.640**	**0.650**	0.061 or MDL
Benzo(b)fluoranthene	0.500	0.820	0.930	1.10
Benzo(g,h,i)perylene	0.120 J	0.490	0.270 J	50
Benzo(k)fluoranthene	0.250 J	0.310 J	0.320 J	1.1
Chrysene	0.490	**0.740**	**0.780**	0.60
Dibenz(a,h)anthracene	ND U	ND U	ND U	0.014 or MDL
Fluoranthene	1.400	1.300	1.800	50
Fluorene	0.110 J	0.110 J	0.110 J	50
Indeno(1,2,3-cd)pyrene	0.130 J	0.390	0.240 J	3
Naphthalene	0.100 J	ND U	ND U	13
Phenanthrene	1.00	1.100	1.100	50
Pyrene	1.10	2.80	1.80	50
Total SVOCs:	6.530	9.960	9.270	500

Notes:

* Soil cleanup guidance values from NYSDEC, TAGM 4046, April 1995

**No guidance value published in this reference

Highlighted concentrations exceed their respective TAGM value.

MDL = Method Detection Limit

J = Indicates an estimated value.

U = Indicates the compound was analzyed for but was not detected.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	S-1		TAGM Recommended Soil Conc. *
Sample Depth (ft.):			
Sample Type:	Grab		
Sample Date:	12/5/2006		
Concentration Unit:	mg/kg		mg/kg
Metals			
by EPA Methods 6010B/7471:			
Aluminum	4,370		33,000
Antimony	7.280		NA
Arsenic	2.810		12.0
Barium	41.3		600
Beryllium	0.253	J	1.75
Cadmium	0.546	J	1
Calcium	3,620		35,000
Chromium	14.20		40
Cobalt	4.30	J	60
Copper	32.0		50
Cyanide	NA		NA
Iron	9,130		550,000
Lead	82.4		**
Magnesium	1,330		5,000
Manganese	216.0		5,000
Mercury	0.12		0.20
Nickel	9.81		25
Potassium	404.0	J	43,000
Selenium	ND	U	3.9
Silver	0.449	J	NA
Sodium	224	J	8,000
Thallium	ND	U	NA
Vanadium	16.3		300
Zinc	**59**		50.0
Total Metals	19,565		**

Notes:

*Standards were derived from the highest of Eastern USA Background Levels, an alternative to TAGM values as reported by the NYSDEC for background metals

**No guidance value published in this reference

***Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

Highlighted concentrations exceed their respective TAGM value.

MDL = Method Detection Limit

NA = Not Analyzed

J = Indicates an estimated value.

ND=Not detected

U = Indicates the compound was analzyed for but was not detected.

TABLE 1 (CONT.)
SUMMARY OF SOIL ANALYTICAL RESULTS - 2006
CON EDISON - FORMER KENT AVENUE POWER STATION
BROOKLYN, NEW YORK

Sample ID:	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-8DL	S-9	S-9DL	TAGM Recommended Soil Conc. *
Sample Depth (ft.):	3' - 3.5'	2' - 2.5'	2.5' - 3'	3.5' - 4'	4' - 4.5'	3' - 3.5'	4.5' - 5'	3' - 3.5'	3' - 3.5'	2.5' - 3'	2.5' - 3'	
Sample Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Sample Date:	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	12/5/2006	
Concentration:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PCBs by EPA Method 8082:												
AROCLOR 1016	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1221	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1232	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1242	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1248	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1254	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	10(1)
AROCLOR 1260	0.1	0.260	0.130	0.160	0.230	0.089	0.050	0.600	0.690	0.590 E	0.700 D	10(1)
Total Petroleum Hydrocarbons (TPH) by EPA Method 8015	25.7	127.0	53.6	89.0	96.4	183.0	51.1	64.4	NA	315.0	NA	**
Qualitative TPH GC Fingerprint by EPA Method 8015	E	E	E	E	E	M	E	E	NA	E	NA	**

Notes:

* Soil cleanup guidance values (subsurface) from NYSDEC, TAGM 4046, April 1995

**No guidance value published in this reference

MDL = Method Detection Limit ND = Not Detected

D = Identifies all compounds identified in an analysis at a secondary dilution factor.
U = Indicates the compound was analzyed for but was not detected.
E= No Calibrated Fuel Type Detected
M= 50 W Lubricating Oil

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

(1) = This soil cleanup objective applies to subsurface concentrations to protect groundwater quality

TABLE 2
SUMMARY OF VOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-1								
Compass Direction				North	East				South		West	
Sample Name				PBL-1-5-N(12')	PBL-1-10-E(6')	PBL-1-20-E(8')	PBL-1-30-E(9')	PBL-1-30-E(9')F.D.	PBL-1-5-S(12')	PBL-1-10-S(10')	PBL-1-5-W(9')	PBL-1-10-W(10')
Sample Date				12/8/2009	12/10/2009	12/11/2009	12/15/2009	12/15/2009	12/8/2009	12/8/2009	12/8/2009	12/8/2009
Depth (ft. bgs)				12	6	8	9	9	12	10	9	10
VOCs (mg/Kg)	**Residential[a] (mg/Kg)**	**Restricted Residential[b] (mg/Kg)**	**Industrial[c] (mg/Kg)**									
Dichlorodifluoromethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Chloromethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
vinyl chloride	0.21	0.9	27	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Bromomethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Chloroethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Trichlorofluoromethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,1-Dichloroethene	100	100	1,000	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,1,2-Trichloro-1,2,2-trifluoroethane	100	--	--	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Acetone	100	100	1,000	0.024 J	0.071	0.028	0.024 J	0.019 J	3.0 U	1.6 U	1.5 U	1.6 U
Carbon disulfide	100	--	--	0.028 U	0.0018 J	0.0065 U	0.020 J	0.018 J	0.20 J	0.084 J	0.13 J	0.62 U
Methyl acetate				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Methylene Chloride	51	100	1,000	0.11 U	0.024 U	0.026 U	0.010 JB	0.11 U	1.2 U	0.64 U	0.61 U	0.62 U
trans-1,2-Dichloroethene	100	100	1,000	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Methyl tert-butyl ether	62	100	1,000	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,1-Dichloroethane	19	26	480	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
cis-1,2-Dichloroethene	59	100	1,000	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Methyl Ethyl Ketone	100	100	1,000	0.055 U	0.012 U	0.013 U	0.059 U	0.056 U	0.40 J	0.34 J	0.18 U	0.22 J
Chloroform	10	49	700	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,1,1-Trichloroethane	100	100	1,000	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Cyclohexane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Carbon tetrachloride	1.4	2.4	44	0.028 U	0.006 U	0.0065 J	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Benzene	2.9	4.8	89	0.34	0.006 U	0.0065 U	0.023 J	0.019 J	0.38 J	0.17 J	0.097 J	0.62 U
1,2-Dichloroethane	2.3	3.1	60	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Trichloroethene	10			0.028 U	0.006 U	0.0065 J	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
methylcyclohexane				0.028 U	0.006 U	0.0065 U	0.011 J	0.010 J	1.2 U	0.64 U	0.047 J	0.62 U
1,2-Dichloropropane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Bromodichloromethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
cis-1,3-Dichloropropene				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
methyl isobutyl ketone				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Toluene	100	100	1,000	0.07	0.0003 JB	0.00035 JB	0.028 JB	0.021 JB	5.8	7.2	0.38 J	1.6
trans-1,3-Dichloropropene				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,1,2-Trichloroethane				0.028 U	0.006 U	0.0065	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Tetrachloroethene	5.5	19	300	0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
2-Hexanone				0.055 U	0.012 U	0.013 U	0.059 U	0.056 U	1.2 U	0.64 U	0.61 U	0.62 U
Dibromochloromethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,2-Dibromoethane				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Chlorobenzene	100	100	1,000	0.028 U	0.006 U	0.0065	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Ethylbenzene	30	41	780	0.68	0.006 U	0.0065 U	1.1	0.72	20	7.7	2.8	3.1
Xylenes, Total	100	100	1,000	0.52	0.006 U	0.0065 U	0.92	0.59	21	11	0.67	3.0
Styrene				0.0088	0.006 U	0.0065 U	0.070	0.048	1.2 U	2.4	0.19 J	0.62 U
Bromoform				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
Isopropylbenzene				0.028	0.00067 J	0.0065	0.25	0.20	2.4	0.27 J	0.30 J	0.22 J
1,1,2,2-Tetrachloroethane	35	--	--	0.028 U	0.006 U	0.0065	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,3-Dichlorobenzene				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,4-Dichlorobenzene				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,2-Dichlorobenzene				0.028 U	0.006 U	0.0065	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U
1,2-Dibromo-3-Chloropropane				0.055 U	0.012 U	0.013 U	0.059 U	0.056 U	1.2 U	0.64 U	0.61 U	0.62 U
1,2,4-trichlorobenzene				0.028 U	0.006 U	0.0065 U	0.03 U	0.028 U	1.2 U	0.64 U	0.61 U	0.62 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Restricted Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[c] = Industrial Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).

TABLE 2
SUMMARY OF VOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-2									
Compass Direction				North				East					
Sample Name				PBL-2-10-N(11')	PBL-2-30-N(10')	PBL-2-30-N(10')F.D.	PBL-2-60-N(11')	PBL-2-10-E(6')	PBL-2-10-E(10')	PBL-2-20-E(9')	PBL-2-30-E(9')	PBL-2-60-E(4')	PBL-2-60-E(4')F.D.
Sample Date				12/11/2009	12/15/2009	12/15/2009	12/15/2009	12/11/2009	12/11/2009	12/11/2009	12/11/2009	12/15/2009	12/15/2009
Depth (ft. bgs)				11	10	10	11	6	10	9	9	4	4
VOCs (mg/Kg)	**Residential[a] (mg/Kg)**	**Restricted Residential[b] (mg/Kg)**	**Industrial[c] (mg/Kg)**										
Dichlorodifluoromethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Chloromethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
vinyl chloride	0.21	0.9	27	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Bromomethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Chloroethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Trichlorofluoromethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,1-Dichloroethene	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,1,2-Trichloro-1,2,2-trifluoroethane	100	--	--	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Acetone	100	100	1,000	0.0068 J	0.0079 J	0.0069 J	0.0073 J	0.024 U	0.019 J	0.0039 J	0.0098 J	0.025 U	0.026 U
Carbon disulfide	100	--	--	0.002 J	0.0027 J	0.0023 J	0.0028 J	0.006 U	0.00075 J	0.005 J	0.0024 J	0.0063 U	0.0065 U
Methyl acetate				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Methylene Chloride	51	100	1,000	0.025 U	0.026 U	0.025 U	0.027 U	0.024 U	0.024 U	0.022 U	0.025 U	0.025 U	0.026 U
trans-1,2-Dichloroethene	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Methyl tert-butyl ether	62	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,1-Dichloroethane	19	26	480	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
cis-1,2-Dichloroethene	59	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Methyl Ethyl Ketone	100	100	1,000	0.013 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.013 U
Chloroform	10	49	700	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,1,1-Trichloroethane	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Cyclohexane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Carbon tetrachloride	1.4	2.4	44	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Benzene	2.9	4.8	89	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,2-Dichloroethane	2.3	3.1	60	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Trichloroethene	10			0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
methylcyclohexane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0019 J	0.0061 U	0.0063 U	0.0065 U
1,2-Dichloropropane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Bromodichloromethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
cis-1,3-Dichloropropene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
methyl isobutyl ketone				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Toluene	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.00016 JB	0.0003 JB	0.00025 JB	0.00024 JB	0.0063 U	0.0065 U
trans-1,3-Dichloropropene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,1,2-Trichloroethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Tetrachloroethene	5.5	19	300	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
2-Hexanone				0.013 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.013 U
Dibromochloromethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,2-Dibromoethane				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Chlorobenzene	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Ethylbenzene	30	41	780	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0023 J	0.0061 U	0.0063 U	0.0065 U
Xylenes, Total	100	100	1,000	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.00063 J	0.0061 U	0.0063 U	0.0065 U
Styrene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Bromoform				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
Isopropylbenzene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0021 J	0.0018 J	0.0063 U	0.0065 U
1,1,2,2-Tetrachloroethane	35	--	--	0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,3-Dichlorobenzene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,4-Dichlorobenzene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,2-Dichlorobenzene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U
1,2-Dibromo-3-Chloropropane				0.013 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U	0.013 U	0.013 U
1,2,4-trichlorobenzene				0.0063 U	0.0065 U	0.0062 U	0.0067 U	0.006 U	0.0059 U	0.0055 U	0.0061 U	0.0063 U	0.0065 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Restricted Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[c] = Industrial Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).

TABLE 3
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-1								
Compass Direction				North	East				South		West	
Sample Name				PBL-1-5-N(12')	PBL-1-10-E(6')	PBL-1-20-E(8')	PBL-1-30-E(9')	PBL-1-30-E(9')F.D.	PBL-1-5-S(12')	PBL-1-10-S(10')	PBL-1-5-W(9')	PBL-1-10-W(10')
Sample Date				12/8/2009	12/10/2009	12/11/2009	12/15/2009	12/15/2009	12/8/2009	12/8/2009	12/8/2009	12/8/2009
Depth (ft. bgs)				12	6	8	9	9	12	10	9	10
SVOCs	**Residential[a] (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**									
Phenol	100	100	1,000	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2-Chlorophenol	400	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2-Methylphenol				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
4-Methylphenol	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2-Nitrophenol				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2,4-Dimethylphenol				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2,4-Dichlorophenol	2.0	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
4-Chloro-3-methylphenol				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2,4,6-Trichlorophenol				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2,4,5-Trichlorophenol				0.36 U	0.39 U	0.43 U	40.0 U	19.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2,4-Dinitrophenol	200	--	--	1.10 U	1.20 U	1.30 U	40.0 U	19.0 U	1.20 U	1.30 U	1.2 U	1.2 U
4-Nitrophenol				1.10 U	1.20 U	1.30 U	40.0 U	19.0 U	1.20 U	1.30 U	1.2 U	1.2 U
4,6-Dinitro-2-methylphenol				1.10 U	1.20 U	1.30 U	40.0 U	19.0 U	1.20 U	1.30 U	1.2 U	1.2 U
Pentachlorophenol	2.4	6.7	55	1.10 U	1.20 U	1.30 U	16.0 U	7.4 U	1.20 U	1.30 U	1.2 U	1.2 U
Bis(2-chloroethyl)ether				0.036 U	0.039 U	0.043 U	6.4 U	3.0 U	0.04 U	0.042 U	0.041 U	0.041 U
N-Nitrosodi-n-propylamine				0.036 U	0.039 U	0.043 U	6.4 U	3.0 U	0.04 U	0.042 U	0.041 U	0.041 U
Hexachloroethane				0.036 U	0.039 U	0.043 U	6.4 U	3.0 U	0.04 U	0.042 U	0.041 U	0.041 U
Nitrobenzene	3.7	15	140	0.036 U	0.039 U	0.043 U	6.4 U	3.0 U	0.04 U	0.042 U	0.041 U	0.041 U
Isophorone	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Bis-2-chloroethoxy)methane				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Naphthalene	100	100	1,000	0.70	0.39 U	0.18 J	16.0	9.5	2.3	0.76	7.8	2.2
4-Chloroaniline	200	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Hexachlorobutadiene				0.074 U	0.08 U	0.087 U	6.4 U	3.0 U	0.081 U	0.085 U	0.82 U	0.82 U
2-Methylnaphthalene				0.34 J	0.39 U	0.10 J	9.5	5.7	0.63	0.44	3.7	0.74
Hexachlorocyclopentadiene				0.36 U	0.39 U	0.43 U	16.0 U	7.4 U	0.40 U	0.42 U	0.41 U	0.41 U
2-Chloronaphthalene				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
2-Nitroaniline				0.74 U	0.80 U	0.87 U	16.0 U	7.4 U	0.81 U	0.85 U	0.82 U	0.82 U
Dimethyl phthalate	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Acenaphthylene				0.12 J	0.39 U	0.43 U	10.0	5.7	0.06 J	0.13 J	1.7	0.41 U
2,6-Dinitrotoluene				0.074 U	0.08 U	0.087 U	6.4 U	3.0 U	0.081 U	0.085 U	0.082 U	0.082 U
3-Nitroaniline				0.74 U	0.80 U	0.87 U	16.0 U	7.4 U	0.81 U	0.85 U	0.82 U	0.82 U
Acenaphthene	100	100	1,000	0.085 J	0.073 J	0.91	48.0	30.0	0.88	0.25 J	1.2	0.69
Dibenzofuran				0.36 U	0.39 U	0.43 U	3.4 J	2.0 J	0.40 U	0.42 U	0.16 J	0.41 U
2,4-Dinitrotoluene				0.074 U	0.08 U	0.087 U	6.4 U	3.0 U	0.08 U	0.085 U	0.082 U	0.082 U
Diethyl phthalate	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
4-Chlorophenyl phenyl ether				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Fluorene	100	100	1,000	0.11 J	0.093 J	1.10	31.0	15.0	0.50	0.21 J	1.3	0.25 J
4-Nitroaniline				0.74 U	0.80 U	0.87 U	6.4 U	3.0 U	0.81 U	0.85 U	0.82 U	0.82 U
N-Nitrosodiphenylamine				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
4-Bromophenyl phenyl ether				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Hexachlorobenzene	0.41	--	--	0.036 U	0.039 U	0.043 U	6.4 U	3.0 U	0.04 U	0.042 U	0.041 U	0.041 U
Phenanthrene	100	100	1,000	0.32 J	0.37 J	0.56	81.0	46.0	1.6	0.60	3.6	0.45
Anthracene	100	100	1,000	0.078 J	0.12 J	0.73	26.0 U	15.0 U	0.49	0.16 J	0.96	0.11 J
Carbazole				0.36 U	0.39 U	0.43 U	0.42 J	0.23 J	0.40 U	0.42 U	0.41 U	0.41 U
Di-n-butyl phthalate	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Fluoranthene	100	100	1,000	0.075 J	0.33 J	1.40	25.0	14.0	0.43	0.16 J	0.90	0.084 J
Pyrene	100	100	1,000	0.12 J	0.35 J	1.40 U	36.0	21.0	0.66	0.27 J	1.5	0.12 J
Butyl benzyl phthalate	100			0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
3,3'-Dichlorobenzidine				0.74 U	0.80 U	0.87 U	7.8 U	3.7 U	0.81 U	0.85 U	0.82 U	0.82 U
Benzo(a)anthracene	1	1	11	0.036 U	0.21	0.71	13.0 B	7.0	0.23	0.13	0.51	0.041 U
Chrysene	1	3.9	110	0.36 U	0.24 J	0.69	12.0	6.6	0.21 J	0.11 J	0.48	0.41 U
Bis(2-ethylhexyl)phthalate	50	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Di-n-octyl phthalate	100	--	--	0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Benzo(b)fluoranthene	1	1	11	0.036 U	0.23	0.65	6.7 B	3.9	0.11	0.13	0.21	0.019 J
Benzo(k)fluoranthene	1	3.9	110	0.036 U	0.10	0.26	2.9 J	1.6 J	0.06	0.069	0.12	0.041 U
Benzo(a)pyrene	1	1	1.1	0.029 J	0.21	0.54	9.5 B	5.4 U	0.16	0.16	0.32	0.019 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	11	0.0081 J	0.16	0.39	3.1 J	1.4 J	0.035 J	0.10	0.082	0.041 U
Dibenz(a,h)anthracene	0.33	0.33	1.1	0.036 U	0.046	0.089	0.77 J	0.38 J	0.04 U	0.026 J	0.041 U	0.041 U
Benzo(g,h,i)perylene	100	100	1,000	0.36 U	0.15 J	0.36 J	2.5 J	1.2 J	0.40 U	0.087 J	0.12 J	0.41 U
1,1'-Biphenyl				0.36 U	0.39 U	0.43 U	11.0	6.0 U	0.15 J	0.074 J	0.45	0.11 J
Acetophenone				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Benzaldehyde				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Caprolactam				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U
Atrazine				0.36 U	0.39 U	0.43 U	7.8 U	3.7 U	0.40 U	0.42 U	0.41 U	0.41 U
2,2'-oxybis(1-chloropropane)				0.36 U	0.39 U	0.43 U	6.4 U	3.0 U	0.40 U	0.42 U	0.41 U	0.41 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Table 3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
Green shaded values exceed the Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the Part 375 Industrial Soil Cleanup Objective.

TABLE 3
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-2										PBL-5				
Compass Direction				North				East						North		East	South	West
Sample Name				PBL-2-10-N(11')	PBL-2-30-N(10')	PBL-2-30-N(10')F.D.	PBL-2-60-N(11')	PBL-2-10-E(6')	PBL-2-10-E(10')	PBL-2-20-E(9')	PBL-2-30-E(9')	PBL-2-60-E(4')	PBL-2-60-E(4')F.D.	PBL-5-5-N(6')	PBL-5-10-N(5')	PBL-5-10-E(4')	PBL-5-10-S(2')	PBL-5-2-W(7')
Sample Date				12/11/2009	12/15/2009	12/15/2009	12/15/2009	12/11/2009	12/11/2009	12/11/2009	12/11/2009	12/15/2009	12/15/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Depth (ft. bgs)				11	10	10	11	6	10	9	9	4	4	6	5	4	2	7
SVOCs	**Residential[a] (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**															
Phenol	100	100	1,000	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2-Chlorophenol	400	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2-Methylphenol				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
4-Methylphenol	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2-Nitrophenol				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2,4-Dimethylphenol				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2,4-Dichlorophenol	2.0	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
4-Chloro-3-methylphenol				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2,4,6-Trichlorophenol				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2,4,5-Trichlorophenol				0.41 U	2.2 U	2.1 U	2.3 U	0.40 U	0.39 U	0.36 U	0.41 U	2.1 U	2.2 U	1.9 U	1.9 U	2.1 U	19 U	1.9 U
2,4-Dinitrophenol	200	--	--	1.3 U	2.2 U	2.1 U	2.3 U	1.2 U	1.2 U	1.1 U	1.2 U	2.1 U	2.2 U	1.9 U	1.9 U	2.1 U	19 U	1.9 U
4-Nitrophenol				1.3 U	2.2 U	2.1 U	2.3 U	1.2 U	1.2 U	1.1 U	1.2 U	2.1 U	2.2 U	1.9 U	1.9 U	2.1 U	19 U	1.9 U
4,6-Dinitro-2-methylphenol				1.3 U	2.2 U	2.1 U	2.3 U	1.2 U	1.2 U	1.1 U	1.2 U	2.1 U	2.2 U	1.9 U	1.9 U	2.1 U	19 U	1.9 U
Pentachlorophenol	2.4	6.7	55	1.3 U	0.86 U	0.82 U	0.90 U	1.2 U	1.2 U	1.1 U	1.2 U	0.82 U	0.87 U	0.76 U	0.76 U	0.81 U	7.3 U	0.76 U
Bis(2-chloroethyl)ether				0.041 U	0.35 U	0.33 U	0.36 U	0.040 U	0.039 U	0.036 U	0.041 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
N-Nitrosodi-n-propylamine				0.041 U	0.35 U	0.33 U	0.36 U	0.040 U	0.039 U	0.036 U	0.041 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Hexachloroethane				0.041 U	0.35 U	0.33 U	0.36 U	0.040 U	0.039 U	0.036 U	0.041 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Nitrobenzene	3.7	15	140	0.041 U	0.35 U	0.33 U	0.36 U	0.040 U	0.039 U	0.036 U	0.041 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Isophorone	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Bis-2-chloroethoxy)methane				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Naphthalene	100	100	1,000	0.41 U	0.10 J	0.10 J	0.032 J	0.40 U	0.39 U	0.056 J	0.16 J	0.16 J	0.15 J	0.081 J	0.30 U	0.061 J	0.23 J	0.049 J
4-Chloroaniline	200	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Hexachlorobutadiene				0.82 U	0.35 U	0.33 U	0.36 U	0.081 U	0.079 U	0.073 U	0.82 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2-Methylnaphthalene				0.41 U	0.077 J	0.074 J	0.029 J	0.40 U	0.39 U	0.36 U	0.074 J	0.22 J	0.20 J	0.039 J	0.30 U	0.048 J	0.20 J	0.044 J
Hexachlorocyclopentadiene				0.41 U	0.86 U	0.82 U	0.90 U	0.40 U	0.39 U	0.36 U	0.41 U	0.82 U	0.87 U	0.76 U	0.76 U	0.81 U	7.3 U	0.76 U
2-Chloronaphthalene				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
2-Nitroaniline				0.82 U	0.86 U	0.82 U	0.90 U	0.81 U	0.79 U	0.73 U	0.82 U	0.82 U	0.87 U	0.76 U	0.76 U	0.81 U	7.3 U	0.76 U
Dimethyl phthalate	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Acenaphthylene				0.41 U	0.099 J	0.07 J	0.36 U	0.40 U	0.39 U	0.36 U	0.079 J	0.029 J	0.021 J	0.028 J	0.30 U	0.017 J	2.9 U	0.16 J
2,6-Dinitrotoluene				0.082 U	0.35 U	0.33 U	0.36 U	0.081 U	0.079 U	0.073 U	0.082 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
3-Nitroaniline				0.82 U	0.86 U	0.82 U	0.90 U	0.81 U	0.79 U	0.73 U	0.82 U	0.82 U	0.87 U	0.76 U	0.76 U	0.81 U	7.3 U	0.76 U
Acenaphthene	100	100	1,000	0.41 U	0.053 J	0.033 J	0.36 U	0.40 U	0.39 U	0.12 J	0.39 J	0.041 J	0.057 J	0.31 U	0.30 U	0.081 J	0.53 J	0.064 J
Dibenzofuran				0.41 U	0.037 J	0.024 J	0.36 U	0.40 U	0.39 U	0.36 U	0.18 J	0.073 J	0.079 J	0.31 U	0.30 U	0.061 J	0.24 J	0.034 J
2,4-Dinitrotoluene				0.082 U	0.35 U	0.33 U	0.36 U	0.081 U	0.079 U	0.073 U	0.082 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Diethyl phthalate	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
4-Chlorophenyl phenyl ether				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Fluorene	100	100	1,000	0.41 U	0.082 J	0.053 J	0.024 J	0.40 U	0.39 U	0.36 U	0.39 J	0.033 J	0.046 J	0.31 U	0.30 U	0.082 J	0.38 J	0.060 J
4-Nitroaniline				0.82 U	0.35 U	0.33 U	0.36 U	0.81 U	0.79 U	0.73 U	0.82 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
N-Nitrosodiphenylamine				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
4-Bromophenyl phenyl ether				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Hexachlorobenzene	0.41	--	--	0.041 U	0.35 U	0.33 U	0.36 U	0.040 U	0.039 U	0.036 U	0.041 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Phenanthrene	100	100	1,000	0.41 U	0.52	0.35	0.07 J	0.18 J	0.39 U	0.21 J	1.7	0.62	0.71	0.050 J	0.30 U	0.93	2.9 J	1.1
Anthracene	100	100	1,000	0.41 U	0.19 J	0.13 J	0.032 J	0.40 U	0.39 U	0.20 J	0.48	0.079 J	0.10 J	0.31 U	0.30 U	0.29 J	0.69 J	0.33
Carbazole				0.41 U	0.041 J	0.034 J	0.36 U	0.40 U	0.39 U	0.36 U	0.13 J	0.046 J	0.054 J	0.31 U	0.30 U	0.11 J	2.9 U	0.23 J
Di-n-butyl phthalate	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.054 J	0.35 U	0.31 U	0.30 U	0.33 U	0.48 J	0.31 U
Fluoranthene	100	100	1,000	0.27 J	0.67	0.54	0.084 J	0.30 J	0.22 J	0.15 J	0.95	0.66	0.84	0.042 J	0.023 J	2.5	3.9	2.5
Pyrene	100	100	1,000	0.52	2.1	1.5	0.25 J	0.35 J	0.35 J	0.40	1.2	0.61	0.78	0.047 J	0.023 J	3.2	3.7	3.3
Butyl benzyl phthalate	100			0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.026 J	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
3,3'-Dichlorobenzidine				0.82 U	0.42 U	0.41 U	0.44 U	0.81 U	0.79 U	0.73 U	0.82 U	0.41 U	0.43 U	0.38 U	0.37 U	0.40 U	3.6 U	0.38 U
Benzo(a)anthracene	1	1	11	0.20	0.54	0.40	0.059 J	0.22	0.11	0.19	0.47	0.44	0.59	0.31 U	0.30 U	2.0	1.7 J	1.4
Chrysene	1	3.9	110	0.21 J	0.59	0.43	0.051 J	0.21 J	0.11 J	0.26 J	0.46	0.75	0.90	0.31 U	0.30 U	2.0	1.6 J	1.4
Bis(2-ethylhexyl)phthalate	50	--	--	0.41 U	0.18 JB	0.14 JB	0.044 JB	0.40 U	0.39 U	0.049 J	0.41 U	0.15 JB	0.12 JB	0.14 JB	0.17 JB	0.23 JB	0.32 JB	0.18 JB
Di-n-octyl phthalate	100	--	--	0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.030 J	0.31 U	0.30 U	0.33 U	2.9 U	0.31
Benzo(b)fluoranthene	1	1	11	0.13	0.83	0.57	0.05 J	0.23	0.06	0.053	0.41	0.74	0.90	0.27 J	0.27 J	2.5	4.0	1.5
Benzo(k)fluoranthene	1	3.9	110	0.054	0.27 J	0.23 J	0.36 U	0.11	0.039 U	0.036 U	0.17	0.25 J	0.33 J	0.31 U	0.30 U	1.0	0.70 J	0.53
Benzo(a)pyrene	1	1	1.1	0.097	0.71	0.54	0.046 J	0.22	0.055 U	0.055	0.34	0.38	0.49	0.019 J	0.010 J	2.5	1.4 J	1.3
Indeno(1,2,3-cd)pyrene	0.5	0.5	11	0.051	0.38	0.27 J	0.36 U	0.12	0.039 U	0.036 U	0.19	0.33 J	0.40	0.31 U	0.30 U	2.4	1.3 J	1.3
Dibenz(a,h)anthracene	0.33	0.33	1.1	0.041 U	0.098 J	0.067 J	0.36 U	0.035 J	0.039 U	0.036 U	0.055	0.095 J	0.12 J	0.31 U	0.30 U	0.58	0.26 J	0.27 J
Benzo(g,h,i)perylene	100	100	1,000	0.065 J	0.38	0.25 J	0.36 U	0.40 U	0.39 U	0.36 U	0.18 J	0.29 J	0.35 J	0.31 U	0.30 U	2.0	1.1 J	1.2
1,1'-Biphenyl				0.11 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.094 J	0.066 J	0.066 J	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Acetophenone				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Benzaldehyde				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.47	0.48	0.31 U	0.30 U	0.33 U	2.9 U	0.10 J
Caprolactam				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U
Atrazine				0.41 U	0.42 U	0.41 U	0.44 U	0.40 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.38 U	0.37 U	0.40 U	3.6 U	0.38 U
2,2'-oxybis(1-chloropropane)				0.41 U	0.35 U	0.33 U	0.36 U	0.40 U	0.39 U	0.36 U	0.41 U	0.33 U	0.35 U	0.31 U	0.30 U	0.33 U	2.9 U	0.31 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Table 3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
Green shaded values exceed the Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the Part 375 Industrial Soil Cleanup Objective.

TABLE 3
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-7															
Compass Direction				North						East		South				West			
Sample Name				PBL-7-5-N(6')	PBL-7-5-N(8')	PBL-7-10-N(6')	PBL-7-10-N(9')	PBL-7-20-N(5')	PBL-7-20-N(10')	PBL-7-5-E(8')	PBL-7-10-E(8')	PBL-7-5-S(8')	PBL-7-10-S(6')	PBL-7-10-S(9')	PBL-7-20-S(10')	PBL-7-2-W(5')	PBL-7-2-W(9')	PBL-7-20-W(5')	PBL-7-20-W(7')
Sample Date				12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/10/2009	12/10/2009	12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/10/2009	12/9/2009	12/95/2009	12/9/2009	12/9/2009
Depth (ft. bgs)				6	8	6	9	5	10	8	8	8	6	9	10	5	9	5	7
SVOCs	**Residential[a] (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**																
Phenol	100	100	1,000	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2-Chlorophenol	400	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2-Methylphenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
4-Methylphenol	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2-Nitrophenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4-Dimethylphenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4-Dichlorophenol	2.0	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
4-Chloro-3-methylphenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4,6-Trichlorophenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4,5-Trichlorophenol				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4-Dinitrophenol	200	--	--	1.1 U	1.3 U	1.1 U	2.3 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.10 U	2.6 U	1.1 U	1.10 U	1.4 U	1.3 U	1.40 U
4-Nitrophenol				1.1 U	1.3 U	1.1 U	2.3 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.10 U	2.6 U	1.1 U	1.10 U	1.4 U	1.3 U	1.40 U
4,6-Dinitro-2-methylphenol				1.1 U	1.3 U	1.1 U	2.3 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.10 U	2.6 U	1.1 U	1.10 U	1.4 U	1.3 U	1.40 U
Pentachlorophenol	2.4	6.7	55	1.1 U	1.3 U	1.1 U	2.3 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.10 U	2.6 U	1.1 U	1.10 U	1.4 U	1.3 U	1.40 U
Bis(2-chloroethyl)ether				0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.040 U	0.037 U	0.085 U	0.035 U	0.037 U	0.046 U	0.043 U	0.047 U
N-Nitrosodi-n-propylamine				0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.040 U	0.037 U	0.085 U	0.035 U	0.037 U	0.046 U	0.043 U	0.047 U
Hexachloroethane				0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.040 U	0.037 U	0.085 U	0.035 U	0.037 U	0.046 U	0.043 U	0.047 U
Nitrobenzene	3.7	15	140	0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.040 U	0.037 U	0.085 U	0.035 U	0.037 U	0.046 U	0.043 U	0.047 U
Isophorone	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Bis-2-chloroethoxy)methane				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Naphthalene	100	100	1,000	0.35 U	0.083 J	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.23 J	0.067 J	0.37 U	0.46 U	0.43 U	0.47 U
4-Chloroaniline	200	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Hexachlorobutadiene				0.071 U	0.085 U	0.076 U	0.16 U	0.078 U	0.087 U	0.087 U	0.078 U	0.081 U	0.076 U	0.17 U	0.072 U	0.076 U	0.093 U	0.088 U	0.096 U
2-Methylnaphthalene				0.35 U	0.12 J	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.06 J	0.11 J	0.37 U	0.85 U	0.10 J	0.37 U	0.46 U	0.43 U	0.08 J
Hexachlorocyclopentadiene				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2-Chloronaphthalene				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2-Nitroaniline				0.71 U	0.85 U	0.76 U	1.6 U	0.78 U	0.87 U	0.87 U	0.78 U	0.81 U	0.76 U	1.7 U	0.72 U	0.76 U	0.93 U	0.88 U	0.96 U
Dimethyl phthalate	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Acenaphthylene				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,6-Dinitrotoluene				0.071 U	0.085 U	0.076 U	0.16 U	0.078 U	0.087 U	0.087 U	0.078 U	0.081 U	0.076 U	0.17 U	0.072 U	0.076 U	0.093 U	0.088 U	0.096 U
3-Nitroaniline				0.71 U	0.85 U	0.76 U	1.6 U	0.78 U	0.87 U	0.87 U	0.78 U	0.81 U	0.76 U	1.7 U	0.72 U	0.76 U	0.93 U	0.88 U	0.96 U
Acenaphthene	100	100	1,000	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.61 J	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Dibenzofuran				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,4-Dinitrotoluene				0.071 U	0.085 U	0.076 U	0.16 U	0.078 U	0.087 U	0.087 U	0.078 U	0.081 U	0.076 U	0.17 U	0.072 U	0.076 U	0.093 U	0.088 U	0.096 U
Diethyl phthalate	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
4-Chlorophenyl phenyl ether				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Fluorene	100	100	1,000	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
4-Nitroaniline				0.71 U	0.85 U	0.76 U	1.6 U	0.78 U	0.87 U	0.87 U	0.78 U	0.81 U	0.76 U	1.7 U	0.72 U	0.76 U	0.93 U	0.88 U	0.96 U
N-Nitrosodiphenylamine				0.35 U	0.41 J	0.38 U	0.47 J	0.39 U	0.43 U	0.43 U	0.25 J	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
4-Bromophenyl phenyl ether				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Hexachlorobenzene	0.41	--	--	0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.040 U	0.037 U	0.085 U	0.035 U	0.037 U	0.046 U	0.043 U	0.047 U
Phenanthrene	100	100	1,000	0.35 U	0.37 J	0.38 U	0.26 J	0.068 J	0.43 U	0.43 U	0.13 J	0.44	0.37 U	1.4	0.13 J	0.09 J	0.46 U	0.43 U	0.18 J
Anthracene	100	100	1,000	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.12 J	0.37 U	0.79 J	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Carbazole				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Di-n-butyl phthalate	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Fluoranthene	100	100	1,000	0.35 U	0.42	0.38 U	0.28 J	0.39 U	0.43 U	0.43 U	0.38 U	0.77	0.37 U	3.7	0.19 J	0.10 J	0.46 U	0.43 U	0.20 J
Pyrene	100	100	1,000	0.35 U	0.29 J	0.38 U	0.24 J	0.39 U	0.43 U	0.43 U	0.38 U	0.64	0.37 U	3.9	0.25 J	0.072 J	0.46 U	0.43 U	0.15 J
Butyl benzyl phthalate	100			0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
3,3'-Dichlorobenzidine				0.71 U	0.85 U	0.76 U	1.6 U	0.78 U	0.87 U	0.87 U	0.78 U	0.81 U	0.76 U	1.7 U	0.72 U	0.76 U	0.93 U	0.88 U	0.96 U
Benzo(a)anthracene	1	1	11	0.043	0.33	0.044	0.17	0.047	0.029 J	0.043 U	0.038 U	0.40	0.037 U	1.4	0.15	0.037 U	0.046 U	0.043 U	0.10
Chrysene	1	3.9	110	0.035 U	0.54	0.072 J	0.21 J	0.091 J	0.43 U	0.43 U	0.38 U	0.47	0.37 U	1.9	0.18 J	0.37 U	0.46 U	0.43 U	0.20 J
Bis(2-ethylhexyl)phthalate	50	--	--	0.076 J	0.42 U	0.38 U	0.77 U	0.15 J	0.43 U	0.43 U	0.38 U	0.24 J	0.37 U	0.35 J	0.16 J	0.37 U	0.46 U	0.43 U	0.47 U
Di-n-octyl phthalate	100	--	--	0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Benzo(b)fluoranthene	1	1	11	0.039	0.042 U	0.064	0.077 U	0.05	0.028 J	0.021 J	0.038 U	0.36	0.037 U	1.3	0.25	0.037 U	0.046 U	0.043 U	0.12
Benzo(k)fluoranthene	1	3.9	110	0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.13	0.037 U	0.54	0.094	0.037 U	0.046 U	0.043 U	0.038 J
Benzo(a)pyrene	1	1	1.1	0.33 J	0.042 U	0.027 J	0.077 U	0.026 J	0.016 J	0.043 U	0.038 U	0.27	0.037 U	0.75	0.17	0.037 U	0.046 U	0.043 U	0.041 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	11	0.035 U	0.12	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.18	0.037 U	0.40	0.14	0.037 U	0.046 U	0.043 U	0.070
Dibenz(a,h)anthracene	0.33	0.33	1.1	0.035 U	0.042 U	0.038 U	0.077 U	0.039 U	0.043 U	0.043 U	0.038 U	0.046	0.037 U	0.14	0.039	0.037 U	0.046 U	0.043 U	0.047 U
Benzo(g,h,i)perylene	100	100	1,000	0.35 U	0.13 J	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.17 J	0.37 U	0.40 J	0.16 J	0.37 U	0.46 U	0.43 U	0.071 J
1,1'-Biphenyl				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Acetophenone				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Benzaldehyde				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Caprolactam				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
Atrazine				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U
2,2'-oxybis(1-chloropropane)				0.35 U	0.42 U	0.38 U	0.77 U	0.39 U	0.43 U	0.43 U	0.38 U	0.40 U	0.37 U	0.85 U	0.35 U	0.37 U	0.46 U	0.43 U	0.47 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Table 3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
Green shaded values exceed the Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the Part 375 Industrial Soil Cleanup Objective.

TABLE 3
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-8																
Compass Direction				North		East					South							West		
Sample Name				PBL-8-10-N(5')	PBL-8-10-N(9.5')	PBL-8-5-E(5')	PBL-8-5-E(9.5')	PBL-8-10-E(6')	PBL-8-10-E(10')	PBL-8-20-E(10')	PBL-8-5-S(5')	PBL-8-5-S(9.5')	PBL-8-10-S(5')	PBL-8-10-S(9')	PBL-8-20-S(6')	PBL-8-20-S(11')	PBL-8-60-S(12')	PBL-8-5-W(5')	PBL-8-5-W(10')	PBL-8-10-W(8')
Sample Date				12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/11/2009	12/11/2009	12/15/2009	12/9/2009	12/9/2009	12/9/2009
Depth (ft. bgs)				5	9.5	5	9.5	6	10	10	5	9.5	5	9	6	11	12	5	10	8
SVOCs	**Residential[a] (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**																	
Phenol	100	100	1,000	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2-Chlorophenol	400	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2-Methylphenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
4-Methylphenol	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2-Nitrophenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2,4-Dimethylphenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2,4-Dichlorophenol	2.0	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
4-Chloro-3-methylphenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2,4,6-Trichlorophenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2,4,5-Trichlorophenol				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	2.0 U	0.43 U	2.2 U	0.40 U
2,4-Dinitrophenol	200	--	--	1.3 U	8.1 U	1.2 U	3.4 U	1.2 U	2.7 U	1.10 U	1.3 U	3.2 U	1.2 U	3.1 U	1.1 U	1.4 U	2.0 U	1.3 U	6.7 U	1.2 U
4-Nitrophenol				1.3 U	8.1 U	1.2 U	3.4 U	1.2 U	2.7 U	1.10 U	1.3 U	3.2 U	1.2 U	3.1 U	1.1 U	1.4 U	2.0 U	1.3 U	6.7 U	1.2 U
4,6-Dinitro-2-methylphenol				1.3 U	8.1 U	1.2 U	3.4 U	1.2 U	2.7 U	1.10 U	1.3 U	3.2 U	1.2 U	3.1 U	1.1 U	1.4 U	2.0 U	1.3 U	6.7 U	1.2 U
Pentachlorophenol	2.4	6.7	55	1.3 U	8.1 U	1.2 U	3.4 U	1.2 U	2.7 U	1.10 U	1.3 U	3.2 U	1.2 U	3.1 U	1.1 U	1.4 U	0.81 U	1.3 U	6.7 U	1.2 U
Bis(2-chloroethyl)ether				0.042 U	0.27 U	0.041 U	0.11 U	0.040 U	0.088 U	0.038 U	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.32 U	0.043 U	0.22 U	0.040 U
N-Nitrosodi-n-propylamine				0.042 U	0.27 U	0.041 U	0.11 U	0.040 U	0.088 U	0.038 U	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.32 U	0.043 U	0.22 U	0.040 U
Hexachloroethane				0.042 U	0.27 U	0.041 U	0.11 U	0.040 U	0.088 U	0.038 U	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.32 U	0.043 U	0.22 U	0.040 U
Nitrobenzene	3.7	15	140	0.042 U	0.27 U	0.041 U	0.11 U	0.040 U	0.088 U	0.038 U	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.32 U	0.043 U	0.22 U	0.040 U
Isophorone	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Bis-2-chloroethoxy)methane				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Naphthalene	100	100	1,000	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	0.54 J	0.36 U	0.46 U	0.26 J	0.43 U	2.2 U	0.26 J
4-Chloroaniline	200	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Hexachlorobutadiene				0.085 U	0.54 U	0.083 U	0.23 U	0.082 U	0.18 U	0.077 U	0.087 U	0.22 U	0.081 U	0.21 U	0.074 U	0.094 U	0.32 U	0.088 U	0.45 U	0.081 U
2-Methylnaphthalene				0.22 J	2.0 J	0.12 J	0.52 J	0.40 U	0.18 J	0.38 U	0.43 U	1.1 U	0.40 U	1.1	0.36 U	0.46 U	0.07 J	0.43 U	2.2 U	0.52
Hexachlorocyclopentadiene				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.81 U	0.43 U	2.2 U	0.40 U
2-Chloronaphthalene				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2-Nitroaniline				0.85 U	5.4 U	0.83 U	2.3 U	0.82 U	1.8 U	0.77 U	0.87 U	2.2 U	0.81 U	2.1 U	0.74 U	0.94 U	0.81 U	0.88 U	4.5 U	0.81 U
Dimethyl phthalate	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Acenaphthylene				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.017 J	0.43 U	2.2 U	0.40 U
2,6-Dinitrotoluene				0.085 U	0.54 U	0.083 U	0.23 U	0.082 U	0.18 U	0.077 U	0.087 U	0.22 U	0.081 U	0.21 U	0.074 U	0.094 U	0.32 U	0.088 U	0.45 U	0.081 U
3-Nitroaniline				0.85 U	5.4 U	0.83 U	2.3 U	0.82 U	1.8 U	0.77 U	0.87 U	2.2 U	0.81 U	2.1 U	0.74 U	0.94 U	0.81 U	0.88 U	4.5 U	0.81 U
Acenaphthene	100	100	1,000	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	0.56 J	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Dibenzofuran				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	0.38 J	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
2,4-Dinitrotoluene				0.085 U	0.54 U	0.083 U	0.23 U	0.082 U	0.18 U	0.077 U	0.087 U	0.22 U	0.081 U	0.21 U	0.074 U	0.094 U	0.32 U	0.088 U	0.45 U	0.081 U
Diethyl phthalate	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
4-Chlorophenyl phenyl ether				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Fluorene	100	100	1,000	0.42 U	1.2 J	0.41 U	0.43 J	0.40 U	0.88 U	0.38 U	0.43 U	0.47 J	0.40 U	0.61 J	0.36 U	0.46 U	0.32 U	0.43 U	2.7	0.40 U
4-Nitroaniline				0.85 U	5.4 U	0.83 U	2.3 U	0.82 U	1.8 U	0.77 U	0.87 U	2.2 U	0.81 U	2.1 U	0.74 U	0.94 U	0.81 U	0.88 U	4.5 U	0.81 U
N-Nitrosodiphenylamine				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
4-Bromophenyl phenyl ether				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Hexachlorobenzene	0.41	--	--	0.042 U	0.27 U	0.041 U	0.11 U	0.040 U	0.088 U	0.038 U	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.32 U	0.043 U	0.22 U	0.040 U
Phenanthrene	100	100	1,000	0.28 J	2.7 U	0.38 J	1.1 U	0.071 J	0.88 U	0.42	0.43 U	1.1 U	0.40 U	0.27 J	0.36 U	0.46 U	0.32 J	0.43 U	2.2 U	0.40 U
Anthracene	100	100	1,000	0.42 U	2.7 U	0.12 J	1.1 U	0.40 U	0.88 U	0.098 J	0.43 U	1.1 U	0.40 U	0.49 J	0.36 U	0.46 U	0.046 J	0.43 U	2.2 U	0.40 U
Carbazole				0.42 U	2.7 U	0.066 J	1.1 U	0.40 U	0.88 U	0.061 J	0.43 U	1.1 U	0.40 U	0.29 J	0.36 U	0.46 U	0.024 J	0.43 U	2.2 U	0.40 U
Di-n-butyl phthalate	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.050 J	0.43 U	2.2 U	0.40 U
Fluoranthene	100	100	1,000	0.25 J	2.7 U	0.38 J	1.1 U	0.11 J	0.88 U	0.56	0.43 U	1.1 U	0.40 U	1.7	0.36 U	0.094 J	0.30 J	0.43 U	2.2 U	0.40 U
Pyrene	100	100	1,000	0.20 J	2.7 U	0.28 J	1.1 U	0.089 J	0.88 U	0.59	0.43 U	1.1 U	0.40 U	1.2	0.36 U	0.11 J	0.33	0.43 U	2.2 U	0.40 U
Butyl benzyl phthalate	100			0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
3,3'-Dichlorobenzidine				0.85 U	5.4 U	0.83 U	2.3 U	0.82 U	1.8 U	0.77 U	0.87 U	2.2 U	0.81 U	2.1 U	0.74 U	0.94 U	0.40 U	0.88 U	4.5 U	0.81 U
Benzo(a)anthracene	1	1	11	0.12	0.27 U	0.22	0.11 U	0.04 U	0.088 U	0.34	0.043 U	0.11 U	0.040 U	0.38	0.036 U	0.046 U	0.16 J	0.043 U	0.22 U	0.040 U
Chrysene	1	3.9	110	0.14 J	2.7 U	0.19 J	1.1 U	0.40 U	0.88 U	0.32 J	0.43 U	1.1 U	0.40 U	0.29 J	0.36 U	0.46 U	0.24 J	0.43 U	2.2 U	0.40 U
Bis(2-ethylhexyl)phthalate	50	--	--	0.21 J	2.7 U	0.51	1.1 U	0.34 J	0.88 U	0.38 U	0.22 J	0.26 J	0.11 J	0.28 J	0.36 U	0.16 J	2.9 B	0.16 J	2.2 U	0.32 J
Di-n-octyl phthalate	100	--	--	0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Benzo(b)fluoranthene	1	1	11	0.14	0.27 U	0.23	0.11 U	0.095	0.088 U	0.38	0.043 U	0.11 U	0.040 U	0.16	0.036 U	0.03 J	0.24 J	0.043 U	0.22 U	0.065
Benzo(k)fluoranthene	1	3.9	110	0.047	0.27 U	0.062	0.11 U	0.046	0.088 U	0.15	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.064 J	0.043 U	0.22 U	0.040 U
Benzo(a)pyrene	1	1	1.1	0.11	0.27 U	0.17	0.11 U	0.082	0.088 U	0.27	0.043 U	0.11 U	0.040 U	0.11	0.036 U	0.046 U	0.17 J	0.043 U	0.22 U	0.030 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	11	0.072	0.27 U	0.12	0.11 U	0.074	0.088 U	0.19	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.10 J	0.043 U	0.22 U	0.034 J
Dibenz(a,h)anthracene	0.33	0.33	1.1	0.042 U	0.27 U	0.022 J	0.11 U	0.040 U	0.088 U	0.068	0.043 U	0.11 U	0.040 U	0.10 U	0.036 U	0.046 U	0.026 J	0.043 U	0.22 U	0.040 U
Benzo(g,h,i)perylene	100	100	1,000	0.086 J	2.7 U	0.14 J	1.1 U	0.090 J	0.88 U	0.18 J	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.11 J	0.43 U	2.2 U	0.40 U
1,1'-Biphenyl				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.021 J	0.43 U	2.2 U	0.14 J
Acetophenone				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Benzaldehyde				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U
Caprolactam				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.044 J	0.43 U	2.2 U	0.40 U
Atrazine				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.40 U	0.43 U	2.2 U	0.40 U
2,2'-oxybis(1-chloropropane)				0.42 U	2.7 U	0.41 U	1.1 U	0.40 U	0.88 U	0.38 U	0.43 U	1.1 U	0.40 U	1.0 U	0.36 U	0.46 U	0.32 U	0.43 U	2.2 U	0.40 U

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
B = This compound was detected in the laboratory method blank as well as the sample.
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = Residential Soil Cleanup Objectives and Supplement Soil Cleanup Objectives (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
[b] = Table 3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils (NYSDEC Draft CP/Soil Cleanup Guidance, 11/4/09).
Green shaded values exceed the Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the Part 375 Industrial Soil Cleanup Objective.

TABLE 4
SUMMARY OF METALS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-1								
Compass Direction				North	East				South		West	
Sample Name				PBL-1-5-N(12')	PBL-1-10-E(6')	PBL-1-20-E(8')	PBL-1-30-E(9')	PBL-1-30-E(9')F.D.	PBL-1-5-S(12')	PBL-1-10-S(10')	PBL-1-5-W(9')	PBL-1-10-W(10')
Sample Date				12/8/2009	12/10/2009	12/11/2009	12/15/2009	12/15/2009	12/8/2009	12/8/2009	12/8/2009	12/8/2009
Depth (ft. bgs)				12	6	8	9	9	12	10	9	10
Metals	**Residential (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**									
Silver	36	180	6,800	0.42 U	0.56 U	0.26 J	0.42 U	0.44 U	0.41 U	0.52 U	0.43 U	0.45 U
Aluminum				4530	9390	6570	4470	4450	6350	9700	9930	9770
Arsenic	16	16	16	3.0	2.4	11.7	3.2	3.4	3.2	11.2	5.1	4.3
Barium	350	400	10,000	22.3	56.1	200	25.1	29.8	29	54.2	32.8	36.3
Beryllium	14	72	2,700	0.40	0.69	0.56 J	0.18 J	0.16 J	0.32 J	0.38 J	0.39 J	0.42 J
Calcium				83400	6450	18700	14500	18500	2730	17200	1590	8720
Cadmium	2.5	4.3	60	0.42 U	0.56 U	0.62	0.42 U	0.44 U	0.10 J	0.52 U	0.43 U	0.45 U
Cobalt	30[d]	--	--	4.0	7.6	11.6	3.2	3.0	6.1	8.9	7.3	6.9
Chromium[c]	22[a]/36[b]	110[a]/180[b]	800[a]/6,800[b]	7.0	22.4	12.4	7.2	7.0	12.7	15.8	14.3	14.6
Copper	270	270	10,000	31.5	15.9	345	6.9	7.1	15.9	48	13.2	14.6
Iron	2000[d]	--	--	13000	16600	14800	8060	7320	14700	23500	17300	15500
Potassium				1080	2390	1240	724	790	1260	1570	1210	1320
Magnesium				40400	4580	7960	3540	3700	3520	5620	3140	3230
Manganese	2,000	2,000	10,000	173	174	298	160	154	328	380	246	233
Mercury	0.81	0.81	5.7	0.029 J	0.018 J	0.35	0.050 J	0.062	0.067	0.044 J	0.011 J	0.027 J
Sodium				451	123	164	211	231	253	610	1180	728
Nickel	140	310	10,000	6.3	28.7	22.9	9.7	8.4	20.4	25.2	1308	15.3
Lead	400	400	3,900	26.1	12.1	878	12.8	12.9	20.4	37.3	23.5	19
Antimony				0.67 U	0.89 U	4.5	0.68 U	0.71 U	0.66 U	1.6	0.68 U	0.72 U
Selenium	36	180	6,800	0.68 J	1.2	1.8	0.62 J	0.55 J	0.81 J	1.2	1.3	1.2
Thallium				0.58 U	0.78 U	0.79 U	0.59 U	0.62 U	0.58 U	0.73 U	0.60 U	0.63 U
Vanadium	100[d]	--	--	11.0	23.2	22.1	9.2	9.3	16.8	25.1	21	21.3
Zinc	2,200	10,000	10,000	27.3	48.3	489	22.7	26.1	40.3	58.1	46.2	41

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = The Residential/Restricted Residential/Industrial Soil Cleanup Objective for hexavalent chromium is 22/110/800 mg/Kg.
[b] = The Residential/Restricted Residential/Industrial Soil Cleanup Objective for trivalent chromium is 36/180/6,800 mg/Kg.
[c] = The soil samples were analyzed for total chromium, for which there are no Part 375 SCOs. Any concentration in excess of 36/180/6,800 mg/Kg is, as aminimum, an exceedance of the hexavalent chromium Residential/Restricted Residential/Industrial SCO.
[d] = The original Part 375 SCOs did not include this metal. This metal was included in the November 2009 Supplemental SCOs, but only for the Residential SCO criteria.

Green shaded values exceed the corresponding Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the corresponding Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the corresponding Part 375 Industrial Soil Cleanup Objective.

TABLE 4
SUMMARY OF METALS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-2										PBL-5				
Compass Direction				North				East						North		East	South	West
Sample Name				PBL-2-10-N(11')	PBL-2-30-N(10')	PBL-2-30-N(10')F.D.	PBL-2-60-N(11')	PBL-2-10-E(6')	PBL-2-10-E(10')	PBL-2-20-E(9')	PBL-2-30-E(9')	PBL-2-60-E(4')	PBL-2-60-E(4')F.D.	PBL-5-5-N(6')	PBL-5-10-N(5')	PBL-5-10-E(4')	PBL-5-10-S(2')	PBL-5-2-W(7')
Sample Date				12/11/2009	12/15/2009	12/15/2009	12/15/2009	12/11/2009	12/11/2009	12/11/2009	12/11/2009	12/15/2009	12/15/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Depth (ft. bgs)				11	10	10	11	6	10	9	9	4	4	6	5	4	2	7
Metals	**Residential (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**															
Silver	36	180	6,800	0.55 U	0.32 U	0.30 U	0.34 U	0.57 U	0.56 U	0.43 U	0.42 U	0.31 J	0.12 J	0.45 U	0.52 U	0.15 J	0.26 J	2.0
Aluminum				8860	4210	5210	5700	7580	11300	6690	8530	8680	2690	12600	8860	10300	6880	3730.0
Arsenic	16	16	16	5.6	3.1	3.4	3.8	5.8	5.1	1.5	4.6	449	106	4.3	4.3	10.1	6.5	8.2
Barium	350	400	10,000	40	19.8	30.6	13.9	37.7	64.4	45	3308	230	251	74.6	49.5	66.4	71.7	83.3
Beryllium	14	72	2,700	0.42 J	0.28 J	0.33	0.24 J	0.39 J	0.49 J	0.13 J	0.26 J	1.4	0.39	0.63	0.40 J	0.53	0.35 J	0.21 J
Calcium				2540	2010	3100	2870	15900	2170	21600	8030	34200	12500	3780.0	2330.0	49100	42300	18300
Cadmium	2.5	4.3	60	0.55 U	0.098 J	0.16 J	0.34 U	0.57 U	0.56 U	0.43 U	0.42 U	1.5	0.53	0.45 U	0.52 U	0.31 J	2.4	0.99
Cobalt	30[d]	--	--	7.8	3.8	5.0	4.4	5.3	8.7	3.2	5.1	9.7	2.6	9.1	8.0	9.6	4.9	3.2
Chromium[c]	22[a]/36[b]	110[a]/180[b]	800[a]/6,800[b]	14.3	8.4	11.7	9.9	14.3	19.1	9.6	13	30	9.4	21.4	14.4	14.7	52.8	22.9
Copper	270	270	10,000	18	11.5	15.9	8.0	18.4	23.8	7.2	12.4	197	59.9	19.9	16.8	49	74.7	85.3
Iron	2000[d]	--	--	18300	9200	12900	11300	19500	20300	10700	12100	42800	13800	18900	14800	18700	21300	13600
Potassium				1350	775.0	998	1070	1270	2200	1210	1350	1430	394	2090	1140	1040	822	541
Magnesium				2880	1990.0	2780	2800	2790	3560	5910	3190	6940	2640	4700	2840	6810	4410	2550
Manganese	2,000	2,000	10,000	272	164.0	198	156	249	430	143	220	297	81.2	401	386	384	350	203
Mercury	0.81	0.81	5.7	0.066	0.050 J	0.047 J	0.062 J	0.11	0.086	0.021 J	0.062	1.7	3.3	0.1	0.035 J	0.13	0.23	0.90
Sodium				1280	1280	1610	615	591	1340	1050	495	925	297	137	87.5	258	234	193
Nickel	140	310	10,000	15.1	8.3	11.6	10.1	12.3	18.2	12.4	17.1	53.7	13.3	27.3	19.5	18.6	53.4	13.5
Lead	400	400	3,900	25.4	37.0	22.2	9.9	32.8	34.1	8.7	24	312	1670	57.0	59.3	146	2040	378
Antimony				0.89 U	0.15 J	0.49 U	0.54 U	0.92 U	0.90 U	0.69 U	0.66 U	1.7	0.27 J	0.71 U	0.83 U	0.30 J	0.62 J	0.26 J
Selenium	36	180	6,800	1.3	0.49 J	0.90	0.69	1.3	1.2	0.62 J	0.76 J	8.6	2.9	1.4	1.4	0.79 J	0.78 J	0.58 J
Thallium				0.78 U	0.45 U	0.43 U	0.47 U	0.80 U	0.79 U	0.60 U	0.58 U	2.0	0.58	0.62 U	0.72 U	0.73 U	0.64 U	0.74 U
Vanadium	100[d]	--	--	21.5	12.4	17.1	14.6	27.2	39.5	11.1	16.2	29.7	10.4	28.0	20.0	20.3	20.1	11.3
Zinc	2,200	10,000	10,000	68.4	43.6	66.6	36.4	54.6	55	23.7	31.7	612	144	62.9	49.7	167	543	231

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = The Residential Soil Cleanup Objective for hexavalent chromium is 1.0 mg/Kg.
[b] = The Residential Soil Cleanup Objective for trivalent chromium is 30 mg/Kg.
[c] = The soil samples were analyzed for total chromium, for which there is not Residential SCO. Any concentration in excess of 30 mg/Kg is, as aminimum, an exceedance of the hexavalent chromium Residential SCO.
[d] = The original Part 375 SCOs did not include this metal. This metal was included in the November 2009 Supplemental SCOs, but only for the Residential SCO criteria.
Green shaded values exceed the corresponding Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the corresponding Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the corresponding Part 375 Industrial Soil Cleanup Objective.

TABLE 4
SUMMARY OF METALS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-7															
Compass Direction				North						East		South				West			
Sample Name				PBL-7-5-N(6')	PBL-7-5-N(8')	PBL-7-10-N(6')	PBL-7-10-N(9')	PBL-7-20-N(5')	PBL-7-20-N(10')	PBL-7-5-E(8')	PBL-7-10-E(8')	PBL-7-5-S(8')	PBL-7-10-S(6')	PBL-7-10-S(9')	PBL-7-20-S(10')	PBL-7-2-W(5')	PBL-7-2-W(9')	PBL-7-20-W(5')	PBL-7-20-W(7')
Sample Date				12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/10/2009	12/10/2009	12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/9/2009	12/10/2009	12/9/2009	12/95/2009	12/9/2009	12/9/2009
Depth (ft. bgs)				6	8	6	9	5	10	8	8	8	6	9	10	5	9	5	7
Metals	**Residential (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**																
Silver	36	180	6,800	0.45 U	0.21 J	0.54 U	0.45 J	0.44 U	0.13 J	0.48 U	0.12 J	0.23 J	0.50 U	0.13 J	0.26 J	0.48 J	0.15 J	0.28 J	0.30 J
Aluminum				1690	2940	3900	6530	8980	12800	3480	7940	5930	4180	6980	7760	2420	13300	7010	6400
Arsenic	16	16	16	8.7	171	199	176	28.2	146	38.2	25.5	126	2.8	173	121	45.2	201	172	380
Barium	350	400	10,000	14.4	95.3	67.2	276	112	220	37.7	82.4	146	22.9	120	151	36.4	182	199	625
Beryllium	14	72	2,700	0.45 U	1.2	0.52 J	1.1	0.53	0.91	0.29 J	0.43 J	0.56	0.2 J	0.64	0.62	0.17 J	2.6	0.82	1.4
Calcium				4490	9320	1288	17300	70200	57900	5850	60000	32300	1200	40700	42700	11400	60500	28300	39500
Cadmium	2.5	4.3	60	0.12 J	1.2	0.58	2.1	0.34 J	2.3	0.16 J	0.30 J	1.4	0.50 U	1.6	1.4	0.68	2.9	1.8	3.1
Cobalt	30[d]	--	--	1.4	14.5	6.1	30.6	6.1	11.6	2.7	4.7	8.8	3.3	14.7	5.8	2.1	39.1	8.1	30.3
Chromium[c]	22[a]/36[b]	110[a]/180[b]	800[a]/6,800[b]	7.8	32.4	14.3	45.5	12.3	32	13.5	21.8	62.8	12.3	31.1	27	18.6	15.9	33.2	77.8
Copper	270	270	10,000	10.1	168	43.6	291	26	73.6	28.6	284	237	9	137	65.9	23.5	97	149	191
Iron	2000[d]	--	--	5750	82200	34900	259000	15000	32200	12700	23000	52700	8090	105000	44500	8440	37200	39300	156000
Potassium				398	380	1220	404	1550	840	457	1110	1240	769	489	1500	428	469	1100	665
Magnesium				1010	2340	1510	5250	3580	14300	1300	5710	7930	1260	4760	6620	1970	20300	6330	21600
Manganese	2,000	2,000	10,000	79.5	326	231	849	209	421	104	266	301	113	520	361	92.3	710	307	750
Mercury	0.81	0.81	5.7	0.049 J	2.4	1.5	1.2	0.42	0.81	0.52	0.92	4.1	0.012 J	2.3	0.33	0.45	0.29	3.7	2.1
Sodium				78.2	258	615	560	542	676	455	748	841	75.1	319	713	152	976	567	559
Nickel	140	310	10,000	9.4	53.4	23.3	88.8	13	69.9	17.6	25.1	85.6	8.1	39.9	31.2	9.5	151	43.7	176
Lead	400	400	3,900	28.4	560	73.8	857	143	252	71.4	55.7	367	11.8	2550	295	72.4	92.4	479	2070
Antimony				0.72 U	4.1	0.97	3.0	0.36 J	1.6	0.33 J	0.68 J	0.88	0.80 U	3.7	1.4	0.21 J	1.8	2.3	2.4
Selenium	36	180	6,800	0.56 J	6.2	2.3	3.9	1.6	5.2	1.0	2.9	3.7	1 J	2.9	5.2	1.1	8.8	3.5	10.4
Thallium				0.63 U	2.4	3.7	3.0	0.62 U	2.1	0.3 J	0.34 J	1.2	0.70 U	1.1	0.40 J	0.32 J	18	1.6	2.3
Vanadium	100[d]	--	--	5.4	20.1	14.3	51.2	22.1	29.3	9.0	21	26.2	14.4	17.5	23.2	9.7	57.4	31.7	38.5
Zinc	2,200	10,000	10,000	42.6	313	98.7	554	181	408	62.2	109	284	18.9	524	316	72.4	645	356	886

Notes:
mg/Kg = milligrams per kilogram (parts per million).
ft bgs = feet below ground surface.
F.D. = Field duplicate.
U = Not Detected.
J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but the greater than or equal to the Instrument Detection Limit (IDL).
Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = The Residential Soil Cleanup Objective for hexavalent chromium is 1.0 mg/Kg.
[b] = The Residential Soil Cleanup Objective for trivalent chromium is 30 mg/Kg.
[c] = The soil samples were analyzed for total chromium, for which there is not Residential SCO. Any concentration in excess of 30 mg/Kg is, as aminimum, an exceedance of the hexavalent chromium Residential SCO.
[d] = The original Part 375 SCOs did not include this metal. This metal was included in the November 2009 Supplemental SCOs, but only for the Residential SCO criteria.
Green shaded values exceed the corresponding Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the corresponding Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the corresponding Part 375 Industrial Soil Cleanup Objective.

TABLE 4
SUMMARY OF METALS ANALYSIS - 2009
PRE DESIGN INVESTIGATION
500 KENT AVENUE
BROOKLYN, NEW YORK

Hot Spot Designation				PBL-8																
Compass Direction				North		East					South							West		
Sample Name				PBL-8-10-N(5')	PBL-8-10-N(9.5')	PBL-8-5-E(5')	PBL-8-5-E(9.5')	PBL-8-10-E(6')	PBL-8-10-E(10')	PBL-8-20-E(10')	PBL-8-5-S(5')	PBL-8-5-S(9.5')	PBL-8-10-S(5')	PBL-8-10-S(9')	PBL-8-20-S(6')	PBL-8-20-S(11')	PBL-8-60-S(12')	PBL-8-5-W(5')	PBL-8-5-W(10')	PBL-8-10-W(8')
Sample Date				12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/10/2009	12/11/2009	12/11/2009	12/15/2009	12/9/2009	12/9/2009	12/9/2009
Depth (ft. bgs)				5	9.5	5	9.5	6	10	10	5	9.5	5	9	6	11	12	5	10	8
Metals	**Residential (mg/Kg)**	**Restricted Residential (mg/Kg)**	**Industrial (mg/Kg)**																	
Silver	36	180	6,800	0.56 U	0.90	0.55 U	1.3	0.53 U	0.36 J	0.50 U	0.65 U	0.28 J	0.43 U	0.58 J	0.44 U	0.49 J	0.30 U	0.45 U	0.57	0.13 J
Aluminum				7430	11500	11100	8470	8040	9380	8470	7510	9360	6150	11500	9200	9740	8650	14700	11600	6340
Arsenic	16	16	16	20.3	1980	123	2490	58	831	23.4	130	799	3.2	564	229	1270	63.7	213	2100	128
Barium	350	400	10,000	102	582	76.6	463	66.7	1030	248	53.9	129	44.3	578	48.1	282	89.3	60.5	356	139
Beryllium	14	72	2,700	0.41 J	4.5	0.62	6.6	0.46 J	1.8	0.54	0.37 J	1.3	0.31 J	2.8	0.52	2.6	0.41	0.84	3.4	0.43 J
Calcium				82000	10000	24900	97900	29300	47800	69200	55000	40800	1300	31600	38300	20000	20700.0	37400	51500	55700
Cadmium	2.5	4.3	60	0.29 J	0.89	0.53 J	1.5	0.44 J	2.7	1.2	0.17 J	1.6	0.43 U	3.5	0.44 U	1.1	0.41	0.23 J	1.1	0.96
Cobalt	30[d]	--	--	4.2	17.3	5.9	12	4.4	10.5	5.6	9.7	26.4	5.6	13.9	5.0	17.1	2.7	7.3	10.6	5.5
Chromium[c]	22[a]/36[b]	110[a]/180[b]	800[a]/6,800[b]	27.3	54.5	21.7	75.2	15.9	44.9	16.9	24.3	156	17.9	37.4	26.5	48.1	11.2	26.1	52.3	17.6
Copper	270	270	10,000	38.7	206	44.2	346	48.1	74.2	46.2	20.7	39.9	14.8	105	20.8	118	64.7	24.3	119	55.9
Iron	2000[d]	--	--	14200	90900	48500	83000	49700	30200	29100	91200	39200	12100	48900	2190	55000	11200	84100	61200	29500
Potassium				1610	1540	1660	1690	1150	1290	1080	1370	549	1760	1410	979	1390	1180	2930	1460	2350
Magnesium				12900	1980	5770	4770	5520	13400	5820	2200	63200	2100	6320	422	6170	2730	2250	13900	21300
Manganese	2,000	2,000	10,000	181	327	307	357	360	323	333	1010	366	229	267	1480	383	130	680	281	229
Mercury	0.81	0.81	5.7	0.25	1.9	0.41	0.99	0.31	1.2	0.71	0.36	0.24	0.0054 J	2.8	0.22	0.45	0.49	0.35	0.57	5.6
Sodium				541	358	853	448	868	473	604	602	123	84.3	549	21.9	600	1100	1830	429	380
Nickel	140	310	10,000	36.7	61.2	19.5	56.5	15.1	77.4	16.5	35.1	358	15.9	76	36.5	86.7	11.9	27.2	51.4	25.1
Lead	400	400	3,900	74.8	204	162	395	85.6	344	467	40.7	214	8.8	429	36	706	123	53.9	471	303
Antimony				0.90 U	5.3	0.44 J	9.1	0.34 J	1.4	0.23 J	0.56 J	0.39 J	0.69 U	2.7	0.56 J	3.5	0.13 J	0.36 J	4.1	0.59 J
Selenium	36	180	6,800	1.6	65.6	8.1	122	5.7	23.9	1.3	9.2	14.1	1.3	19.4	9.1	35.8	1.7	14.9	50.4	3.4
Thallium				0.79 U	13	0.77 U	15.5	0.75 U	2.4	0.70 U	0.27 J	2.4	0.60 U	4.0	0.55 J	5.5	0.46	0.48 J	7.9	1.0
Vanadium	100[d]	--	--	16.9	93.6	25.3	92.5	15.8	49.2	20.5	15	56.2	23.1	61.6	15.3	62.4	19.6	35.9	65.8	22
Zinc	2,200	10,000	10,000	60.7	269	139	464	1114	629	381	51.3	1320	25.0	1060	35.3	396	139.0	68.0	349	227

Notes:
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Italicized compounds are Supplemental Soil Cleanup Objectives (SSCOs)
[a] = The Residential Soil Cleanup Objective for hexavalent chromium is 1.0 mg/Kg.
[b] = The Residential Soil Cleanup Objective for trivalent chromium is 30 mg/Kg.
[c] = The soil samples were analyzed for total chromium, for which there is not Residential SCO. Any concentration in excess of 30 mg/Kg is, as aminimum, an exceedance of the hexavalent chromium Residential SCO.
[d] = The original Part 375 SCOs did not include this metal. This metal was included in the November 2009 Supplemental SCOs, but only for the Residential SCO criteria.
Green shaded values exceed the corresponding Part 375 Residential Soil Cleanup Objective.
Yellow shaded values exceed the corresponding Part 375 Restricted Residential Soil Cleanup Objective.
Orange shaded values exceed the corresponding Part 375 Industrial Soil Cleanup Objective.

Table 5
Con Edison Kent Ave
Pre-IRM Investigation
Summary of VOC Results

Sample ID:			DB-1 23-23.5'		DB-1 34.5-35'		DB-2 13.5-14'		DB-2 34.5-35'		DB-3 20.5-21'		DB-3 30.5-31'		DB-5 21-21.5'		DB-5 35-35.5'		DB-5 49.5-50'		DB-6 15-15.5'		DB-6 30-30.5'		DB-6 39.5-40'		Part 375-6.8(b) Restricted Residential Soil Cleanup Objective (µg/Kg)
Sample Date:			5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		
Analyte	Analytical Method	Units																									
Carbon disulfide	8260B	µg/Kg	3.7		3.6		3.9		3.7		3.1		0.63	J	ND	U	0.86	J	0.21	J	3.1		ND	U	ND	U	NE
Tetrachloroethene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	19,000
1,2-Dichloropropane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Methyl-2-pentanone	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
1,1,2-Trichloro-1,2,2-trichfluoroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Dibromochloromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
1,2,4-Trichlorobenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Styrene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1500		1.8		NE
1,2,3-Trichlorobenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
1,1,2,2-Tetrachloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Chloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Butanone	8260B	µg/Kg	6.2	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6.3	J	ND	U	ND	U	100,000
Isopropylbenzene	8260B	µg/Kg	0.88	J	0.35	J	ND	U	ND	U	ND	U	ND	U	75	J	ND	U	ND	U	ND	U	430		0.18	J	NE
1,1,1-Trichloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
Benzene	8260B	µg/Kg	0.25	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.82	J	ND	U	ND	U	640		0.62	J	4,800
cis-1,3-Dichloropropene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Bromochloromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Bromoform	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
1,1-Dichloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	26,000
1,2-Dichloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3,100
1,1,2-Trichloroethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Acetone	8260B	µg/Kg	80	B	62	B	35	B	42	B	42	B	9.1	J B	ND	U	39	B	54	B	55	B	ND	U	49	B	100,000
Methyl acetate	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Dichlorodifluoromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Methylene Chloride	8260B	µg/Kg	3.3	B	5.9	B	2	B	1.2	B	3.3	B	5	B	ND	U	1.3	B	1.9	B	2.3	B	ND	U	2.4	B	100,000
Chloromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Bromomethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Toluene	8260B	µg/Kg	0.38	J B	0.51	J B	0.28	J B	0.24	J B	ND	U	ND	U	ND	U	0.83	J B	0.3	J B	0.23	J B	420		1.9	B	100,000
o-Xylene	8260B	µg/Kg	0.35	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.1		ND	U	ND	U	3500		8		100,000[a]
Chlorobenzene	8260B	µg/Kg	1.2		1.5		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000

NOTES:

Units are in micrograms per kilogram (µg/Kg) = parts per billion (ppb).

[a] - This restricted residential soil cleanup objective is for mixed (or total) Xylenes.

ND - Not detected. The analyte was not detected above the method detection limit (MDL).

U - Indicates the analyte was analyzed for but not detected (see "ND" above).

J - Result is less than the reporting limit (RL) but greater than or equal to the MDL and the concentration is an approximate value.

B - Compound was found in the (method or leachate) blank and sample.

NE - Not established. This compound is not listed in Part 375-6.8(b), nor is there a restricted residential soil cleanup objective established for this compound in the supplemental soil cleanup objectives in CP-51.

Table 5 (Continued)
Con Edison Kent Ave
Pre-IRM Investigation
Summary of VOC Results

Analyte	Analytical Method	Units	Sample ID:		DB-1 34.5-35'		DB-2 13.5-14'		DB-2 34.5-35'		DB-3 20.5-21'		DB-3 30.5-31'		DB-5 21-21.5'		DB-5 35-35.5'		DB-5 49.5-50'		DB-6 15-15.5'		DB-6 30-30.5'		DB-6 39.5-40'		Part 375-6.8(b) Restricted Residential Soil Cleanup Objective (µg/Kg)
			Sample Date:		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		
1,2-Dibromo-3-Chloropropane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
1,3-Dichlorobenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	49,000
MTBE	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
trans-1,2-Dichloroethene	8260B	µg/Kg	0.36	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
1,4-Dioxane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	13,000
1,1-Dichloroethene	8260B	µg/Kg	ND	U	0.26	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
1,2-Dichlorobenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
Trichloroethene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	21,000
2-Hexanone	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Ethylbenzene	8260B	µg/Kg	9.5		0.31	J	ND	U	ND	U	ND	U	ND	U	ND	U	3.7		ND	U	ND	U	7200		11		41,000
Methylcyclohexane	8260B	µg/Kg	ND	U	0.27	J	ND	U	ND	U	ND	U	ND	U	3600		ND	U	ND	U	ND	U	110	J	ND	U	NE
Trichlorofluoromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Cyclohexane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	81	J	ND	U	NE
trans-1,3-Dichloropropene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
cis-1,2-Dichloroethene	8260B	µg/Kg	ND	U	2.2		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
Chloroform	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	49,000
m&p-Xylene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1.5	J	ND	U	ND	U	5100		4.9		100,000[a]
Vinyl chloride	8260B	µg/Kg	ND	U	0.93	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	900
1,2-Dibromoethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Carbon tetrachloride	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2,400
1,4-Dichlorobenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	13,000
Bromodichloromethane	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
n-Butylbenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	39	J	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
1,2,4-Trimethylbenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.4		ND	U	ND	U	8100		6.1		52,000
sec-Butylbenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	56	J	ND	U	ND	U	ND	U	36	J	ND	U	100,000
N-Propylbenzene	8260B	µg/Kg	0.75	J	ND	U	ND	U	ND	U	ND	U	ND	U	73	J	0.18	J	ND	U	ND	U	510		0.42	J	100,000
1,3,5-Trimethylbenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.68	J	ND	U	ND	U	3000		1.6		52,000
tert-Butylbenzene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	20	J	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
p-Isopropyltoluene	8260B	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	420		0.18	J	NE

NOTES:

Units are in micrograms per kilogram (µg/Kg) = parts per billion (ppb).

[a] - This restricted residential soil cleanup objective is for mixed (or total) Xylenes.

ND - Not detected. The analyte was not detected above the method detection limit (MDL).

U - Indicates the analyte was analyzed for but not detected (see "ND" above).

J - Result is less than the reporting limit (RL) but greater than or equal to the MDL and the concentration is an approximate value.

B - Compound was found in the (method or leachate) blank and sample.

NE - Not established. This compound is not listed in Part 375-6.8(b), nor is there a restricted residential soil cleanup objective established for this compound in the supplemental soil cleanup objectives in CP-51.

Table 6
Con Edison Kent Ave
Pre-IRM Investigation
Summary of SVOC Results

Sample ID:			DB-1 23-23.5'		DB-1 34.5-35'		DB-2 13.5-14'		DB-2 34.5-35'		DB-3 20.5-21'		DB-3 30.5-31'		DB-5 21-21.5'		DB-5 35-35.5'		DB-5 49.5-50'		DB-6 15-15.5'		DB-6 29.5-30'		DB-6 39.5-40'		Part 375-6.8(b) Restricted Residential Soil Cleanup Objective (µg/Kg)
Sample Date:			5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		
Analyte	Analytical Method	Units																									
1,2,4,5-Tetrachlorobenzene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,2'-oxybis[1-chloropropane]	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,3,4,6-Tetrachlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
N-Nitrosodiphenylamine	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	5	ND	U	NE
Hexachlorocyclopentadiene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,4-Dimethylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,6-Dinitrotoluene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Aniline	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000[a]
2,4-Dinitrotoluene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Bis(2-ethylhexyl) phthalate	8270C	µg/Kg	ND	U	5400		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Benzoic acid	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Chloronaphthalene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Butyl benzyl phthalate	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Chlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Di-n-butyl phthalate	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,4-Dichlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Diethyl phthalate	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,4-Dinitrophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Methylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
Dimethyl phthalate	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Di-n-octyl phthalate	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
3,3'-Dichlorobenzidine	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Hexachlorobenzene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1,200
Isophorone	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Methylnaphthalene	8270C	µg/Kg	ND	U	66	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	410	J	ND	U	NE
4,6-Dinitro-2-methylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2-Nitroaniline	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Bromophenyl phenyl ether	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
3-Nitroaniline	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Chloro-3-methylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Nitrobenzene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	15,000[a]
2-Nitrophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Chlorophenyl phenyl ether	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Methylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
4-Nitrophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE

NOTES:
Units are in micrograms per kilogram (µg/Kg) = parts per billion (ppb).
[a] - This restricted residential soil cleanup objective is not listed in Part 375-6.8(b), but is included in the supplemental soil cleanup objectives listed in CP-51.
ND - Not detected. The analyte was not detected above the method detection limit (MDL).
U - Indicates the analyte was analyzed for but not detected (see "ND" above).
J - Result is less than the reporting limit (RL) but greater than or equal to the MDL and the concentration is an approximate value.
NE - Not established. This compound is not listed in Part 375-6.8(b), nor is there a restricted residential soil cleanup objective established for this compound in the supplemental soil cleanup objectives in CP-51.
Values in **BOLD** and highlighted in red exceed the regulatory levels.

Table 6 (Continued)
Con Edison Kent Ave
Pre-IRM Investigation
Summary of SVOC Results

Sample ID:			DB-1 23-23.5'		DB-1 34.5-35'		DB-2 13.5-14'		DB-2 34.5-35'		DB-3 20.5-21'		DB-3 30.5-31'		DB-5 21-21.5'		DB-5 35-35.5'		DB-5 49.5-50'		DB-6 15-15.5'		DB-6 29.5-30'		DB-6 39.5-40'		Part 375-6.8(b) Restricted Residential Soil Cleanup Objective (µg/Kg)
Sample Date:			5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		
Analyte	Analytical Method	Units																									
2,4,5-Trichlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Nitroaniline	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
2,4,6-Trichlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
4-Chloroaniline	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Acenaphthene	8270C	µg/Kg	ND	U	420		86	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2800		ND	U	100,000
Acenaphthylene	8270C	µg/Kg	ND	U	99	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	7000		ND	U	100,000
Acetophenone	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Anthracene	8270C	µg/Kg	ND	U	280	J	110	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6100		ND	U	100,000
Benzo[a]anthracene	8270C	µg/Kg	ND	U	**1000**		280		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	70		**2800**		ND	U	1,000
Atrazine	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Benzo[a]pyrene	8270C	µg/Kg	ND	U	880		230		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	110		**1800**		ND	U	1,000
Benzaldehyde	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Benzo[b]fluoranthene	8270C	µg/Kg	ND	U	820		260		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	69		**1300**		ND	U	1,000
Benzo[g,h,i]perylene	8270C	µg/Kg	ND	U	530		160	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	74	J	600	J	ND	U	100,000
Benzo[k]fluoranthene	8270C	µg/Kg	ND	U	340		130		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	460		ND	U	3,900
Chrysene	8270C	µg/Kg	ND	U	1000		290		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	66	J	2700		ND	U	3,900
Dibenz(a,h)anthracene	8270C	µg/Kg	ND	U	110		43		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	190		ND	U	330
Fluoranthene	8270C	µg/Kg	ND	U	1100		630		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5800		ND	U	100,000
Fluorene	8270C	µg/Kg	ND	U	120	J	59	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6600		ND	U	100,000
Bis (2-chloroethoxy) methane	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Indeno[1,2,3-cd]pyrene	8270C	µg/Kg	ND	U	**530**		160		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	51		**630**		ND	U	500
Bis(2-chloroethyl)ether	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Phenanthrene	8270C	µg/Kg	ND	U	720		460		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	21000		ND	U	100,000
Pyrene	8270C	µg/Kg	ND	U	1600		540		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	110	J	7500		ND	U	100,000
Caprolactam	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Carbazole	8270C	µg/Kg	ND	U	96	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Dibenzofuran	8270C	µg/Kg	ND	U	55	J	47	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	680	J	ND	U	NE
Diphenyl	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2300		ND	U	NE
Hexachlorobutadiene	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Hexachloroethane	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Naphthalene	8270C	µg/Kg	ND	U	130	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5400		150	J	100,000
N-Nitrosodi-n-propylamine	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NE
Pentachlorophenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6,700
Phenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000
3&4 Methylphenol	8270C	µg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	100,000

NOTES:
Units are in micrograms per kilogram (µg/Kg) = parts per billion (ppb).
[a] - This restricted residential soil cleanup objective is not listed in Part 375-6.8(b), but is included in the supplemental soil cleanup objectives listed in CP-51.
ND - Not detected. The analyte was not detected above the method detection limit (MDL).
U - Indicates the analyte was analyzed for but not detected (see "ND" above).
J - Result is less than the reporting limit (RL) but greater than or equal to the MDL and the concentration is an approximate value.
NE - Not established. This compound is not listed in Part 375-6.8(b), nor is there a restricted residential soil cleanup objective established for this compound in the supplemental soil cleanup objectives in CP-51.
Values in **BOLD** and highlighted in red exceed the regulatory levels.

Table 7
Con Edison Kent Ave
Pre-IRM Investigation
Summary of Metal Results

Sample ID:			DB-1 23-23.5'		DB-1 34.5-35'		DB-2 13.5-14'		DB-2 34.5-35'		DB-3 20.5-21'		DB-3 30.5-31'		DB-5 21-21.5'		DB-5 35-35.5'		DB-5 49.5-50'		DB-6 15-15.5'		DB-6 29.5-30'		DB-6 39.5-40'		Part 375-6.8(b) Restricted Residential Soil Cleanup Objective (mg/Kg)
Sample Date:			5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/10/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		5/11/2012		
Analyte	Analytical Method	Units																									
Arsenic	6010B	mg/Kg	5.2		**17.8**		14.4		5.1		2.5		2.5		3.9		3		1.8		5.9		4.8		4.5		16
Barium	6010B	mg/Kg	33.7	J	55.5		84.1		70.8		13.9	J	41.7	J	24.6	J	102		48.2		28.1	J	23.5	J	219		400
Beryllium	6010B	mg/Kg	0.15	J	0.26	J	0.42		0.29	J	ND	U	0.24	J	0.35	J	0.53		0.21	J	0.43	J	0.28	J	0.8		72
Cadmium	6010B	mg/Kg	ND	U	0.42	J	0.48	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.18	J	4.3
Chromium, hexavalent	6010B	mg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	110
Chromium, trivalent[1]	6010B	mg/Kg	7.2		90.4		22.1		24.9		10.1		17.9		10.9		30.8		11.6		43.1		15.3		51.7		180
Cobalt	6010B	mg/Kg	3.3	J	4.1	J	5	J	8.2	J	3.2	J	6.2	J	5.9	J	11.4		5.1	J	6.3	J	6.1	J	20.1		NE
Copper	6010B	mg/Kg	6.9		114		37.9		50.5		7.2		21.1		19.8		26.7		14.1		19.6		21.5		40.1		270
Iron	6010B	mg/Kg	8600		20200		15300		28600		10700		18700		15000		25000		15100		28400		19100		37500		NE
Lead	6010B	mg/Kg	2.9		244		91.9		7.9		9.4		6.6		18.6		11.2		4.9		51.4		5.5		14.9		400
Manganese	6010B	mg/Kg	113		380		217		460		93.7		350		189		524		321		301		147		608		2,000
Nickel	6010B	mg/Kg	7.4	J	32.3		18.5		18.3		7.7	J	14.5		11.6		28		11.9		14.8		12.6		51.9		310
Selenium	6010B	mg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	180
Silver	6010B	mg/Kg	ND	U	0.51	J	0.38	J	0.37	J	ND	U	ND	U	ND	U	0.35	J	ND	U	ND	U	ND	U	0.82	J	180
Vanadium	6010B	mg/Kg	12.5		11.1	J	22.9		45.9		15.7		25.2		15.2		35.7		20.4		29.5		25.8		55		NE
Zinc	6010B	mg/Kg	15.9		112		87.5		43.4		19.4		34		40.2		70.9		26.2		77.7		31.8		98.1		10,000
Mercury	7471A	mg/Kg	ND	U	0.27		0.041		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.14		ND	U	ND	U	0.81
Cyanide, Total	9012A	mg/Kg	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	27

NOTES:
Units are in milligrams per kilogram (mg/Kg) = parts per million (ppm).
[1] - Trivalent Chromium concentration is the reported Total Chromium minus Hexavalent Chromium. Since no Hexavalent Chromium was detected, the Total Chromium concentration has been reported as the Trivalent Chromium concentration.
ND - Not detected. The analyte was not detected above the method detection limit (MDL).
U - Indicates the analyte was analyzed for but not detected (see "ND" above).
J - Result is less than the reporting limit (RL) but greater than or equal to the MDL and the concentration is an approximate value.
NE - Not established. This compound is not listed in Part 375-6.8(b), nor is there a restricted residential soil cleanup objective established for this compound in the supplemental soil cleanup objectives in CP-51.
Values in **BOLD** and highlighted in red exceed the regulatory levels.

Shaw Environmental, Inc.

TABLE 8

IRM ENGINEERING AND CONSTRUCTION COST ESTIMATE

(ASSUMED PERCENTAGE OF SOIL CONTAINING ACM IS 100%)

ITEM DESCRIPTION	QTY	UM	UNIT TOTAL	TOTAL COST
PRE-EXCAVATION ASSESSMENT				
SOIL BORINGS ALONG WATER'S EDGE				
HASP, WORK PLAN, SUMMARY REPORT	1	LS	12,000	12,000
FIELD INVESTIGATION	1	LS	40,000	40,000
SHAW FIELD SUPPORT	4	DAY	2,000	8,000
SUBTOTAL				**$ 60,000**
TOTAL PRE-EXCAVATION ASSESSMENT (ROUNDED)				**$ 60,000**
SHAW ENGINEERING AND CM FOR IRM				
PREPARE RAWP	1	LS	14,000	14,000
PREPARE BID SPECIFICATIONS/DRAWINGS & MEETINGS	1	LS	121,000	121,000
PRE-CONSTRUCTION SURVEY	1	LS	5,300	5,300
PERFORM REVIEW OF CONTRACTOR DELIVERABLES	1	LS	26,500	26,500
FIELD OVERSIGHT (INCLUDING CAMP)	160	DAY	2,000	320,000
3rd PARTY ASBESTOS MONITORING	160	DAY	1,125	180,000
CAMP EQUIPMENT & CONFIRMATION SAMPLE ANALYSIS	1	LS	76,000	76,000
PROJECT CLOSEOUT - FER REPORT	1	LS	31,000	31,000
SUBTOTAL				**$ 773,800**
TOTAL ENGINEERING AND CM (ROUNDED)				**$ 773,800**
CONSTRUCTION				
EXCAVATION AND BACKFILL				
EXCAVATE, SORT, AND LOAD NON-HAZARDOUS SOLID WASTE	11,700	CY	15	175,500
DEMOLITION AND DISPOSAL OF INTERIOR WALLS	400	CY	200	80,000
DISPOSAL OF NON-ACM DEBRIS	600	CY	50	30,000
DEWATERING - SYSTEM SETUP AND OPERATION	1	LS	25,000	25,000
DEWATERING - BAKER TANK FOR STORAGE	1	LS	10,000	10,000
DEWATERING - TRANSPORT, TREAT AND DISPOSE BI-WEEKLY	6	TRK	7,500	45,000
ENVIRONMENTAL CLEAN BACKFILL, COMPACTED	11,700	CY	35	409,500
SUBTOTAL				**$ 775,000**
ACM HAULING AND DISPOSAL TO WASTE MGT				
SUPPLY BLADDER BAGS IN DUMPERS	828	EA	150	124,200
HAUL VIA 22 TON DUMP TRUCK	18,200	TON	58	1,055,600
ENVIRONMENTAL SAMPLING AND TESTING FEE	828	EA	14	11,592
ACM DISPOSAL	18,200	TON	65	1,183,000
SUBTOTAL	**18,200**		**130**	**$ 2,374,392**
NON-ACM HAULING AND DISPPOSAL TO APEX LANDFILL				
ENVIRONMENTAL SAMPLING FEE	-	EA	14	-
INTERMODAL TRANS AND DISPOSAL VIA 62 CY RAILCARS	-	TON	67	-
SUBTOTAL	**-**		**-**	**$ -**
TOTAL DIRECTS				**$ 3,149,392**

Shaw Environmental, Inc.

TABLE 8

IRM ENGINEERING AND CONSTRUCTION COST ESTIMATE

(ASSUMED PERCENTAGE OF SOIL CONTAINING ACM IS 100%)

ITEM DESCRIPTION	QTY	UM	UNIT TOTAL	TOTAL COST
CONSTRUCTION INDIRECTS				
GENERAL CONDITIONS	1		251,951	251,951
INSURANCES AND BONDS @ 5%	1		157,470	157,470
OVERHEAD AND PROFIT @ 15%	1		533,822	533,822
SUBTOTAL				**$ 943,243**
				$ 4,092,635
CONTINGENCY @ 10%	1		409,263	409,263
TOTAL CONSTRUCTION (ROUNDED)				**$ 4,500,000**
GRAND TOTAL (ROUNDED)				**$ 5,300,000**

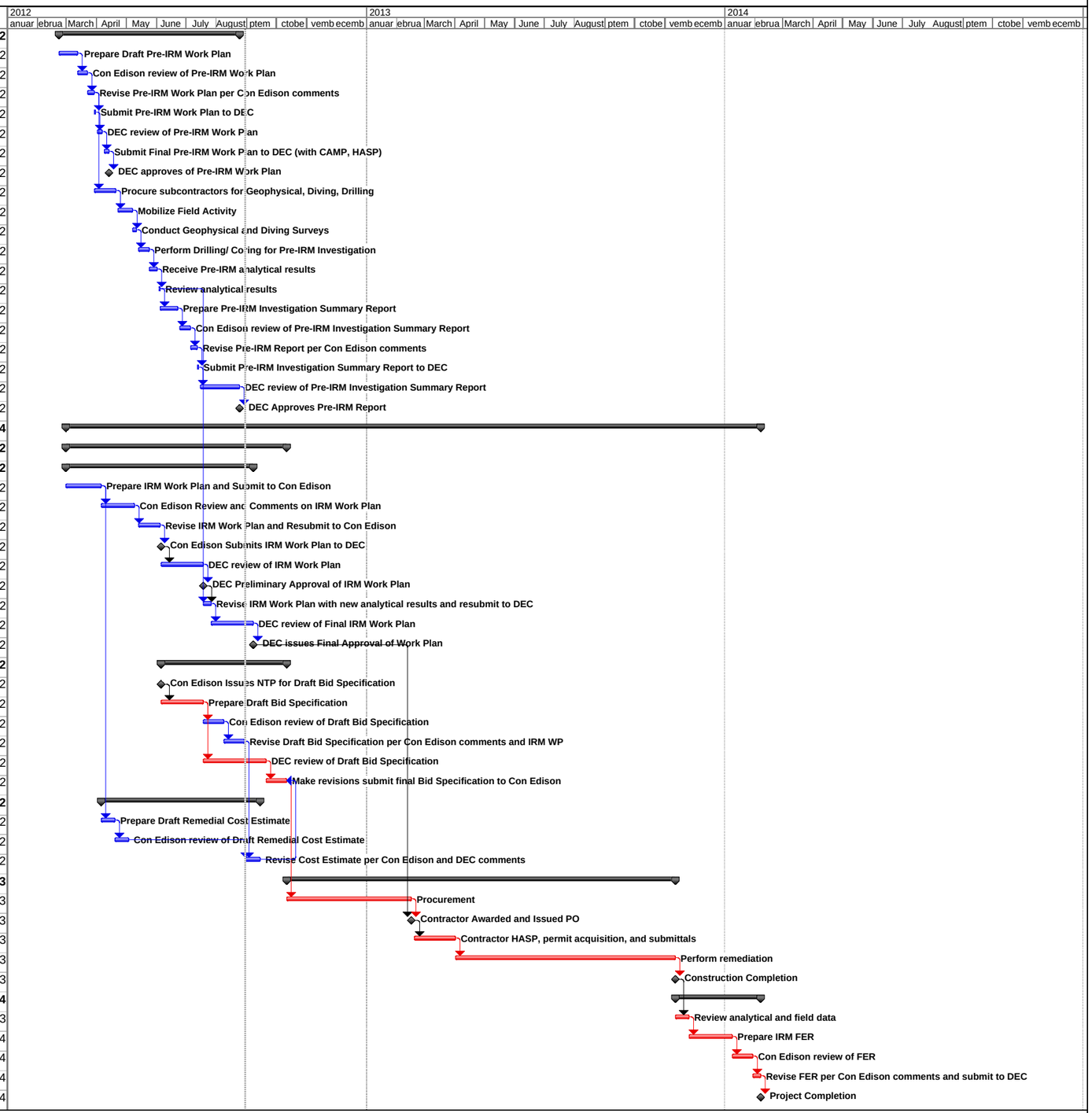
EXCLUSIONS:
OWNER PROJECT MANAGEMENT

ASSUMPTIONS
RATIO OF ACM TO TOTAL SOIL IS 100%
RATIO OF DEBRIS TO TOTAL EXC 5%
BASED ON 160 WORKING DAY DURATION FOR IRM CONSTRUCTION CONTRACT
ACM DISPOSAL IS BASED ON QUOTES FROM WASTE MANAGEMENT
NON-ACM DISPOSAL IS BASED ON QUOTES FROM APEX LANDFILL

Table 9 - IRM Schedule

Thu 8/30/12

ID	Task Name	Duration	Start	Finish
1	**Perform Pre-IRM Investigation**	**130 days**	**Thu 2/23/12**	**Fri 8/24/12**
2	Prepare Draft Pre-IRM Work Plan	13 days	Thu 2/23/12	Mon 3/12/12
3	Con Edison review of Pre-IRM Work Plan	8 days	Tue 3/13/12	Thu 3/22/12
4	Revise Pre-IRM Work Plan per Con Edison comments	5 days	Fri 3/23/12	Thu 3/29/12
5	Submit Pre-IRM Work Plan to DEC	1 day	Fri 3/30/12	Fri 3/30/12
6	DEC review of Pre-IRM Work Plan	5 days	Mon 4/2/12	Fri 4/6/12
7	Submit Final Pre-IRM Work Plan to DEC (with CAMP, HASP)	5 days	Mon 4/9/12	Fri 4/13/12
8	DEC approves of Pre-IRM Work Plan	0 days	Fri 4/13/12	Fri 4/13/12
9	Procure subcontractors for Geophysical, Diving, Drilling	16 days	Fri 3/30/12	Fri 4/20/12
10	Mobilize Field Activity	11 days	Mon 4/23/12	Mon 5/7/12
11	Conduct Geophysical and Diving Surveys	4 days	Tue 5/8/12	Fri 5/11/12
12	Perform Drilling/ Coring for Pre-IRM Investigation	9 days	Mon 5/14/12	Thu 5/24/12
13	Receive Pre-IRM analytical results	5 days	Fri 5/25/12	Fri 6/1/12
14	Review analytical results	1 day	Mon 6/4/12	Mon 6/4/12
15	Prepare Pre-IRM Investigation Summary Report	14 days	Tue 6/5/12	Fri 6/22/12
16	Con Edison review of Pre-IRM Investigation Summary Report	8 days	Mon 6/25/12	Thu 7/5/12
17	Revise Pre-IRM Report per Con Edison comments	5 days	Fri 7/6/12	Thu 7/12/12
18	Submit Pre-IRM Investigation Summary Report to DEC	1 day	Fri 7/13/12	Fri 7/13/12
19	DEC review of Pre-IRM Investigation Summary Report	30 days	Mon 7/16/12	Fri 8/24/12
20	DEC Approves Pre-IRM Report	0 days	Fri 8/24/12	Fri 8/24/12
21	**Site-Wide IRM**	**498 days**	**Thu 3/1/12**	**Thu 2/6/14**
22	**Pre-Construction**	**158 days**	**Thu 3/1/12**	**Thu 10/11/12**
23	**Work Plan**	**134 days**	**Thu 3/1/12**	**Fri 9/7/12**
24	Prepare IRM Work Plan and Submit to Con Edison	26 days	Thu 3/1/12	Thu 4/5/12
25	Con Edison Review and Comments on IRM Work Plan	24 days	Fri 4/6/12	Wed 5/9/12
26	Revise IRM Work Plan and Resubmit to Con Edison	15 days	Mon 5/14/12	Mon 6/4/12
27	Con Edison Submits IRM Work Plan to DEC	0 days	Tue 6/5/12	Tue 6/5/12
28	DEC review of IRM Work Plan	30 days	Wed 6/6/12	Wed 7/18/12
29	DEC Preliminary Approval of IRM Work Plan	0 days	Wed 7/18/12	Wed 7/18/12
30	Revise IRM Work Plan with new analytical results and resubmit to DEC	6 days	Thu 7/19/12	Thu 7/26/12
31	DEC review of Final IRM Work Plan	30 days	Fri 7/27/12	Fri 9/7/12
32	DEC issues Final Approval of Work Plan	0 days	Fri 9/7/12	Fri 9/7/12
33	**Bid Specification**	**90 days**	**Wed 6/6/12**	**Thu 10/11/12**
34	Con Edison Issues NTP for Draft Bid Specification	0 days	Wed 6/6/12	Wed 6/6/12
35	Prepare Draft Bid Specification	30 days	Wed 6/6/12	Wed 7/18/12
36	Con Edison review of Draft Bid Specification	15 days	Thu 7/19/12	Wed 8/8/12
37	Revise Draft Bid Specification per Con Edison comments and IRM WP	15 days	Thu 8/9/12	Wed 8/29/12
38	DEC review of Draft Bid Specification	45 days	Thu 7/19/12	Thu 9/20/12
39	Make revisions submit final Bid Specification to Con Edison	15 days	Fri 9/21/12	Thu 10/11/12
40	**Cost Estimate**	**113 days**	**Fri 4/6/12**	**Fri 9/14/12**
41	Prepare Draft Remedial Cost Estimate	10 days	Fri 4/6/12	Thu 4/19/12
42	Con Edison review of Draft Remedial Cost Estimate	10 days	Fri 4/20/12	Thu 5/3/12
43	Revise Cost Estimate per Con Edison and DEC comments	10 days	Fri 8/31/12	Fri 9/14/12
44	**Construction**	**277 days**	**Fri 10/12/12**	**Mon 11/11/13**
45	Procurement	87 days	Fri 10/12/12	Fri 2/15/13
46	Contractor Awarded and Issued PO	0 days	Fri 2/15/13	Fri 2/15/13
47	Contractor HASP, permit acquisition, and submittals	30 days	Tue 2/19/13	Mon 4/1/13
48	Perform remediation	160 days	Tue 4/2/13	Mon 11/11/13
49	Construction Completion	0 days	Mon 11/11/13	Mon 11/11/13
50	**Post-Construction**	**63 days**	**Tue 11/12/13**	**Thu 2/6/14**
51	Review analytical and field data	10 days	Tue 11/12/13	Mon 11/25/13
52	Prepare IRM FER	32 days	Tue 11/26/13	Wed 1/8/14
53	Con Edison review of FER	15 days	Thu 1/9/14	Wed 1/29/14
54	Revise FER per Con Edison comments and submit to DEC	6 days	Thu 1/30/14	Thu 2/6/14
55	Project Completion	0 days	Thu 2/6/14	Thu 2/6/14



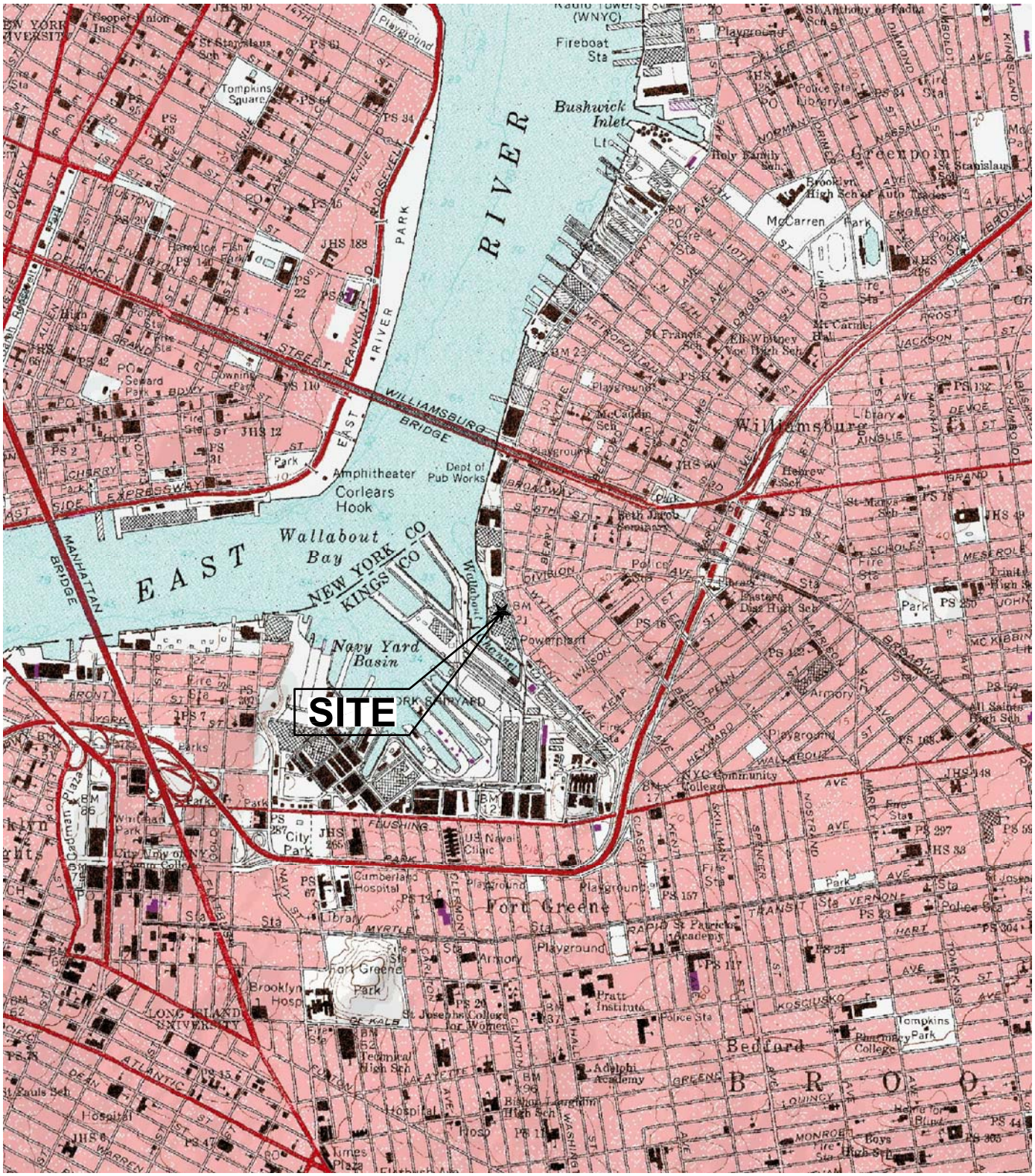
Project: Table 2 - IRM Schedule
Date: Thu 8/30/12

Task | Critical Task | Milestone | Summary

FIGURES

OFFICE
NEW YORK, NY

DRAWING NUMBER
FIGURE 1



VERIFY SCALE
0 1"

APPROXIMATE SCALE

0 2000 4000 6000 FEET

N

REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC MAP OF BROOKLYN, NY
USGS GEOLOGICAL SURVEY, 1966, 1927 NORTH AMERICAN DATUM

Shaw™ Shaw Environmental, Inc.

DESIGNED BY: S. SHATZ	CON EDISON
DRAWN BY: S. SHATZ	LONG ISLAND CITY, NEW YORK
CHECKED BY: C. KRAEMER	SITE LOCATION MAP
	FORMER KENT AVENUE GENERATING STATION 500 KENT AVENUE, BROOKLYN, NEW YORK

APPROVED BY:	DATE:	SCALE:	DRAWING NO.	REV NO.
J. FRANCESCON	04/03/12	AS SHOWN	FIGURE 1	-

File: V:\— CLIENT\Con Edison\126649 Kent Ave\Working\CAD\RM\RM-RAWP\RM RAWP Figure 1.dwg
Plot Date/Time: Apr 04, 2012 - 11:41am
Plotted By: sara.shatz

OFFICE NEW YORK, NY | DRAWING NUMBER FIGURE 2

CONCRETE SLAB FOUNDATION

WALLABOUT CHANNEL

PRESUMED LIMIT OF REMNANT BASEMENT SLAB

BURIED BOILER ROOM FOUNDATION WALL

PROPERTY LINE (TYP)

ASH PIT

NORTH EXCAVATION AREA

REPORTED BURIED 1,500 GALLON FUEL OIL TANK (NOT TO SCALE)

SOUTH EXCAVATION AREA

FORMER NASSAU GAS WORKS

FORMER GENERATING STATION BUILDING FOUNDATION
(BACKFILLED WITH CLEAN FILL)

DIVISION AVENUE

KENT AVENUE

LEGEND

PROPOSED AREA OF INTERIM REMEDIAL MEASURE

SCALE
0 50 100 FEET

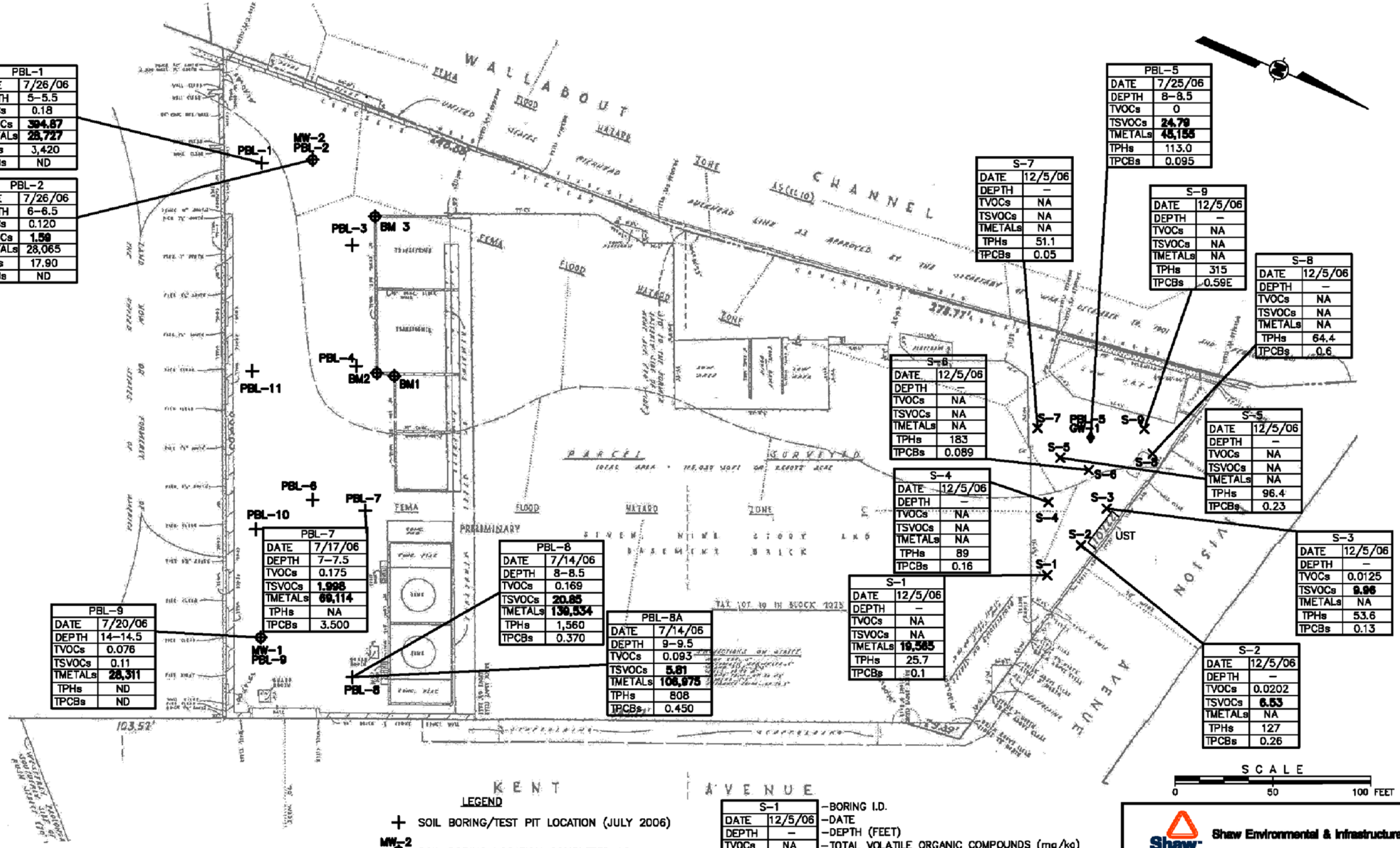
SOURCE: "PHASE II INVESTIGATION REPORT:KENT AVENUE SITE", LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, DATE: FEBRUARY 2000

Shaw Environmental, Inc.

DESIGNED BY: C. KRAEMER	CON EDISON			
DRAWN BY: S. SHATZ	LONG ISLAND CITY, NEW YORK			
CHECKED BY: C. KRAEMER	SITE PLAN			
	FORMER KENT AVENUE GENERATING STATION 500 KENT AVENUE, BROOKLYN, NEW YORK			
APPROVED BY: J. FRANCESCON	DATE: 04/05/12	SCALE: AS SHOWN	DRAWING NO. FIGURE 2	REV NO. -

File: V:\- CLIENT\Con Edison\126649 Kent Ave\Working\CAD\IRM\IRM-RAWP\RAWP figure.dwg
Plot Date/Time: Apr 05, 2012 - 4:30pm
Plotted By: sara.shatz

OFFICE Halbrook, NY | DRAWING NUMBER 121153-FIG3



PBL-1	
DATE	7/26/06
DEPTH	5–5.5
TVOCs	0.18
TSVOCs	**394.87**
TMETALs	**28,727**
TPHs	3,420
TPCBs	ND

PBL-2	
DATE	7/26/06
DEPTH	6–6.5
TVOCs	0.120
TSVOCs	**1.59**
TMETALs	28,065
TPHs	17.90
TPCBs	ND

PBL-7	
DATE	7/17/06
DEPTH	7–7.5
TVOCs	0.175
TSVOCs	**1.998**
TMETALs	**69,114**
TPHs	NA
TPCBs	3.500

PBL-8	
DATE	7/14/06
DEPTH	8–8.5
TVOCs	0.169
TSVOCs	**20.85**
TMETALs	**139,534**
TPHs	1,560
TPCBs	0.370

PBL-8A	
DATE	7/14/06
DEPTH	9–9.5
TVOCs	0.093
TSVOCs	**5.81**
TMETALs	**106,975**
TPHs	808
TPCBs	0.450

PBL-9	
DATE	7/20/06
DEPTH	14–14.5
TVOCs	0.076
TSVOCs	0.11
TMETALs	**28,311**
TPHs	ND
TPCBs	ND

S-1	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	**19,565**
TPHs	25.7
TPCBs	0.1

S-2	
DATE	12/5/06
DEPTH	–
TVOCs	0.0202
TSVOCs	**6.53**
TMETALs	NA
TPHs	127
TPCBs	0.26

S-3	
DATE	12/5/06
DEPTH	–
TVOCs	0.0125
TSVOCs	**9.96**
TMETALs	NA
TPHs	53.6
TPCBs	0.13

S-4	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	89
TPCBs	0.16

S-5	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	96.4
TPCBs	0.23

S-6	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	183
TPCBs	0.089

S-7	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	51.1
TPCBs	0.05

S-8	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	64.4
TPCBs	0.6

S-9	
DATE	12/5/06
DEPTH	–
TVOCs	NA
TSVOCs	NA
TMETALs	NA
TPHs	315
TPCBs	0.59E

PBL-5	
DATE	7/25/06
DEPTH	8–8.5
TVOCs	0
TSVOCs	**24.79**
TMETALs	**48,155**
TPHs	113.0
TPCBs	0.095

LEGEND

- + SOIL BORING/TEST PIT LOCATION (JULY 2006)
- MW-2 ⊕ SOIL BORING LOCATION COMPLETED AS MONITORING WELL
- GW-1 ♦ SOIL BORING LOCATION COMPLETED AS TEMPORARY WELL
- × SOIL BORING LOCATION (DECEMBER 2006)
- BM1 ⊕ BENCH MARK (ARBITRARY DATUM)

S-1		
DATE	12/5/06	–BORING I.D.
DEPTH	–	–DATE
TVOCs	NA	–DEPTH (FEET)
TSVOCs	NA	–TOTAL VOLATILE ORGANIC COMPOUNDS (mg/kg)
TMETALs	**19,565**	–TOTAL SEMI–VOLATILE ORGANIC COMPOUNDS (mg/kg)
TPHs	25.7	–TOTAL METALS (mg/kg)
TPCBs	0.1	–TOTAL PETROLEUM HYDROCARBONS (mg/kg)
		–TOTAL POLYCHLORINATED BIPHENYLS (mg/kg)

ANALYTICAL RESULTS IN **BOLD** INDICATE AN EXCEEDANCE OF ONE OR MORE COMPOUNDS TO NYSDEC TAGMS

ND = NOT DETECTED
NA = NOT ANALYZED
mg/kg = MILLIGRAMS PER KILOGRAM

SITE PLAN SOURCE: "PHASE II INVESTIGATION REPORT:KENT AVENUE SITE", LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, DATE: FEBRUARY 2000

Shaw Environmental & Infrastructure

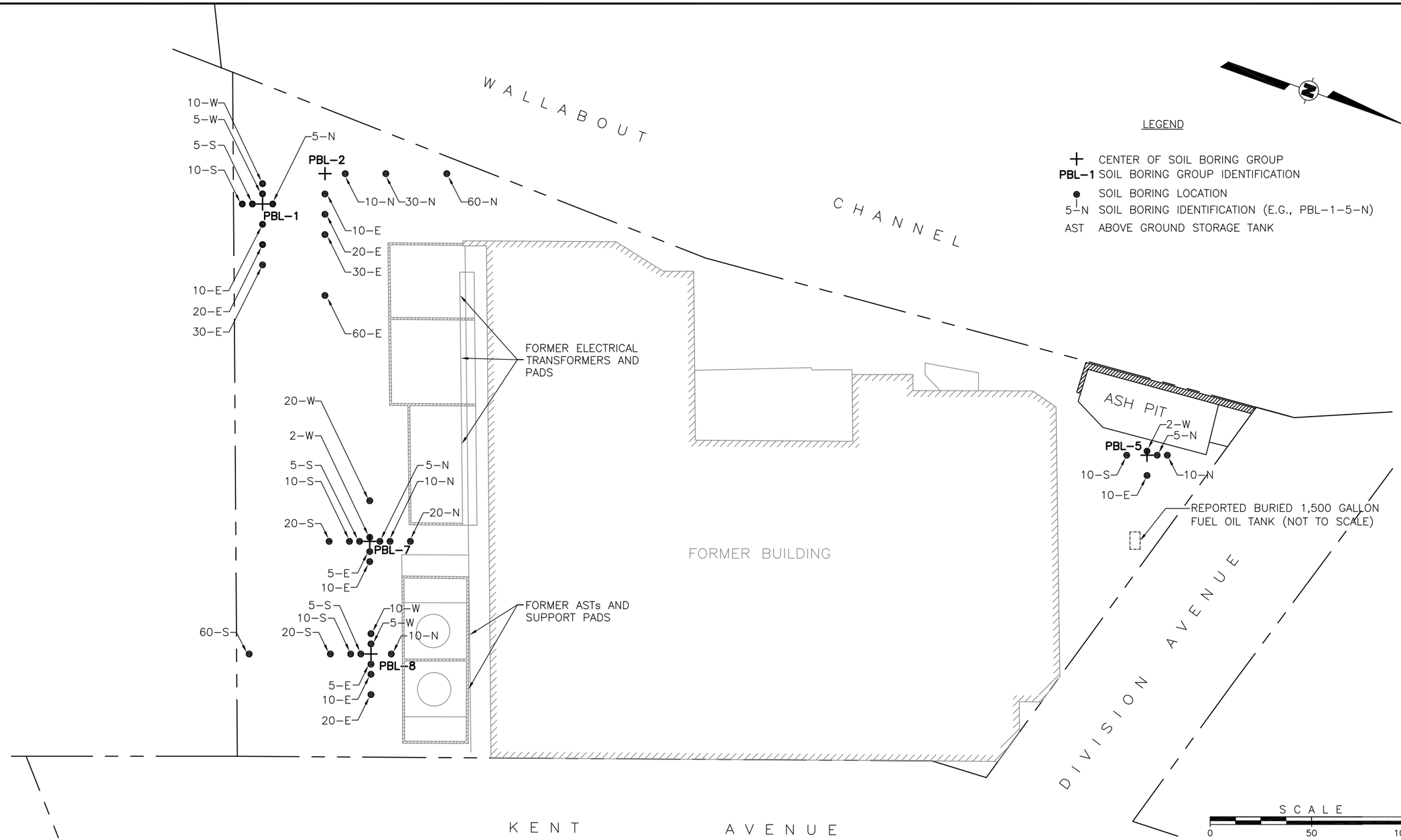
SOIL ANALYTICAL DATA

CON EDISON
FORMER GENERATING STATION
500 KENT AVENUE, BROOKLYN, NEW YORK

DESIGNED BY	A. Mesak	1/24/07	CHECKED BY	A. Mesak	1/24/07
DRAWN BY	R. Togoff	1/24/07	APPROVED BY	S. Ash	1/24/07
SCALE: AS SHOWN	DRAWING NO. 121153-FIG3		PROJECT NO. 121153	SHEET NO. FIGURE 3	REVISION NO. ––

File: F:\Con Ed\Kent Ave\FINAL\121153-FIG6.dwg
Plot Date/Time: Jan 25, 2007 – 10:10am
Plotted By: randy.togoff

OFFICE: New York, NY
DRAWING NUMBER: KENT-FIG4



SOURCE: "PHASE II INVESTIGATION REPORT:KENT AVENUE SITE", LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, DATE: FEBRUARY 2000

Shaw Environmental & Infrastructure

PRE-DESIGN INVESTIGATION BORING LOCATION PLAN
CON EDISON
FORMER GENERATING STATION
500 KENT AVENUE, BROOKLYN, NEW YORK

DESIGNED BY	C. Kraemer	2/19/10	CHECKED BY	C. Kraemer	2/19/10
DRAWN BY	S. Tumaian	2/19/10	APPROVED BY	S. Ash	2/19/10

SCALE:	DRAWING NO.	PROJECT NO.	SHEET NO.	REVISION NO.
AS SHOWN	KENT-FIG4	-	FIGURE 4	--

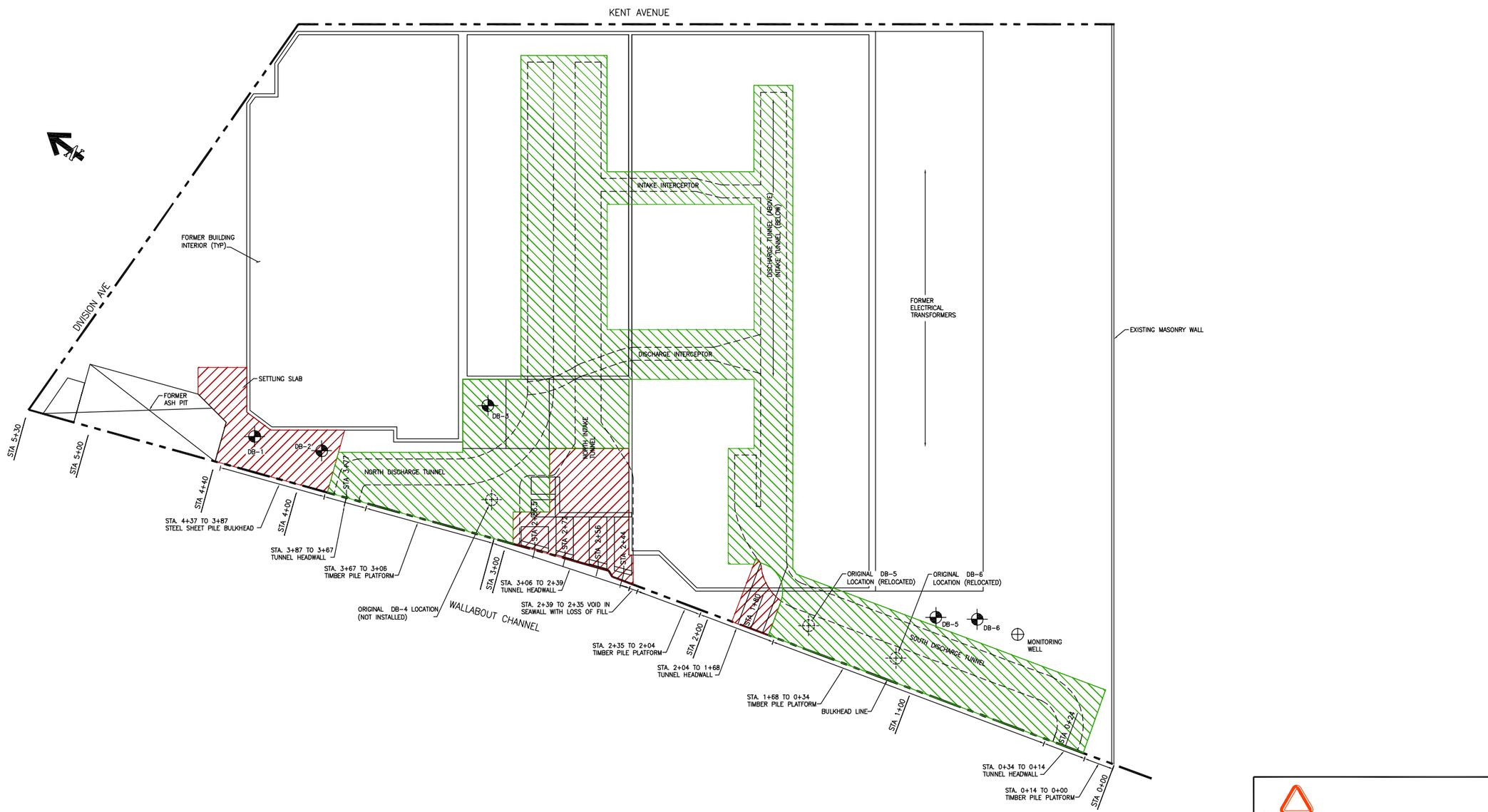
XREF Files: IMAGE Files: Work Area.JPG
File: V:\1 - CLIENT\Con Edison\126649 Kent Ave\Working\CAD\FER figures\KENT-FIG4.dwg
Plot Date/Time: Apr 26, 2012 - 4:05pm
Plotted By: sara.shatz

FIGURE 5

DRAWING NUMBER

OFFICE NEW YORK, NY

VERIFY SCALE 0 1/2"



NOTE:
SITE MAP BASED ON MCLAREN DRAWING B-3, IN APPENDIX B OF THE REPORT UNDERWATER INSPECTION AND CONDITION SURVEY DATED DECEMBER 2006

PRE-IRM SOIL BORING LOCATIONS

SCALE: 1"=50'

Shaw Environmental, Inc.

DESIGNED BY: S. SHATZ	CON EDISON LONG ISLAND CITY, NEW YORK			
DRAWN BY: S. SHATZ	PRE-IRM SOIL BORING LOCATIONS			
CHECKED BY: D. GREFFENIUS	FORMER KENT AVENUE GENERATING STATION 500 KENT AVENUE, BROOKLYN, NEW YORK			
APPROVED BY: J. FRANCESCON	DATE: 08/30/12	SCALE: AS SHOWN	DRAWING NO. FIGURE 5	REV NO. -

ATTACHMENTS

ATTACHMENT A

COMMUNITY AIR MONITORING PLAN

1.0 INTRODUCTION

1.1 Background

During the upcoming Pre-Interim Remedial Measure (IRM) Investigation field work (utility pre-clearing, sonic drilling) and IRM Remedial Action Work Plan activities (test pits, shallow soil excavation), air and dust emissions will be monitored and controlled to protect the surrounding environment from exposure to potential airborne contaminants. A Community Air Monitoring Plan (CAMP) is intended to provide a measure of protection for the downwind community (*i.e.*, off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities.

This CAMP has been developed to address particulates (dust) and potential subsurface organic vapors that may be released to the air during implementation of IRM activities. The CAMP was prepared in accordance with New York State Department of Health (NYSDOH) requirements presented in Appendix 1A of the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (2010). The CAMP requires real-time monitoring for dust and organic vapors at the downwind perimeter of each designated work area for the benefit of downwind adjoining properties that contain sensitive receptors (*e.g.*, Division Avenue, Kent Avenue, the public park east of Kent Avenue, and the high-rise residential building on Kent Avenue north of Clymer Street). The measures included in the CAMP will provide a level of protection for the occupants of the neighborhood schools and residences, as well as the downwind community, from potential airborne releases. The CAMP sets forth specific action levels for determining monitoring frequency and the appropriate corrective actions, including work shutdown.

1.2 Purpose and Objectives

The principal purpose of the CAMP is to monitor air quality at the Site and areas where soil is being disturbed or loaded during the investigative/remedial activities. The CAMP for this project describes monitoring of dust and vapors on a real-time, continuous basis. Air monitoring will involve standard monitoring functions for environmental projects including real-time air monitoring for particulate matter less than 10 micrometers in size (PM-10) and volatile organic compounds (VOCs); observations for visible dust emissions and odors; inspection and monitoring of the contractor's work practices; and reporting to the NYSDEC and NYSDOH.

Continuous monitoring will be performed during all ground intrusive activities. Ground intrusive activities include, but are not limited to, soil excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Principal objectives of the CAMP are as follows:

- Monitor dust as PM-10 on a real-time, continuous basis such that dust associated with the investigative and remedial actions is maintained below action levels.
- Monitor organic vapors as VOCs on a real-time, continuous basis such that potential vapors associated with the investigative and remedial actions are maintained below action levels.
- Monitor odors and dust emissions (based on olfactory and visible evidence) so that vapors and dust from work areas do not leave the Site.
- In the event that PM-10 or VOC concentrations exceed action levels, Site personnel will be immediately notified so that all necessary corrective actions can be taken.

1.3 Operations to be Monitored

The investigative and remedial actions to be performed at the Site consist of:

- Pre-clearing six soil boring locations using a vacuum-powered apparatus to a depth of five feet (ft) below ground surface (bgs) in the area between the former building foundation slab and Wallabout Channel;
- Advancement of six soil borings using a sonic drill rig to a minimum of 30 ft bgs in the area between the former building slab and Wallabout Channel;
- Excavation of six structural test pits and 23 fill characterization test pits using a backhoe on the northern and southern portions of the Site; and
- Excavation of soils to approximately eight ft bgs using an excavator at the northern and southern portions of the Site, and loading the soil onto trucks for off-site disposal.

2.0 AIR MONITORING PROCEDURES

Air monitoring stations for measuring dust as PM-10 will be established at two stationary locations (the upwind Site perimeter or work area, and the downwind Site perimeter or work area), and a roving air monitor using a hand-held instrument for measuring VOCs will walk the northern and eastern perimeters of the Site, and will also collect organic vapor data at the two stationary dust monitor locations. The downwind monitoring station will be located in the predominantly downwind direction of the Site and its location will vary depending on daily conditions (*e.g.*, wind direction). A windsock will be used to determine and monitor wind direction throughout the work day.

These air-monitoring activities include real-time monitoring for particulates and VOCs based on the New York State CAMP requirements. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. **CAMP-Table 1** summarizes dust and VOC action levels and appropriate actions. A flow chart summarizing action levels/appropriate actions is provided on **CAMP-Figure 1**.

2.1 VOC Direct-Reading Monitoring

Organic vapor monitoring equipment will consist of a real-time photoionization detector (PID) equipped with the appropriate lamp capable of detecting total VOCs that could potentially be released from Site investigative and remedial activities. In addition to instantaneous readings, the instrument will be capable of calculating 15-minute running average VOC concentrations, which will be compared to the prescribed total organic vapor action levels. The PID will be equipped with an audible alarm to indicate exceedance of the action level. The instrument will be calibrated in accordance with the manufacturer's operating instructions on a daily basis and documented in a dedicated field logbook.

Upwind 15-minute average background VOC levels will be subtracted from the downwind 15-minute average VOC levels to establish ambient organic vapor concentrations reflective of work activities at a particular point in time. Therefore, the "background" level is the most recent upwind 15-minute average reading.

The 15-minute running average PID concentrations will be compared to the following:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the Site or work area exceeds **5 parts per million** (**ppm**) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the Site or work area persist at levels in excess of **5 ppm** over background but less than **25 ppm**, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the Site or half the distance to the nearest potential receptor or residential structure, whichever is less (but in no case less than 20 feet), is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above **25 ppm** at the downwind perimeter of the Site or work area, activities must be shutdown and the engineering controls and site work plan re-evaluated.

As an extra precautionary measure, when the downwind perimeter of the Site is within 20 feet of the nearest potential receptor (Division Avenue), then the perimeter organic vapor level must not exceed VOC background concentrations. This guideline is proposed in order to avoid vapor migration into nearby residential buildings. If VOC background concentrations are exceeded at any time at any perimeter location within 20 feet of the nearest receptor, then activities must be shutdown and the engineering controls and site work plan re-evaluated.

2.2 Particulate (Dust) Direct-Reading Monitoring

Particulate (dust) monitoring equipment will consist of a real-time aerosol or particulate dust monitor capable of measuring particulate matter less than 10 micrometers in size (PM-10) that could be released from Site investigative and remedial activities. The instrument will be capable of providing instantaneous readings as well as integrating measurements over a period of 15 minutes (or less) for comparison to the prescribed airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level, and will be calibrated in accordance with the manufacturer's operating instructions and documented in a dedicated logbook.

Dust concentrations will be monitored continuously at the upwind and downwind perimeters of the Site or work area at temporary particulate monitoring stations. In addition, fugitive dust migration will be visually assessed during all work activities. As with VOC levels, upwind 15-minute average background particulate levels will be subtracted from the downwind 15-minute average particulate levels to establish dust concentrations reflective of work activities at a particular point in time. The "background" particulate level, therefore, is the most recent upwind 15-minute average reading.

The 15-minute running average particulate readings will be compared to the following:

- If the downwind PM-10 particulate level is **100 micrograms per cubic meter** (**µg/m^3**) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust control/suppression measures must be implemented. Work can continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed **150 µg/m^3** above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than **150 µg/m^3** above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

3.0 AIR MONITORING RECORDKEEPING AND OBSERVATIONS

The qualified Shaw Safety Officer or Technician on site will ensure that all air monitoring data is logged in a dedicated logbook. Documentation shall be made clear, concise, and provide the monitoring data, time of entry, location, personnel, weather conditions, and background concentrations for each monitoring station. Documentation will also include all observational data that has the potential for impacting results, such as damage to instruments, site equipment problems, off-site interferences, on-site public interferences, or weather-related interferences.

All pages must be numbered, no lines shall be left blank (or if necessary they should be lined through), and all pages must be initialed in ink. The last entry page for the shift or day that has blank space left at the bottom shall have a line drawn diagonally across it and signed at the bottom of the page. All corrections must be made with a single line, initialed, and dated.

A windsock will be temporarily installed at the Site to monitor and determine wind direction throughout the day. Meteorological "wind rose" or graphic data will be available for use at the Site as a reference for assessing how wind speed and direction are typically distributed (*i.e.*, the frequency of possible wind directions) in the general vicinity of the Site. Area weather data such as wind speed and relative humidity shall be obtained on a daily basis while work is progressing and documented in the dedicated field logbook.

Real-time data (*e.g.*, PM-10 and VOCs) will be downloaded from the equipment's respective dataloggers at the end of each day. Fifteen-minute averages from each station and instantaneous readings, if any, used for decision purposes will be recorded.

The NYSDEC and NYSDOH will be notified promptly via phone and/or electronic mail of any exceedance of an action level and of the corrective actions taken in connection with the exceedance. All recorded dust and organic vapor readings will be available for State (NYSDEC and NYSDOH) personnel review.

3.1 Equipment Operational Requirements

The air monitoring equipment will be operated by trained and qualified personnel. Personnel who perform air monitoring functions described in this CAMP will be experienced in the use of field air monitoring equipment, as well as in the air monitoring procedures described above. There will be appropriate staff (industrial hygienist or environmental scientist) for assessing the results of air monitoring and advising the Shaw Safety Officer, and the Con Edison Project Manager and onsite Construction Management representative, of air quality considerations.

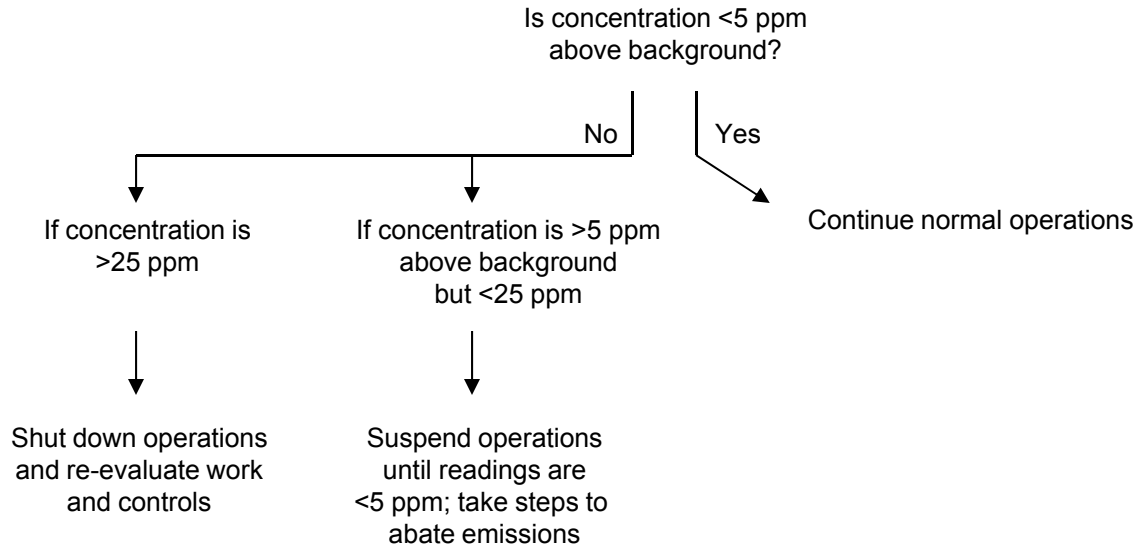
All monitoring equipment will be calibrated on a daily basis in accordance with the manufacturer's operating instructions. A dedicated logbook for each monitoring unit will be maintained that details the date, time, calibration gas or other standard, and the name of the person performing the calibration.

CAMP - Table 1
Air Monitoring Summary Table for
Interim Remedial Measure (IRM) Activities
Former Kent Avenue Generating Station, Brooklyn, NY

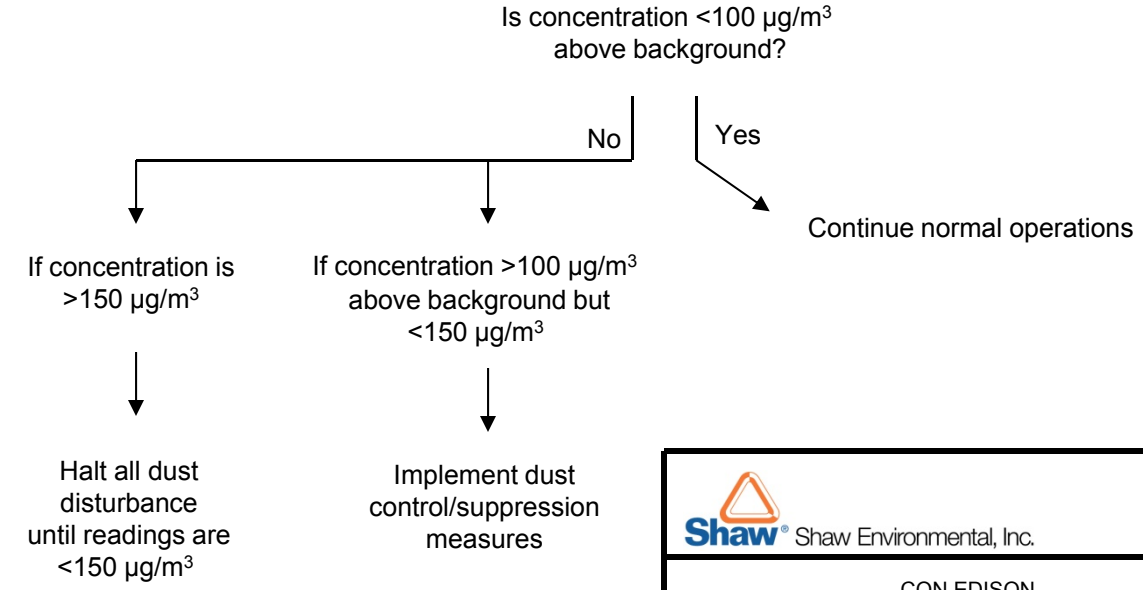
Monitoring Device	Monitoring Location/ Personnel	Monitoring Frequency	Action Level	Action
PM-10 Particulate/ Aerosol Air Monitoring Unit with Audible Alarm and Datalogger	Upwind and Downwind of Site or Work Area	Continuous during all utility pre-clearing, drilling, test pit digging, soil excavation, or dust-producing activities for 15- minute average readings ("Background" is most recent upwind 15-minute average reading)	<100 µg/m^3 (15-min. TWA) above upwind background level at downwind perimeter of Site or work area >100 µg/m^3 (15-min. TWA) above upwind background level at downwind perimeter of Site or work area, or visible dust leaving the Site/work area >150 µg/m^3 (15-min. TWA) above upwind background level at downwind perimeter of Site or work area	Continue normal operations Implement dust control/suppression measures Halt all dust disturbance until downwind perimeter of Site or work area is <150 µg/m^3 above upwind background level
PID with Audible Alarm and Datalogger	Upwind and Downwind of Site or Work Area	Continuous during all utility pre-clearing, drilling, test pit digging, soil excavation, or dust-producing activities for 15- minute average readings ("Background" is most recent upwind 15-minute average reading)	<5 ppm above background >5 ppm above background but <25 ppm (15-min. TWA) >25 ppm above background within 20 feet of nearest receptor	Continue normal operations Suspend operations until readings indicate <5 ppm for 15-min. TWA; Take steps to abate emissions* Shutdown operations and re-evaluate work and controls

TWA – Time-weighted average
PID – Photoionization detector
µg/m^3 – Micrograms per cubic meter
ppm – Parts per million
** Use plastic to cover test pits, excavation, or stockpiled soil*

Volatile Organic Monitoring
Downwind of Work Area



Particulate Monitoring
Downwind of Work Area



VOC and particulate readings based on 15-minute time weighted average

Shaw® Shaw Environmental, Inc.

CON EDISON

CAMP - FIGURE 1

FLOW CHART FOR VOC AND PARTICULATE MONITORING ACTION LEVELS

FORMER KENT AVENUE GENERATING STATION
BROOKLYN, NY

ATTACHMENT B

HEALTH & SAFETY PLAN AMENDMENT

SITE SPECIFIC HEALTH AND SAFETY PLAN
AMENDMENT DOCUMENTATION

Project Name: **Remedial Excavation Activities at the Former Con Edison Kent Avenue Generating Station** **Project No.:** **126649**

Amendment No.: **7** **Date:** **June 12, 2012**

Amendment Revises: *Page:* **N/A** **Section:** **N/A**

Task(s) Amendment Affects:* **Scope of Work, Task Specific Hazards, Protective Equipment, Activity Hazard Analyses, Air Monitoring and Attachments**

**(Attach new/revised Job Safety Analyses)*

Reason For Amendment: This amendment is for an additional scope of work at the site consisting of oversight of the remedial excavation and collection of soil confirmation samples, as well as conducting environmental and asbestos air monitoring at the site.

Amendment: *(Attach separate sheet(s) as necessary)*

See Attachment.

Completed by:

Barry Conaway

Barry Conaway, CSP, OHST

Reviewed / Approved by:

Thomas Larison
Project Manager

Introduction:

This Health and Safety Plan (HASP) Amendment (#7) has been prepared to address remedial excavation hazards associated with the former Con Edison Kent Avenue Generating Station site located in New York City, New York. This HASP amendment will be used in conjunction with the original HASP dated April 2006 and subsequent amendments. All project participants must read and understand this HASP amendment and verify having done so by signing the agreement and acknowledgement sheet (See Attachment 1). The project approval form for this HASP amendment is on the cover page of this amendment.

Authorization to Stop Work:

All workers working at the site have authorization to stop work if an unsafe condition exists or a safety procedure(s) is being disregarded in accordance with Shaw Health and Safety Procedure HS040 "Stop Work Authority" and Con Edison's "Time Out" and "Rules We Live By" Policies.

Scope of Work:

Shaw's scope of work will involve the following activities:

- Collect confirmation soil samples as needed (all asbestos contaminated material [ACM] samples will be collected by a New York City Department of Environmental Protection [NYCDEP] certified Asbestos Inspector working for the Asbestos Abatement Contractor); and
- Implement the Community Air Monitoring Plan.

Shaw's onsite personnel will also oversee the following tasks performed by others:

- Excavate soil/fill from the North Excavation Area (approx. 2,325 tons) and South Excavation Area (approx. 13,350 tons) down to former basement floor slabs or down to the top of the water table.
- Dewater the North Excavation Area as needed and pump water into an on-site storage tank for later disposal off site.
- Load excavated soil onto trucks for transport & disposal off site.
- Backfill excavated areas with certified clean fill in compliance with a New York City Department of Sanitation (NYCDOS) Fill Materials Operation Permit.

At the conclusion of onsite activities, Shaw will provide a comprehensive report to Con Edison.

Task-Specific Hazard Analysis/Controls:

Based on the scope of work, the primary physical hazards include working around heavy equipment, slip/trip/falls in and around an excavation, struck-by or against objects, flying debris, loud noise levels and heat stress. Chemical hazards should be expected from the excavation activities if ACM is encountered. Airborne particulates could be significant when using excavation equipment or if the dust control measures detailed in the NYCDEP Asbestos Abatement Variance are not implemented. Dust / particulate controls shall be implemented continuously during the remedial excavation work. Air monitoring and engineering controls shall be employed in accordance with the air monitoring section below.

In order to minimize or eliminate the potential for illness or injury, environmental releases, rework or equipment /property damage, a daily task-specific Job Safety Analyses (JSAs) per Shaw E&I procedure HS045(Attachment 3) will be prepared by the Shaw E&I Supervisor or the subcontractor's supervisor for their specific activity. In addition, Activity Hazard Analyses on the above tasks are included to assist in preparation of the task-specific JSA per HS045.

Shaw's site personnel and subcontractors shall review the Task-Specific JSA for main task each day prior to the start of work. This review, given by Shaw personnel, shall be done at the morning tailgate safety meeting. However, as

conditions or work practices change throughout the day, the JSA may need to be updated to address additional or new hazards and their controls. Thus, all site crew members must be briefed on the additional hazards and control measures. The JSA reviews must be documented on the JSA form, and crew member signatures must be obtained verifying that the review has been acknowledged.

Chemical Hazards

Based on site history and previous site assessments, Table 3.1 presents a summary profile of the chemical hazards and control measures to follow for the contaminants of concern. The primary route of exposure to site workers is skin contact and inhalation during soil excavation in potentially contaminated material, and any other invasive activity that has potential for contact with contaminated materials.

Asbestos is a naturally occurring fibrous mineral found around the world. In the United States it was used in a variety of building construction materials for insulation and as a fire retardant. Although the United States restricted its use in 1978, many residential and commercial buildings still have ACM. People may be exposed to the harmful effects of asbestos if they inhale the fibers from damaged ACM while occupying or renovating a facility. See the chemical hazard table below for asbestos health hazard information.

Asbestos containing materials used in pipe and boiler insulation products is considered friable if is physically disturbed. Exposure to asbestos occurs when workers breathe airborne fibers released from damaged materials. Workers completing sampling tasks have a minimal risk of exposure from asbestos sampling. Personnel shall don Level C during sampling.

Additional chemicals will be added to the table below after receiving characterization data.

Table 3.1
Chemical Hazard Summary

CHEMICAL	EXPOSURE ROUTES	PEL / TLV	HEALTH HAZARDS/ PHYSICAL HAZARDS
Asbestos	Inhalation, ingestion	0.1 fibers /cc (8 hr TWA) 1.0 fibers /cc (excursion limit 30 min.)	A respiratory, eye irritant; asbestos fibers are associated with chronic lung disease; asbestosis, lung cancer, malignant mesothelioma; confirmed human carcinogen Asbestos is largely inert; metal/mineral content reacts with acid material
Benzene	Skin, eye, inhalation, ingestion	1.0 ppm SKIN STEL 5.0 ppm	Prolonged skin contact with Benzene or excessive inhalation of its vapor may cause headache, weakness, loss of appetite, and lassitude. A human carcinogen. Extremely flammable, keep sources of ignition away. Incompatible with fluorides, chlorides, oxygen, permanganates, acids, and peroxides.
Ethylbenzene	Skin, eye, inhalation, ingestion	100 ppm STEL 125 ppm	Fatigue, weakness, confusion, euphoria, dizziness, headache, dilated pupils, insomnia, numbness/tingling in hands, feet, dermatitis Reacts with strong oxidizers; flammable liquid; releases toxic gases during combustion
MTBE	Skin, eye, inhalation, ingestion	40 ppm (ACGIH)	Fatigue, weakness, confusion, euphoria, dizziness, headache, eye irritation, Central nervous system depression, kidney damage Vapors may form explosive mixtures with air,

CHEMICAL	EXPOSURE ROUTES	PEL / TLV	HEALTH HAZARDS/ PHYSICAL HAZARDS
			incompatible with oxidizing agents.
Toluene	Skin, eye, inhalation, ingestion	200 ppm SKIN Ceiling 300 ppm	Fatigue, weakness, confusion, euphoria, dizziness, headache, dilated pupils, insomnia, numbness/tingling in hands, feet, dermatitis
			Reacts with strong oxidizers; flammable liquid; releases toxic gases during combustion
Xylene	Skin, eye, inhalation, ingestion	100 ppm STEL 150 ppm	Dizziness, excitement, drowsiness, incoherent, staggering walking; eye, nose, throat irritation; nausea, vomiting, dermatitis
			Flammable; reacts with strong oxidizers; thermal decomposition releases toxic gases
Polychlorinated biphenyls (54% chlorine)	Skin, eye, ingestion, inhalation	0.5 mg/m^3 SKIN	Overexposure may cause immediate irritation to the eyes; contact with the skin will cause chloracne or vermatitis, long-term liver damage, and carcinogen.
Lead	Ingestion, inhalation, eye	0.05 mg/m^3	Overexposure may cause weakness, insomnia, anemia, tremor, kidney disease, eye irritation.

Physical Hazards:

To minimize physical hazards, best industry safety protocols will be followed at all times. Failure to follow safety protocols will result in removal of the worker from the site. All personnel shall be familiar with the physical hazards presented by each of the tasks they perform. Personnel at the site shall inform the Project Supervisor of unsafe conditions and acts immediately. Unsafe conditions and acts shall be corrected as soon as possible. All personnel are authorized to stop work if a danger exists to site workers.

Underground Utilities:

The remedial excavation areas shall be studied to rule out subsurface structures and utilities that may damaged during the task. Before intrusive activities begin, the general contractor will confirm utility surveys of the areas to be disturbed in accordance with Con Edison's Utility Clearance Procedures. The contractor shall call Dig Safely NY (1-800-272-4480) three days prior to the start of work. Excavation activities which occur on private property will require the services of a private utility locating service to mark out underground lines. After the subsurface lines have been marked, the first five foot below ground surface shall be cleared by hand digging or vacuum excavation under the asbestos abatement variance by certified workers working under a licensed Abatement Contractor.

Asbestos Safety

It is anticipated that the remedial program will require an Asbestos Abatement Variance from the NYCDEP. An Asbestos Abatement Variance Application will be prepared and submitted by Con Edison in accordance with Section 1-03 of Title 15, Chapter 1 and submitted to the NYCDEP. The variance application will specify which specific rules will require a variance, why they require a variance, and describe alternative procedures that will satisfy each requirement as modified. This will include an asbestos air monitoring program to protect the surrounding community, as well as the on-site workers, from exposure to asbestos.

Con Edison will provide Shaw with an Asbestos Exposure Control Plan which establishes mandatory guidelines to protect the safety and health of all onsite workers, the client's employees and the public where the potential exposure to harmful concentrations of asbestos may exist. Specifically, this plan will establishes safe work practices, personal hygiene, engineering controls, and medical and employee monitoring for any work involving asbestos.

The NYS licensed general contractor/Asbestos Abatement Contractor will have a designated NYC certified Asbestos Supervisor onsite who is capable of identifying existing and potential asbestos hazards in the workplace and the proper methods to control them in order to protect workers the client and the public, and has the authority necessary to take prompt corrective measures to eliminate or control such hazards.

The specific duties of the Asbestos Supervisor include at least the following:

- Establishing regulated areas and assuring that access to and from these areas is limited to authorized persons.
- Assuring the adequacy of worker exposure monitoring.
- Assuring that all workers exposed to asbestos and other airborne chemical constituents of concern wear appropriate personal protective equipment and are trained in the use and limitations of appropriate methods of exposure control.
- Assuring that proper hygiene facilities are provided and that workers are trained NYCDEP certified Asbestos Handlers to use these facilities.
- Assuring that feasible engineering controls, as established in the Asbestos Abatement Variance, are implemented maintained in proper operating condition and functioning properly. Engineering control shall be amended water or foam, placing wetted suspect materials in a labeled asbestos waste double bag and goose neck closed with duct tape, and possibly the construction of a barrier (in accordance with the Asbestos Project Variance conditions).
- Assuring that all required medical surveillance, including pre- and post-job physical examinations, is performed and documented as required.
- Assuring that all asbestos training and licensing requirements are met.
- Ensuring that notification requirements are met.

To prevent unwanted exposure, the following control practices shall be implemented:

- Only authorized personnel may enter regulated areas.
- All personnel entering a regulated area must be supplied with and are required to use an appropriate respirator.
- Amended Water shall be used during excavation activities;
- The possible construction of a barrier in accordance with the Asbestos Project Variance conditions;
- Do not use compressed air to remove asbestos or materials containing asbestos;
- All surfaces shall be maintained as free as practicable of ACM waste and debris and accompanying dust;
- All spills and sudden releases of material containing asbestos shall be cleaned up as soon as possible.
- Surfaces contaminated with asbestos may not be cleaned with the use of compressed air or dry methods;
- HEPA filtered vacuuming equipment shall be used for sealing waste bags of PPE and debris. The HEPA vacuum will also be used for surface cleaning of tool and equipment prior to leaving a regulated area.
- Used disposable PPE will be double bagged and properly disposed as asbestos contaminated waste.

The Permissible Exposure Limit (PEL) for asbestos is 0.1 fiber per cubic centimeter (0.1 f/cc) of air as an 8-hour time weighted average (TWA). The Excursion Limit for asbestos is 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes as sampled during the expected worst case exposure.

Final clearance assessments shall become part of the work plan. Final exposure assessments shall be completed through a coordinated effort of the general contractor and Shaw and its subcontractor(s) before additional activities begin.

Excavation Activities

The remedial excavation depth will average eight to ten feet below ground surface. When conducting excavations, Con Edison procedures for excavation and trenching must be followed. A copy of these procedures will be maintained with the field trailer.

- Any excavation 5 feet deep or greater into which persons can enter and perform work must be shored, sloped, or otherwise made safe for entry. Excavations less than 5 feet in depth and which a competent person examines and determines there to be no potential for cave-in do not require protective systems. Excavations will be done in compliance with OSHA regulation 29CF 1926.650. **No one shall enter the remedial excavations during this phase of work.**
- All excavations shall be performed from a stable ground position. Daily inspections of the excavation shall be made by the Excavation Competent Person (a competent person who has received training in excavation safety). The Excavation Competent Person shall determine the likelihood of a cave-in, and remedial action such as sloping or shoring shall be taken if the walls appear to be unstable. The Excavation Competent Person shall verify that adequate means of egress are in place.
- All spoils/equipment shall be located at least 2 feet from the edge of the excavation to prevent it from falling back into the excavation and surcharging the excavation face. Perimeter protection will be used for all open excavations at the site (excluding the active work zones requiring excavation equipment), consisting of barricades or fencing placed at a distance not closer than 6 feet from the edge of the excavation, and displays adequate warning at an elevation of 3 feet to 4 feet above ground.

All project personnel shall participate in the site-specific training session and be instructed on the following requirements.

- Before excavating, the existence and location of underground pipe, electrical equipment, and gas lines will be determined and documented using the local ONE CALL service, private utility service or other approved geophysical methods.
- No ignition sources are permitted if the ambient airborne concentration of flammable vapors exceeds 10 percent of the lower explosive limit (LEL) during the excavation. A combustible gas indicator (CGI) will be used to make this determination.
- Operations must be suspended and the area vented if the airborne flammable concentration reaches 10 percent of the LEL in the area of an ignition source (i.e., sparks from bucket of excavator).
- Combustible gas, Hydrogen sulfide, Carbon monoxide, Oxygen and organic vapor readings of the general work area will be made regularly in accordance with the original HASP.
- If excavating equipment is located in the vicinity of overhead power lines, maintain at least 10 feet from overhead power lines, up to 50 kV. For voltages over 50 kV, add 0.4 inches per kV to obtain the safe distance between equipment and power lines.

The hydraulic hoe ram may be utilized to break up brick and concreted encountered in the holes. Personnel shall expect elevated noise levels and don hearing protection in addition to safety glasses with attached side shields, and steel toe boots. During the breakup of debris, dust and particles may fly from the point of impact. The field team leader shall keep observers away from the chipping area where the risk of getting struck by debris is moderate to high.

Heavy Equipment Safety

An excavator or similar heavy equipment will be used for the remedial excavation work. The operator of this equipment will be familiar with the requirements for inspection and operation of the equipment they will be using, as well as be a NYCDEP/NYSDOL certified Asbestos Handler and/or Supervisor. Before equipment is used, it will have a written inspection by the Rental Company or operator to ensure that it is in safe operating condition, and the Operators/Oilers will inspect the equipment before the use of each shift. The following guidelines will be adhered to while operating heavy construction equipment:

- Equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded.

- Catching rides, Getting off or on any equipment while it is in motion is prohibited.
- Use the three-point contact rule when getting on and off of equipment.
- Always clear the foot pegs of debris to ensure good footing and to prevent slippage, especially in wet conditions.
- Spotters will be used to back-up equipment and direct traffic in all "blind" areas.
- All personnel working on site shall wear reflective traffic safety vest.
- Equipment will be operated in accordance with the manufacturer's instructions and recommendations.
- Determinations of road conditions and structures will be made in advance to assure that clearances and load capacities are safe for the passage of equipment.
- The heavy equipment's bucket or attachment will be either fully lowered or blocked when service work is being performed. The equipment mechanic shall follow Con Edison's CEHSP S12.00 – Lock Out / Tag Out Procedures. Equipment designed to be serviced while running are exempt from this requirement.
- The heavy equipment's bucket or attachment will be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the engines stopped and brakes set, unless work being performed on the machine requires otherwise.
- No guard, safety appliance, or device will be removed from machinery or equipment, or made ineffective except for making immediate repairs, lubrications, or adjustments, and them only after the power has been shut off. All guards and devices will be replaced immediately after completion of repairs and adjustments and before power is turned on.
- The heavy equipment will be shut down prior to and during fueling operations.
- The heavy equipment must be equipped with a dry chemical fire extinguisher with a minimum rating of 5-B: C.
- The operator must operate the machine seated in the cab with an operable seat belt secured, hard hat, safety glasses with attached side shields, and reflective traffic safety vest.
- The operator shall don hearing protection while operating the hydraulic hoe-ram.
- Personnel will not work or pass under or ride in the bucket or boom or cab of heavy equipment.
- The heavy equipment must be equipped with a reverse signal alarm that is distinguishable from background engine or work area noise.
- Standard hand signals will be used to communicate between operators and ground crew.
- Before beginning the digging process, lower the stabilizers so the wheels are off the ground leveling the unit.
- Heavy equipment operating within close proximity to the water may use vegetable based hydraulic oil.
- Absorbent pads and granular sorbent media shall be available onsite to contain leaks from rupture hoses or refueling activities. All leaks shall be reported immediately to the Con Edison Construction Inspector.

Underground Storage Tank Removal

Underground storage tank (UST) removal is considered a hazardous activity and workers performing this task need to take steps to ensure the safe removal of tanks. Site activities shall follow the recommended guidelines in American Petroleum Institute #1604 "Removal and Disposal of Used Underground Petroleum Storage Tanks" and National Fire Protection Association #327 "Standard Procedures for Cleaning and Safeguarding Small Tanks and Containers without Entry".

The primary hazards when engaged in UST tasks include, fire, explosions, splashed by liquids, falls into excavations, spillage of tank products onto the ground, poor grounding and bonding of equipment and improper use of equipment.

During site preparation the following practices shall be adhered to:

- Observe work area to see if sufficient space is available to remove the tank without disturbing other structures.
- Obtain the necessary tank closure permits required by local, state or federal statutes.
- Contact the local or private utility locating service to identify all service, power and communication lines. All utility locations shall be marked. Also the tank and its piping and vent shall be marked.
- Sample the tank's contents for a proper characterization and verify the volume of material in the tank. Measure the tank's vapor space to determine its combustible gas and oxygen content.
- Establish orange safety fence barrier to prevent unauthorized personnel from entering the work area.
- Spill control materials must be available at the site.

- A fire extinguisher shall be available in the work area.
- Inspect heavy equipment prior to its arrival onsite to ensure it is adequate to excavate tank and lift / pull tank from its in-ground position
- Pumping and ventilation equipment used onsite shall be grounded and bonded, spark proof, and explosion resistant. During pumping and ventilation operations this is particularly important. The contractor shall place a grounding rod in the ground. The ground rod shall be tested to ensure it has a resistance to ground of 25 ohms or less. If he the resistance is greater than 25 ohms, then a second rod shall be installed a minimum of six feet away and the two rods bonded together. A grounding cable shall be attached to the rod(s) and equipment used for cold cutting or cleaning the tank. The contractor shall use only non sparking tools (brass or beryllium-copper alloy) for the air chisel / rivet buster.
- The Contractor's qualified person onsite shall verify that the tank is prepared and ready to cold cut. A Marine chemist will not be required for this activity.
-
- Review the work task and JSA with the task specific crew.

Tank Excavation/Removal:

- Use experienced operators that are NYCDEP/NYSDOL certified Asbestos Handlers and/or Supervisor to excavate soil from around tank
- Excavation and hoisting equipment and tools used to remove the tank shall be rated for the weight of the tank.
- Set up fire extinguishing and oil spill supplies near the work area.
- Remove all products from the tank using a vacuum truck with hose attached to a stinger wand. The tank may require a envelop cut on the tank using cold cutting techniques. The product shall be shipped to a licensed disposal facility after the material has been profiled.
- Remove the tank from the excavated area. Secure the tank on a level surface to prevent movement.
- Clean the tank with an approved Con Edison cleaning solution to remove remaining sludge, scale and liquid. The Con Edison Construction Inspector shall approve the cleaning solution.
- The tank shall be cleaned until the LEL readings are 0%
- Inert the tank to reduce the flammable vapors to 0 percent lower explosive limit and 0% Oxygen. Follow the NFPA/API guidelines for venting and purging/inerting. A standard method of tank purging, once all liquids have been removed, is placement of one and one-half (1 1/2) pounds of dry ice (carbon dioxide) per one hundred (100) gallons of tank liquid capacity while simultaneously sealing all tank openings except the vent(s). Nitrogen gas is also an alternative.
- Periodically monitor the tank to verify the flammable vapors are 0 percent lower explosive limit and the oxygen is 0%. The air monitoring equipment sensor for LEL is not effective below 14% oxygen.

Tank Cutting:

- The preferred method of cutting a tank is with cold cutting tools or equipment such as those that utilize nonelectric or nonflammable or non sparking system (pneumatic chisel, or drills, high pressure water or power shears attached to excavator. A cutting torch or cut off saw shall never be used to open tanks.
- A tank must be vapor free and clean before attempting to open it up. The tank's atmosphere must be 0 % LEL and O % oxygen. The air monitoring equipment (wheatstone bridge sensor) for LEL is not effective below 14% oxygen.

Pumping Equipment

When field personnel use pumping equipment to transfer liquids, operating control measures are required for the hazards associated with the work activity. The requirements and safe work practices listed below shall be observed:

- Ensure the installation of bleed valves so personnel can depressurize the system appropriately to bring it to a zero state prior to routine maintenance or repairs.

- Before maintenance or repair activities are conducted, identify all lockout and tagout points for all equipment to be serviced, including bleed valve locations. Follow Con Edison's CEHSP S12.00 – Lock Out / Tag Out Procedures.
- All hose clamps and connections must be secured and inspected each day for defects; damaged equipment accessories must be repaired or replaced.
- The qualified engineer and/or field technician must ensure that all pressurized hoses are equipped with hose whip prevention chains at each hose-to-hose connection and at the hose-to-pump and, if applicable, the hose-to-tool or fitting connections to prevent movement or flapping in the event of a sudden rupture under pressure
- Tanks and vessels valves shall be checked prior receiving ground water.
- All vessels shall have fall protection systems to prevent employee exposures to falls.
- Pumping equipment shall be monitored at all times when in operation.
- The pressurized system shall have appropriate guarding around all rotation parts and hazard warning labels for fans, hot surfaces, and electrical supply areas.

Commercial Truck Operations

When commercial trucks are used to deliver/pickup remediation equipment or transport waste materials they may be asked to follow assigned transportation routes to minimize noise and traffic in a local community. A copy of the assigned route will be sent to the commercial drivers' dispatchers to ensure the proper route is followed.

The following safety rules will be observed while on site:

- All truck drivers hauling hazardous materials must have a driver's license recognized by United States Department of Transportation and have a hazard materials endorsement.
- Adhering to established traffic patterns and posted speed limit while on site.
- Following instruction of traffic control and spotter personnel.
- If requested by the Asbestos Abatement Contractor's Supervisor to exit the cab, visibly check immediate areas for operating equipment to ensure a safe exit.
- Hardhat, safety glasses with attached side shields, full length pants/shirt, protective toe-cap safety boots and reflective vest will be worn outside of the vehicle.
- The trucks shall have a working dump bed with a tailgate.
- All non-ACM loads must be covered with a tarp (not netting) during transportation. And the tarp needs to be secured over the edge of the trailer for at least three locations on each side.
- All ACM loads will be placed onto polysheet-lined beds with the polysheet material wrapping over the entire top of the load or as required by the Asbestos Abatement Variance.
- Sediment and mud shall be pressure washed in a specific truck decon area to help keep the public road clean.
- No rapid backing; Prior to backing insure the area is clear of equipment and personnel.
- No "Jake braking" or compression engine braking is allowed on site or in the neighborhood surrounding the site.
- No scavenging.
- No smoking.
- No alcohol or drugs.
- No firearms.

Protective Equipment for Engineering Oversight Personnel

Task	Initial PPE Level	Upgrade PPE Level	Skin Protection	Respiratory Protection	Other PPE
Remedial Excavation Outside Exclusion Zone (EZ) and Contaminant Reduction Zone (CRZ)	Level D / Modified Level D-1	None	Work clothes with long pants and shirt with a 4" sleeve, examination gloves, Tyvek® coveralls as needed	Filtering face piece for nuisance particulates during hydraulic hoe ram activities	Hard-hat, steel-toe boots, Type I safety vest, hearing protection safety glasses with attached side shields, and Leather gloves
Soil / Ground water / vessel sampling	Level D - 1	None	Work clothes with long pants and shirt with a 4" sleeve, examination gloves, Tyvek® coveralls as needed	None	Hard-hat, steel-toe boots, Type I safety vest, hearing protection, safety glasses with attached side shields, and Leather gloves
Equipment Decontamination (Not Exposed to Asbestos)	Level D / Level D-1	None	Work clothes with long pants and shirt with a 4" sleeve, examination gloves, Tyvek® coveralls as needed	None	Hard-hat, steel-toe boots, Type I safety vest, hearing protection, safety glasses with attached side shields, and Leather gloves
General onsite duties – site preparation, shipping and receiving, etc.	Level D	None	Work clothes with long pants and shirt with a 4" sleeve, examination gloves, Tyvek® coveralls as needed	None	Hard-hat, steel-toe boots, Type I safety vest, hearing protection, safety glasses with attached side shields, and Leather gloves

Air Monitoring Action Level Table for Oversight Personnel

Monitoring Device	Monitoring Location/ Personnel	Monitoring Frequency	Action Level	Action
Air Sampling pump W/ 25 mm 0.8 µm MCE filter (ACM)	Breathing zone of authorized oversight personnel in the ACM regulated work area	Daily during operations; until project completion	0.0 f/cc - 5 f/cc 5 f/cc – 10 f/cc ≥ 10 f/cc (action levels may be lower in accordance with Asbestos Abatement Variance)	Level C (full face respirator – negative pressure) or PAPR Level B Airline or SCBA respirator) Stop Work; evaluate the asbestos work practices
LEL/O_2/ H_2S/ CO	EZ in breathing zone and Work Area during intrusive work	Prior to and periodic during excavation	≥ 10% LEL < 19.6% O_2 ≥ 5 ppm H_2S	Stop work; Evacuate area; determine source of readings and take corrective actions, ventilate
PID (10.2 eV Lamp) (Organic vapors)	EZ in breathing zone and Work Area during intrusive work	Continuous Monitoring	< 1 ppm > 1 ppm - < 10 ppm* > 10 ppm	Level D/D+; continue work/identify source with detector tubes Level C Stop work; consult Project HSM
Benzene detector tubes w/ hand pump	EZ in breathing zone and Work Area during intrusive work	Periodic during excavation	< 0.5 ppm > 0.5 ppm – <5 ppm > 5 ppm	Level D/Modified D - Continue operations Level C – continue operations Stop work; Evacuate area; determine source of readings and take corrective actions ventilate and contact Project HSM

**** Sustained levels in the breathing zone for 1 minute.***

**** Note: Instruments must be calibrated according to manufacturer's recommendations.***

ATTACHMENT 1

AGREEMENT AND ACKNOWLEDGEMENT SHEET
Health and Safety Tailgate Meeting Form

HASP AMENDMENT AGREEMENT AND ACKNOWLEDGEMENT SHEET

HASP AMENDMENT AGREEMENT AND ACKNOWLEDGEMENT		
1. I have been given a full verbal review of the original HASP and all pertinent addenda for this project by Shaw Environmental personnel, and have read and fully understand the HASP, HASP Amendments and my responsibilities. 2. I agree to abide by the provisions of the HASP and all pertinent Amendments.		
Name		Signature
Company		Date
Name		Signature
Company		Date
Name		Signature
Company		Date
Name		Signature
Company		Date
Name		Signature
Company		Date
Name		Signature
Company		Date
Name		Signature
Company		Date

(PROCEDURE HS051)
TAILGATE SAFETY MEETING FORM

Project Name/Number:_____ Date:_____ Time: _____
Client:_____
Work Activities:_____
HospitalName/Address:_____
Hospital Phone No.:_____ Ambulance Phone No.:_____

Safety Topics Presented

Chemical Hazards_____
_____
Physical Hazards:_____
_____
Personal Protective Equipment:
Activity:_____ PPE Level:_____
Activity:_____ PPE Level:_____
Activity:_____ PPE Level:_____
Activity:_____ PPE Level:_____
Activity:_____ PPE Level:_____
New Equipment:_____
Other SafetyTopic(s):_____

Attendees

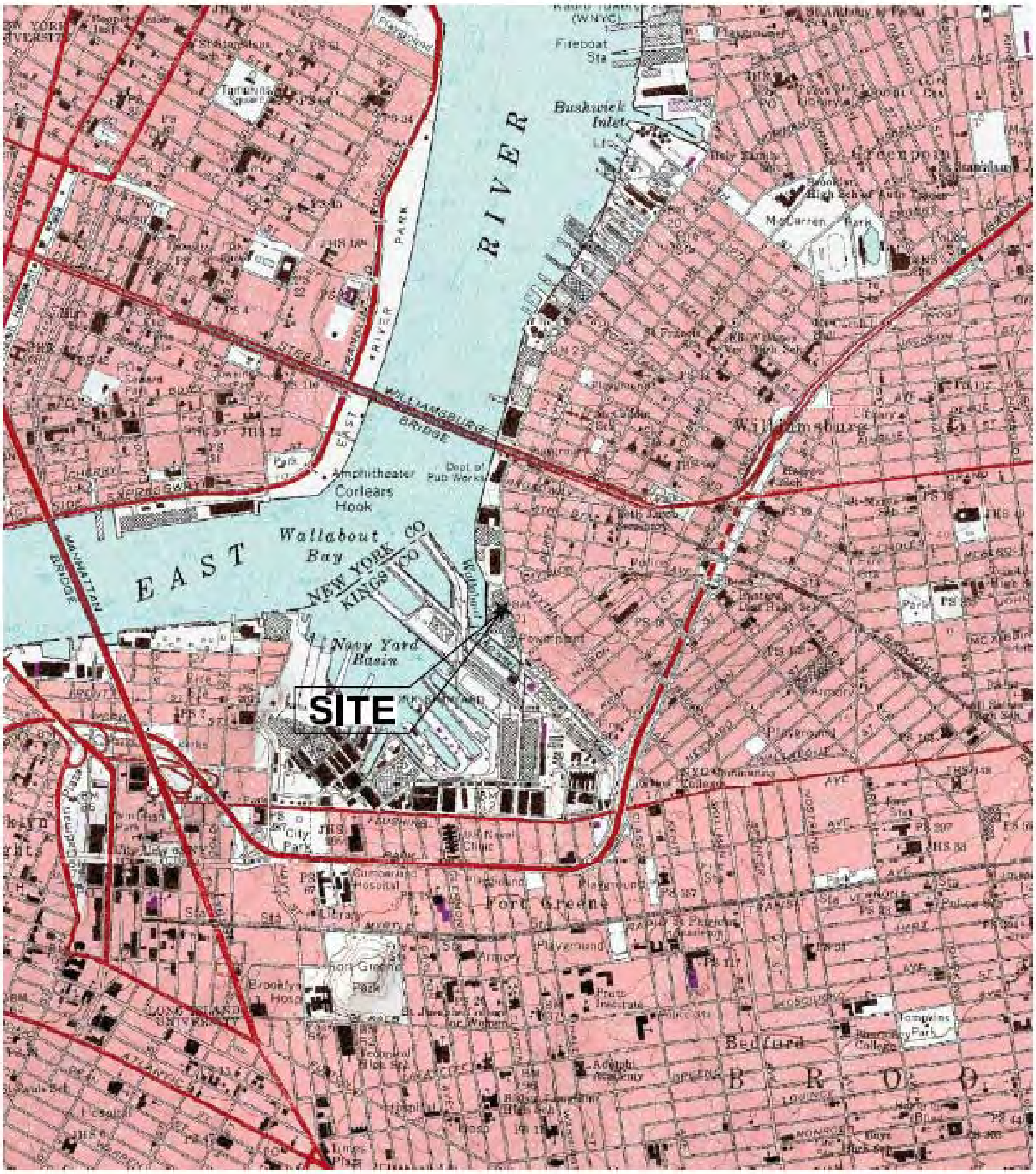
PRINTED NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Meeting conducted by:
_____ _____

ATTACHMENT 2

Site Location Map
Site Plan

OFFICE: NEW YORK, NY | DRAWING NUMBER: FIGURE 1

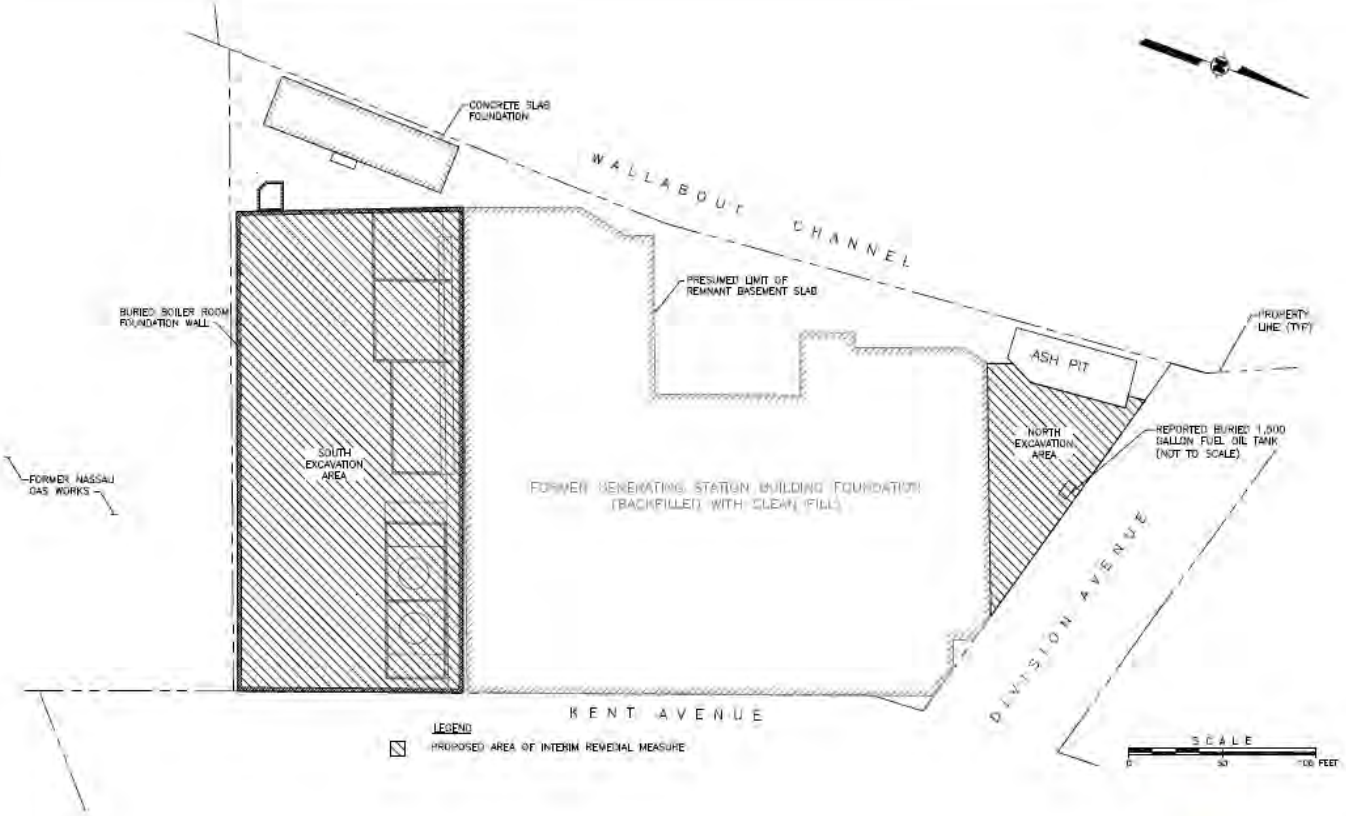


APPROXIMATE SCALE

0 2000 4000 6000 FEET

REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC MAP OF BROOKLYN, NY
USGS GEOLOGICAL SURVEY, 1966, 1927 NORTH AMERICAN DATUM

Shaw Environmental, Inc.				
DESIGNED BY: S. SHATZ	CON EDISON LONG ISLAND CITY, NEW YORK			
DRAWN BY: S. SHATZ	SITE LOCATION MAP			
CHECKED BY: C. KRAEMER	FORMER KENT AVENUE GENERATING STATION 500 KENT AVENUE, BROOKLYN, NEW YORK			
APPROVED BY: J. FRANCESCON	DATE: 04/03/12	SCALE: AS SHOWN	DRAWING NO.: FIGURE 1	REV NO.: -



SOURCE: "PHASE II INVESTIGATION REPORT-KENT AVENUE SITE", LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, DATE: FEBRUARY 2000

OFFICE: NEW YORK, NY | DRAWING NUMBER: FIGURE 2

Shaw Environmental, Inc.

DRAWN BY: C. KRAEMER	CONFIDENCE: LONGISLAND CITY, NEW YORK
CHECKED BY: S. CHATZ	SITE PLAN
APPROVED BY: C. KRAEMER	FORMER KENT AVENUE GENERATING STATION 350 KENT AVENUE BROOKLYN, NEW YORK
CAD/GIS/DTP: J. FRANCESCON	DATE: 04/05/12 | SCALE: AS SHOWN | DRAWING NO.: FIGURE 2 | REVISION: -

ATTACHMENT 3

JOB SAFETY ANALYSIS/ HS045

Job Safety Analysis Checklist Form

DATE:
JOB#:
PERMIT#:
ISSUED BY:
SUPERVISOR:

Job Analyzed: _____ **Project Name:** _____

Consider the following and check the items which apply to the job, then review with the work crew.

PERMITS

- ____ Excavation
- ____ Cold Work
- ____ Hot Work
- ____ Confined Space Entry Permit
- ____ All Conditions Met
- ____ Signed-off When Complete
- ____ Other: _____

PPE

- ____ Chemical Protective Gloves
- ____ Leather Gloves
- ____ Special Purpose Gloves (e.g. Whizards)
- ____ Chemical Protective Coveralls
- ____ Acid Suit
- ____ Chemical protective Boots
- ____ Chemical Splash Goggles
- ____ Face Shield
- ____ Respirator
- ____ Fresh Air Ventilation
- ____ Hearing Protection
- ____ Safety Harness
- ____ Burning Goggles/Welder's Helmet
- ____ Other: _____

TOOLS

- ____ Current Inspection
- ____ Proper Tools for the Job
- ____ Good Tool Condition
- ____ Qualifications, e.g. explosive actuated tool
- ____ Other: _____

EMERGENCY EQUIPMENT

- ____ Fire Extinguishers
- ____ Safety Shower/Eyewash
- ____ Evacuation Route Mapped
- ____ Other: _____

ACCESS

- ____ Scaffold (properly inspected ____)
- ____ Scaffold Training
- ____ Ladder (HS 302 followed)
- ____ Man-lift
- ____ Personnel Basket (inspected/approved)
- ____ Operator Training
- ____ Special Provisions
- ____ Other: _____

WELDING

- ____ Flash-burns
- ____ Combustibles
- ____ Spark Containment
- ____ Shields
- ____ Grounding
- ____ Water Hose
- ____ Fire Extinguisher
- ____ Fire Blanket
- ____ Fire Watch
- ____ Sewer Covers
- ____ Other: _____

OVERHEAD WORK

- ____ Barricades
- ____ Signs
- ____ Hole Cover
- ____ Handrail
- ____ Other: _____

ELECTRICAL

- ____ Locked & Tagged out
- ____ Try Start/Stop Switch
- ____ GFCI Test
- ____ Assured Grounding
- ____ Extension Cord Inspection
- ____ Other: _____

LIFTING

- ____ Forklift
- ____ Boom Truck
- ____ Load Chart
- ____ Angle
- ____ Crane
- ____ Chain-fall
- ____ Proper Rigging Practices
- ____ Manual Lifting
- ____ Condition of Equipment
- ____ Operator Certification

DRILLING / DIRECT PUSH

- ____ Underground Utilities
- ____ Overhead Hazards
- ____ Rig Inspected
- ____ Air Monitoring
- ____ Emergency Procedures
- ____ Other: _____

HAZARDS (ENVIRONMENTAL)

- ____ Cold Stress
- ____ Heat Stress
- ____ Heavy Objects
- ____ Hot/Cold Surfaces or Materials
- ____ Inadequate Lighting
- ____ Irritating Plants
- ____ Noise
- ____ Heavy Weather
- ____ Insects/Animals
- ____ Other: _____

HAZARDS (CHEMICALS)

- ____ Chemical Burn Skin/Eyes
- ____ Flammable
- ____ Ingestion
- ____ Inhalation
- ____ Skin Contact

HAZARDS (BODY)

- ____ Fall Potential
- ____ Pinch Points
- ____ Slip-Trip Potential
- ____ Other: _____

OTHER WORK IN AREA

- ____ Others Working Overhead
- ____ Type Work Others Doing
- ____ PPE Due to Other Work
- ____ Other: _____

CONFINED SPACE ENTRY

- ____ Permit Required
- ____ Permit Completed
- ____ Personnel Trained
- ____ Rescue Services Available

EXCAVATION

- ____ Permit Completed
- ____ Competent Person Supervising
- ____ Underground Utilities
- ____ Overhead Hazards
- ____ Soils Tested
- ____ Heavy Equipment Inspected
- ____ Perimeter Protection
- ____ Daily Inspections
- ____ Protective Systems
- ____ Air Monitoring

SUPERVISOR/FOREMAN RECOMMENDATIONS:

Job Safety Analysis Worksheet Form

DATE:
JOB#:
PERMIT#:
ISSUED BY:
SUPERVISOR:

Location of Job (Unit/Location on Project):		**Job Task Analyzed**
Required PPE:	**Safety Access/ Location**	Supervisor of Work:
	Safe Haven:	JSA Prepared By:
	Wind Direction:	Are other crews in area?
Pre-Job Preparation 1. Fill out JSA 2. Review JSA (EVERYONE) 3. Sign JSA (EVERYONE)	Evacuation Route: Assembly Point::	New: / Revised:

Job Task (What you are doing)	**Audit the Job:** Audit Time:
Potential Hazards	Supervisor's Comments:
Recommended Action or Procedure	Supervisor's Initials:
Review Shaw's Stop Work Authorization, Time Out policy and Rules We Live By	

Crew Name Signatures:		

ACTIVITY HAZARD ANALYSIS FOR CONTRACTOR OVERSIGHT				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Contractor Oversight	Lack of communicating tasks ideals to field personnel may lead to an injury/illness, environmental hazard, near hit, equipment damage, or rework.	• Site management will conduct Job Safety Analysis with field personnel before the start of work on a new task. • Project personnel shall inspect all equipment before it is used. Equipment that is damaged shall be tagged out of service until it is repaired. • Unsafe acts or conditions shall be reported to the Site Manager/subcontractor site lead and corrected as soon possible. • Review Shaw's Stop Work Authorization and Con Edison's Rules We Live By and Time Out policies		
	Struck By/ Against Motor Vehicles/ Operating Equipment	• Wear reflective warning vests when exposed to vehicular traffic • Isolate potential equipment swing areas • Avoid/isolate activities in high traffic areas • Make eye contact with vehicle operators before approaching/crossing high traffic areas • Understand and review hand signals • Emphasize The Buddy System where injury potential exists	Hard hat, safety glasses, steel toe work boots, reflective traffic safety vests Don PPE specific for each task	
	Inhalation and Contact with site contaminants	• Provide workers proper skin, eye and respiratory protection based on the exposure hazards present • Review hazardous properties of site contaminants with workers before operations begin • Monitor breathing zone air to determine levels of contaminants. • Maintain the buddy system in areas where sudden releases of toxic vapors may occur. • Follow OSHA standard safety work practices.	Hard hat, safety glasses, steel toe work boots, reflective traffic safety vests Don PPE specific for each task	PID LEL/O_2. Draeger Pump w/ benzene tubes Air Sampling pump W/ 25 mm 0.8 µm MCE filter
	Slips, Trips, Falls	• Clear walkways, work areas of equipment and tools • Mark, identify, or barricade other obstructions		
	Handling Heavy Objects	• Observe proper lifting techniques		

ACTIVITY HAZARD ANALYSIS FOR CONTRACTOR OVERSIGHT				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		• Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads		
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use • Close doors, windows on heavy equipment to prevent injuries from tree branches and other vegetation	Leather or cut resistant (e.g. Kevlar) gloves	
	Insect/ Animal Bites	• Review injury potential with workers • Avoid insect nests areas, habitats outside work areas • Emphasize The Buddy System where such injury potential exists • Use insect repellant to protect against sting injuries • Do not provoke / tease animals		
	Contact Dermatitis	• Wear long sleeve shirts / trousers to avoid skin contact with plants or other skin irritants • Identify and review poisonous plants with workers • Avoid unnecessary clearing of plant/vegetation areas • Apply protective cream/lotion to exposed skin to prevent poison ivy or similar reactions	Long sleeved shirts/jackets	
	High / Low Ambient Temperature	• Monitor for Heat stress in accordance with Shaw E&I Health and Safety Procedures # HS400 or HS 401 • Provide fluids to prevent worker dehydration • Implement a work/rest schedule to prevent over exertion		Local Weather Station Thermometer

ACTIVITY HAZARD ANALYSIS FOR REMEDIAL EXCAVATION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Excavation of Soil	Overhead Utilities	• Maintain at least 10 feet from overhead power lines, up to 50 kV • For voltages over 50 kV, add 0.4 inches per kV to obtain the safe distance between equipment and power lines • If voltage is unknown, remain at least 20 feet from overhead power lines. • Review Shaw's Stop Work Authorization and Con Edison's Rules We Live By and Time Out policies		
	Underground Utilities	• Identify all underground and overhead utilities around the excavation site before work commences • Personnel shall not handle or disturb utilities • Stop work and contact owner of the utility immediately if the utility is exposed by machinery.	Leather work gloves	Ground penetrating radar or pipe/ cable locator
	Struck By/ Against Heavy Equipment	• Wear reflective warning vests when exposed to vehicular traffic • Isolate equipment swing areas • Make eye contact with operators before approaching equipment • Understand and review hand signals	Warning vests, hard hat, safety glasses, steel toe work boots	
	Handling Heavy Objects	• Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads		
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use	Leather or cut resistant (e.g. Kevlar) gloves	
	Strains and Sprains	• Maintain a safe stance and body position operating pressurized equipment		

ACTIVITY HAZARD ANALYSIS FOR REMEDIAL EXCAVATION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		• Avoid rushing		
	Awkward Motion and Position	• Take breaks to reduce repetitive strain. • Avoid awkward positions and intense stretching. • Alternate hands periodically. • Do not overexert yourself in any way. • To not provide a forced-grip for prolonged periods of time. • Stretch hands and arms every 30 to 60 minutes		
	Excavation Wall Collapse	• **No one shall enter an excavation**. • Construct diversion ditches or dikes to prevent surface water from entering excavation • Provide good drainage of area adjacent to excavation • Collect ground water/rain water from excavation and dispose of properly • Store excavated material at least 2 feet from the edge of the excavation; prevent excessive loading of the excavation face • Monitor atmosphere for flammable/toxic vapors, and oxygen deficiency • Slope, bench, shore, or sheet excavations over 5 feet deep if worker entry is required • Assign a competent person to inspect, decide soil classification, proper sloping, the correct shoring, or sheeting	Hard hat, safety glasses, steel toe work boots, reflective traffic safety vests	
	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period) • Assess noise level with sound level meter if possibility exists that level may exceed 85dBA TWA	Ear plugs	Quest Noise pro DLX with calibrator
	Slips, Trips, Falls	• Clear walkways, work areas of equipment, vegetation, excavated material, tools, and debris, snow and ice • Mark, identify, or barricade other obstructions		
	Inhalation and Contact with Construction	• Provide workers proper skin, eye and respiratory protection based on the any chemical exposure hazards	See HASP	See HASP

ACTIVITY HAZARD ANALYSIS FOR REMEDIAL EXCAVATION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
	Chemicals	present • Review hazardous properties of site contaminants with workers before operations begin • Monitor breathing zone air to determine levels of contaminants • Provide vapor suppression products to control odors emanating from the excavation • Dampen soil using light water spray to prevent fugitive dust emissions • Conduct air monitoring / sampling to determine exposure levels		
	Ambient Temperature	• Monitor for Heat stress in accordance with Shaw E&I Health and Safety Procedures • Provide fluids to prevent worker dehydration • Follow work/rest schedule in the HASP		Local Weather Station, thermometer
EQUIPMENT REQUIRED		**INSPECTION REQUIREMENTS**	**TRAINING REQUIREMENTS**	
• Rubber tire backhoe with bucket and hoe-ram attachment • Safety fence / barricade		• Daily equipment inspections as per manufacturers requirements • Excavation inspection/permit for worker entry • Confined space permit (potential) • Inspection of all emergency equipment (i.e.: first aid kits, fire extinguishers, eye wash station) •	• Review AHA with all task personnel • Review task SOP • Review Site Specific Health and Safety Plan and appropriate Addenda • Review operations/safety manuals for all equipment utilized • Excavation Competent Person	

ACTIVITY HAZARD ANALYSIS FOR TANK REMOVAL AND CLEANING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Air Monitoring Devices**
Excavation of Tank	Underground/ Overhead Utilities	• Identify all utilities around the site before work commences • Cease work immediately if unknown utility markers are uncovered • Use manual excavation within 3 feet of known utilities • Utility clearance shall conform with 29 CFR 1926.955 (high voltage >700 kv) 15 feet phase to ground clearance; 31 feet phase to phase clearance • Review Shaw's Stop Work Authorization and Con Edison's Rules We Live By and Time Out policies	Geophysical investigation equipment Marine Chemist (hot work) Inerting materials	Oxygen/LEL meter
	Excavation Wall Collapse	• Construct diversion ditches or dikes to prevent surface water from entering excavation • Provide good drainage of area adjacent to excavation • Collect ground water/rain water from excavation and dispose of properly • Store excavated material at least 2 feet from the edge of the excavation; prevent excessive loading of the excavation face • Monitor atmosphere for flammable/toxic vapors, and oxygen deficiency • Slope, bench, shore, or sheet excavations over 5 feet deep if worker entry is required • Assign a competent person to inspect, decide soil classification, proper sloping, the correct shoring, or sheeting • Inspect excavations (when personnel entry is required) daily, whenever conditions change • Provide at least two means of exit for personnel	Hard hat, Safety glasses, Steel toe work boots, reflective traffic safety vests	

ACTIVITY HAZARD ANALYSIS FOR TANK REMOVAL AND CLEANING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Air Monitoring Devices**
		working in excavations.		
Excavation of Tank (Continued)	Struck By/ Against Heavy Equipment	• Wear reflective warning vests when exposed to vehicular traffic • Isolate equipment swing areas • Make eye contact with operators before approaching equipment • Understand and review hand signals	Warning vest, Hard hat, Safety glasses, Steel toe work boots	
	Handling Heavy Objects	• Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads		
	Slips, Trips, Falls	• Clear walkways, work areas of equipment, vegetation, excavated material, tools, and debris • Mark, identify, or barricade other obstructions • Evaluate fall hazards above 4 ft.; use fall protection equipment (harness/lanyard), standard guardrails or other fall protection systems when working on elevated platforms above 6 ft. • Use heavy duty industrial (type IA) ladders • Tie-off all straight/extension ladders or manually hold by co-worker at base • Anchorage points for fall arrest systems must support at least 5,400 pounds for each worker		
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use	Wizard or similar cut resistant gloves	
Excavation of Tank (Continued)	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over	Ear plugs	Quest Noise pro DLX with

ACTIVITY HAZARD ANALYSIS FOR TANK REMOVAL AND CLEANING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Air Monitoring Devices**
		an 8-hour work period) • Assess noise level with sound level meter if possibility exists that level may exceed 85dBA TWA		calibrator
	Inhalation and Contact with Hazardous Substances	• Provide workers proper skin, eye and respiratory protection based on the exposure hazards present • Review hazardous properties of site contaminants with workers before operations begin • Monitor breathing zone air to determine levels of contaminants	Tyvek coveralls, nitrile gloves, latex or neoprene boots	LEL/O_2/H_2S, CO, PID
	High/Low Ambient Temperature	• Monitor for Heat/Cold stress in accordance with Shaw Health and Safety Procedures # HS400, HS401 • Provide fluids to prevent worker dehydration • Implement a work/rest schedule to prevent overexertion		Local Weather Station, thermometer
Tank Cleaning	Fire/ Explosion	• Eliminate sources of ignition from the work area; no hot work. • Provide ABC (or equivalent) fire extinguishers in all work, flammable storage areas and with fuel powered generators and compressors • Store flammable liquids in well ventilated areas • Prohibit storage, transfer of flammable liquids in plastic containers • Post "NO SMOKING" signs. There is to be no smoking anywhere on site, even within Construction Trailers. • Store combustible materials away from flammables • Store all compressed gas cylinders upright, caps in place when not in use, and cylinders off the ground. • Separate Flammables/Combustibles and	Portable fire extinguisher	LEL/O_2

ACTIVITY HAZARD ANALYSIS FOR TANK REMOVAL AND CLEANING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Air Monitoring Devices**
		Oxidizers by 20 feet minimum		
Tank Cleaning (Continued)	Flammable, Toxic, Oxygen deficient Atmospheres	• Test vessel atmosphere for flammable/toxic vapors, and oxygen deficiency • De-energize, lock-out and tag all energized equipment • Review emergency procedures before work commences • Provide safety observer outside vessel • Wear proper level of PPE for the type of atmospheric contaminants • Confined space activities are prohibited in fuel USTs, but may be allowed to clean out a Frac/Baker tank.	Portable fire extinguisher	LEL/O_2/H_2S, CO, PID
	Burns	• Wear proper work gloves, face shield/safety goggles, and leather apron to protect workers from skin burns when welding, cutting, and burning	Face shield, Safety goggles,	
	Inhalation and Contact with Hazardous Substances	• Provide workers proper skin, eye and respiratory protection based on the exposure hazards present • Review hazardous properties of site contaminants with workers before operations begin • Monitor breathing zone air to determine levels of contaminants		LEL/O_2/H_2S, CO, PID
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use	Leather or cut resistant (e.g. Kevlar) gloves	
Backfilling	Struck By/ Against Heavy Equipment	• Wear reflective warning vests when exposed to vehicular traffic • Isolate equipment swing areas	Reflective traffic vest, Hard hat, Safety Glasses, Steel toe	

ACTIVITY HAZARD ANALYSIS FOR TANK REMOVAL AND CLEANING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Air Monitoring Devices**
		• Make eye contact with operators before approaching equipment • Understand and review posted hand signals	work boots	
	Slips, Trips, Falls	• Clear, walkways of equipment, vegetation, excavated material, tools and debris • Mark, identify, or barricade other obstructions		
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use	Leather or cut resistant (e.g. Kevlar) gloves	
	High/Low Ambient Temperature	• Monitor for Heat/Cold stress in accordance with Shaw Health and Safety Procedures # HS400, HS401 • Provide fluids to prevent worker dehydration • Implement work/rest schedule to prevent overexertion.		Local Weather Station thermometer

ACTIVITY HAZARD ANALYSIS FOR CONTAMINATED WATER PUMP AND TRANSFER				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Set-up and operation of pumps.	Heavy lifting/strains, sprains.	No individual employee is permitted to lift any object that weighs over 60 pounds. Proper lifting techniques shall be used. Multiple employees or the use of mechanical lifting devices are required for lifting objects over the 60-pound limit.		
	Use of mechanical equipment.	Only qualified personnel shall be permitted to operate equipment. Mechanical equipment shall be inspected daily. Deficiencies in equipment shall be noted on the inspection form. Equipment found to be unsafe shall not be used. All equipment shall be operated at safe speeds and in a safe manner. Equipment operators shall wear safety belts and hearing protection. Ground personnel shall not position themselves between equipment and stationary objects. Personnel are only permitted to approach equipment after a signal from the operator. Personnel shall ensure all mechanical guards are in place and functioning properly. All equipment shall be shut down with energies dissipated prior to performing maintenance activities - lock out/tag out procedures may apply. Only qualified mechanics shall work on or repair heavy equipment Site personnel shall install grounding rod(s) and checked for continuity. If the grounding rod has a resistance great that 25 ohms, a second grounding rod shall be installed a minimum of six feet away and bonded to the first rod. Pumps and hoses used to carry fluids shall be grounded to		LEL/O_2, PID

ACTIVITY HAZARD ANALYSIS FOR CONTAMINATED WATER PUMP AND TRANSFER				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		the grounding rod.		
	Contaminated water	Personnel shall avoid contact with the contaminated water. Set up personnel washing facilities. Personal protective equipment (PPE) shall be worn as required in HASP Addendum. Perform air monitoring as specified in the HASP and in the HASP Addendum. Personnel shall wash hands and face before eating, drinking, smoking (offsite only), or chewing.	Level D Modified	
	Use of portable generators.	Refer to the generator manufacturer's instructions for safe operation. Never use a generator in enclosed or partially-enclosed spaces due to the quick build-up of high levels of CO. If you experience serious symptoms, get medical attention immediately. Keep the generator dry and do not use in rain or wet conditions. To protect from moisture, operate it on a dry surface under an open, canopy-like structure. Dry your hands if wet before touching the generator. Use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads. Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin. Ground generator using hand-inserted ground-rod. Before refueling the generator, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite. A 20-B:C fire extinguisher shall be readily available in locations where a generator is being used. Use hearing protection when working near a generator.		

ACTIVITY HAZARD ANALYSIS FOR CONTAMINATED WATER PUMP AND TRANSFER				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		Use proper lifting procedures when moving portable generators		
	Use of pumps.	Personnel operating pumps shall be trained in the use and emergency shutdown of the equipment. Pumps shall be inspected daily before use. Personnel shall use extra care when handling hose, making sure that hoses do not whip and strike body parts. The discharge end of the hose shall be secured with hose whip prevention chains/cables to prevent whipping. PVC or nitrile gloves and a face shield with safety glasses (or safety goggles) shall be worn by all personnel in the vicinity of breaking hose connections. Understand the injury potential when using pumps and associated the specific pumping equipment. Review operator's manual for recommended operating procedures. Prepare Job Safety Analysis covering pumping operations. Utilize the appropriate PPE. Always wear safety glasses and face shield when disconnecting hoses. Wear safety-toed boots. Wear leather gloves for mechanical protection and nitrile or PVC gloves to protect hands from contact with contaminated water. Wear chemical protective clothing, as specified by the SSHO. Hearing protection is required when working near operating pumps, power tools, or other noisy equipment. Identify and control chemical hazards. Wear proper PPE to avoid contact with contaminated water and fluids and inhalation of aerosols.		

ACTIVITY HAZARD ANALYSIS FOR CONTAMINATED WATER PUMP AND TRANSFER				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		Be prepared for spills. Have appropriate spill response equipment readily available. Wear proper PPE to avoid contact with contaminated water and fluids Monitor for carbon monoxide if working near exhaust or if pump engine is positioned in area with limited ventilation. Identify and control fire hazards. Use proper grounding and bonding when necessary. Follow proper procedures for fueling pumps. Verify hot exhausts are not impinging on flammable or combustible materials. Maintain fire extinguishers as appropriate. Identify and control other physical hazards. Use proper lifting procedures for pumps and handle hoses properly to avoid strains from moving heavy hoses. Secure hoses to prevent whipping. "Dead-heading" pumps will create dangerous steam and super-heated water – wear splash protection and verify pressure is safely released prior to opening valves or disconnecting hoses. Identify and avoid hot surfaces. Wear appropriate PPE to prevent burns. Identify and avoid pinch points. Get additional help as necessary. Pumps shall be allowed to cool before re-fueling, unless otherwise allowed by the pump manufacturer.		

JOB SAFETY ANALYSIS FOR TRUCK LOADING AND EQUIPMENT OPERATIONS				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Truck, Equipment Loading and Unloading	Struck By/ Against Heavy Equipment	• Wear reflective warning vests when exposed to vehicular traffic • Obey posted speed limits • Isolate equipment swing areas • Make eye contact with operators before approaching equipment • Understand and review hand signals	Warning vests, Hard hat, Safety glasses, Steel toe work boots	
	Handling Heavy Objects	• Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads		
	Inhalation and Contact with Hazardous Substances	• Provide workers proper skin, eye and respiratory protection based on the exposure hazards present • Avoid unnecessary contact with contaminated materials • Review hazardous properties of site contaminants with workers before operations begin • Stay up-wind of soil pile • Monitor breathing zone air to determine levels of contaminants • Dampen soil using light water spray to prevent fugitive dust emissions • Stage stockpile on plastic sheeting • Cover stockpiled soil with plastic sheeting at the end of the shift to prevent fugitive dust emissions • Conduct air monitoring / sampling to determine exposure levels	nitrile gloves, neoprene boots	PID Mini-RAM,
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition	Leather or cut resistant (e.g. Kevlar) gloves	

JOB SAFETY ANALYSIS FOR TRUCK LOADING AND EQUIPMENT OPERATIONS				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
		• Keep guards in place during use		
Truck, Equipment Loading and Unloading (Continued)	Slips, Trips, Falls	• Clear walk ways, work areas of equipment, tools and debris • Mark, identify, or barricade other obstructions • Use 3 point contact when ascending/descending heavy equipment • Park heavy equipment on level ground to avoid potential sprains/strains when ascending/descending		
	Caught In/ Between Moving Parts	• Identify and understand parts of equipment which may cause crushing, pinching, rotating or similar motions • Assure guards are in place to protect from these parts of equipment during operation • Wear proper work gloves when the possibility of pinching, or other injury may be caused by moving/ handling large or heavy objects • Maintain all equipment in a safe condition • Keep all guards in place during use • Avoid moving hydraulic, dump or loading equipment		
	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period) • Assess noise level with sound level meter if possibility exists that level may exceed 85dBA TWA	Ear plugs	Sound Level Meter
	High/Low Ambient Temperature	• Monitor for Heat/Cold stress in accordance with Shaw Health and Safety Procedures # HS400, HS401 • Provide fluids to prevent worker dehydration • Follow work/rest schedule in the HASP		Local weather Station, thermometer

ATTACHMENT 4
Con Edison Remediation Utility Clearance Procedure and Forms

UTILITY CLEARANCE PROCESS FOR INTRUSIVE ACTIVITIES
E H&S REMEDIATION PROGRAM

1.0 INTRODUCTION

This document outlines a process to identify, locate and clear subsurface utilities as part of all Environmental Health and Safety (EH&S) Department's Remediation Section intrusive site investigations. The various activities that comprise this process are specified in efforts to eliminate or substantially reduce the risk of encountering a subsurface utility while performing intrusive activities. Where appropriate, reference is made to other existing *Con Edison and or industry* safety procedures that should also be considered. **Note that modifications and additions to the text in this version of the process, relative to the topics outlined in Section 2.0, are italicized.**

Due to the potential presence of subsurface utilities and the inherent variable of their size, depth and layout, it is not possible to address all situations and circumstances that may be encountered during intrusive activities. However, adherence to the steps outlined here will effectively minimize physical impacts to subsurface utilities and prevent associated health, safety *and environmental* risks that might otherwise result from field investigation activities. The activities prescribed below should not be blindly followed. Rather, it is the intent of this document that **ALL FIELD PERSONNEL**:

1) Understand the terms of this process including all revised or added provisions;

2) Develop an awareness and be mindful of, the potential and actual risks associated with utilities and other related hazards at a site;

3) Become familiar with the location(s) and configuration(s) of all subsurface utilities at the site, *which will include surrounding/adjacent facilities and or buildings*, as marked out and as delineated on available drawings;

4) Develop an awareness and understanding of the potential uncertainties associated with utility locations as marked out;

5) Maintain a high level of vigilance while implementing all components of intrusive fieldwork.

ALL FIELD PERSONNEL, including the Con Edison Project Manager (PM), Construction Management (CM), consultants and contractors should, *at a minimum,* be familiar with the fundamental provisions of this utility clearance process PRIOR to engaging in any field activities.

The process described in the remainder of this document consists of the three (3) primary components summarized below. These components are designed for use in an integrated manner.

Process Narrative – The narrative provides detailed descriptions of the specific steps that should be taken prior to and during intrusive activities to minimize the potential of encountering subsurface utilities.

Utility Clearance Flow Chart: The key steps of the utility clearance process, as outlined in the narrative, are shown graphically on the flow chart provided in **Attachment A**. The flow chart serves as a guide and should not replace the narrative for developing an understanding of and/or implementing the process.

Utility Clearance Checklist - A key component of this process is the completion of the checklist provided in **Attachment B**. The checklist shall, be completed by the Con Edison PM *or their designee, such as consultant or Con Edison Construction Management Inspector.* The intent of the checklist is to ensure that all appropriate steps of the process described herein have been completed. Secondly, it will be used to document that all reasonable steps were taken to prevent conditions that may be potentially harmful to the on-site workers and the surrounding community at large, and that might otherwise adversely impact the physical integrity of, or cause damage to, the utility. The completed checklist will be incorporated in the project files maintained by the Con Edison PM *or their designee*.

2.0 REVISIONS FROM PREVIOUS VERSION

This version (**Revision 2**) *contains modifications to Revision 1 and includes additional provisions and or guidance based on lessons learned during implementation of the previous versions* for intrusive activities at various sites. The key topics that have been added or modified are listed below and described in greater detailed in the referenced sections of this protocol.

- *Considerations for potential presence of fiber optics;*
- *Accessing manholes and other utilities during field inspection and utility mark out;.*
- *Considerations for potential presence of traffic control electric lines; and*
- *Considerations for potential presence of unmapped non-routine utilities or subsurface utilities, such as drainage pipes, etc.*

Modifications and additions to the text relative to the introductory sections of this document and the topics listed above are *italicized.*

3.0 APPLICABILITY

The utility clearance process shall be performed prior to and/or during the intrusive site investigation activities listed below.

- Excavation of Soil Borings

- Installation of Monitoring Wells
- Installation of Soil Gas Sampling Probe Points
- Excavation of Exploratory Test Pits/Trenches

4.0 SUBSURFACE UTILITY CLEARANCE PROCESS

The key activities that comprise the process are listed below and a detailed description of each is provided in the remainder of this document in the order in which they should be completed (as shown in the Utility Clearance Flow Chart in **Attachment A**).

- Obtain Plates, Drawings and Maps
- Notification to Con Edison Operating Groups and Submission of Site-Specific HASP for review and approval
- Code 753 Utility Mark-Out
- Site Walk
- Utility Clearance - Sample Location Confirmation
- Checklist Completion

It is noted that completion of some steps may not be warranted for all intrusive activities at all sites. The process is designed to be flexible and, thus, allows the Con Edison PM to incorporate those utility clearance activities that are appropriate for a set of site-specific conditions, knowledge of the site, previous work completed at a site, etc. Exceptions are summarized in Section 5.0 of this document. The key premise is that any deviations and the rationale for each are well documented and reflect sound judgment on the part of the Con Edison PM and other project personnel.

4.1 Obtain Plates, Drawings and Maps

Hard copies of available utility plates, drawings and/or maps should be obtained by the Con Edison PM *or their designee.* Drawings, plates, etc. should be reviewed as a preliminary step to determine the type and approximate size and location of utilities in the vicinity of the work site. . *When working at, adjacent to or in the immediate vicinity of a Con Edison facility ("Facility"), such as substation or gas regulator station, the Con Edison PM or their designee shall also obtain and review the Facility-specific plates. These shall include all utilities (both Con Edison and non-Con Edison) on and/or entering or leaving the Facility. Regardless of who obtains the requisite utility plates and or drawings, the Con Edison PM shall ensure that the job package is complete and includes ALL required such drawings and or plates of sub-surface facilities in the*

area(s) of intrusive activity, such as excavation or drilling. The drawing title, most recent revision date shown on the drawings, approximate scale and source shall be documented in the appropriate space(s) on the Utility Clearance Checklist (**Attachment B**).

The source of the drawings may vary depending on whether the site is a Con Edison owned/operated facility, private/public property, or extends into a public street/sidewalk. The various sources for substation utility drawings are discussed below and listed in **Table 1**. Drawings for private properties and facilities, such as apartments, schools, churches, residences, etc., can typically be reviewed at, and/or obtained from, the property/facility manager and Department of Public Works and/or Department of Buildings in the municipality where the property is located.

NOTE: Fiber optics at Con Edison facilities are not routinely identified on utility drawings. Therefore, when conducting intrusive work at Con Edison facilities, the facility engineer should be contacted in advance of the site walk to determine if fiber optic cables are known to be present and, if so, what is their layout. Fiber optic lines generally cannot be detected using routine geophysical methods accordingly, at sites with known fiber optics every effort should be made to determine their location or confirm their absence in the work area.

NOTE: Copies of all drawings obtained during this step should be available at the site during all site walks/inspections and at all times during subsequent intrusive activities. The drawings should be reviewed immediately prior to implementing intrusive activities at each new site location where intrusive activities are to be performed.

Steam, Gas and Electric

All electric and gas plates are available on Con Edison's intranet by searching for 'maps' or accessing the Advanced Mapping System website listed below.

http://maps/AdvancedMappingHomePage.htm

Similarly, steam plates can be obtained by selecting "Active" and "Archived" Steam Plates from the website:

http://maps/steam.htm

Based on agreement between Transmission Operations and EH&S, Remediation personnel may access these intranet sites and print the plates using the plotter located in the 2nd floor of Building 138. In addition, a large format photocopier, which is also located in Building 97, is available for use by EH&S remediation. A log book, which is stored at the facility, should be completed each time the facilities (i.e., computer, and or photocopier) are used.

Conduit and Duct Occupancy (C&DO) utility plates can also be obtained from the appropriate Con Edison engineering group(s) including, electric (e.g., distribution lines, transmission feeders, etc.) steam and gas by the Con Edison PM.

AFTER accessing the website and obtaining the required drawings, the appropriate party listed in **Table 1** may be contacted with inquiries regarding electric and steam plates or for questions regarding use of the Advanced Mapping System.

Sewer and Water

Drawings showing water and sewer utilities should be obtained from the New York City Department of Environmental Protection (NYCDEP) *or, if in Westchester, then the drawings and or plates should be obtained from the local authority, such as the County Health Department or municipal Departments of Public Works (DPW) and or Buildings (DOB).* Drawings can be requested from the NYCDEP by completing the form provided in **Attachment C** and faxing or mailing it using the appropriate contact information listed on the request form. If you have questions you should contact the NYCDEP personnel at the telephone number listed in **Table 1**.

Subterranean Tunnels

Drawings showing locations and depths of tunnels including subways and automobile tunnels and related subsurface infrastructure should be obtained as appropriate by contacting the Metropolitan Transportation Authority as listed in **Table 1**. It is noted that if intrusive activities will be performed in the immediate vicinity of subsurface MTA structures, such as subway or automobile tunnels, a letter submitted to the MTA may be required to request a work permit from MTA. The letter should include a brief summary of the work and a map(s)/drawing(s) of the proposed work and will be submitted to:

Mr. Rajen Ydeshi
Outside Projects
New York City Transit
2 Broadway, 7th Floor
New York, New York 10004

Fiber Optics

As noted above, fiber optic lines are typically not shown Con Edison's utility drawings. Accordingly, the facility engineer should be consulted regarding the presence,and if present, their location as discussed above.

Traffic Control Cables

Drawings and or plates for subsurface traffic control facilities should be requested from New York City Department of Transportation (NYCDOT) or the local/ municipal DPW or DOT.

Miscellaneous

Con Edison generally does not maintain plates and drawings showing detailed information of utility distribution on private property. However, as discussed above, facility managers, property owners, Department of Public Works and/or Department of Buildings of the municipality where the site is located, should be contacted in efforts to obtain available utility drawings for the facility. Contact information (e.g., telephone numbers, e-mail addresses, etc.) for municipalities

can typically be obtained by accessing the municipality's website. The name, address and telephone numbers for the Department of Buildings in New York City are listed in **Table 1**.

4.2 Complete Utility Markouts

Due to the diversity and nature of sites investigated by the EH&S Remediation Group and the potential utilities at these sites, an effective mark out *will require a Code 753 utility survey with supplemental M-scope survey by Con Edison and or a subsurface utility survey by a private utility-locating contractor*. The applicability of each of these surveys is discussed below.

4.2.1 Overview of Utility Markout Methods

Code 753

The Con Edison PM should instruct their consultant and/or contractor to request a Code 753 utility mark out as per the 16 New York City Rules and Regulations (NYCRR) Part 753. Consistent with the One-Call (also called Dig Safe New York) criteria, the request should be made at least 72 hours prior to initiating fieldwork. The telephone numbers of the various one-call systems are listed by region below.

New York City / Long Island:	(800) 272-4480
Westchester	(800) 962-7962

Confirmation that mark outs completed under Code 753, and as received by facsimile or telephone from the participating utility companies, should be documented on spaces provided on the Utility Clearance Checklist (**Attachment B**). The markouts should be maintained by the Con Edison PM or designated representative. If the physical markings on the street/sidewalk become faint or obscure they should be refreshed by over-painting with new paint as needed. When the utility markouts are being refreshed, typically by consultant, contractor, or other project personnel, a Con Edison representative or their designee **MUST** be present and observe this activity.

Con Edison M-Scope Survey

Con Edison engineering groups (see below for contacts) can conduct utility surveys using a 'M-Scope' on a case-by-case basis and will be limited to the engineering group' availability. This tool uses the magnetic susceptibility of subsurface features such as electrical conduits, electric cables, pipes, etc. This method of survey can be subject to interference by other conductive bodies at grade or in the subsurface, such as buried pieces of metal, rebar in concrete, iron-rich soil, etc., and may be ineffective or produce misleading results in these types of conditions. A utility survey using an M-Scope can be requested by contacting the appropriate party listed below. Note for markouts inside substations contact Mark Rimler at (212) 460-3921.

County	Contact Name	Telephone Number
Manhattan	Jane Shin	(212) 894-9345
Brooklyn & Queens	John Haas	(718) 348-6725
Bronx	Greg Kasbarian	(718) 904-4659
Westchester	Faney Bantin	(914) 789-6715
Staten Island	Joseph Nappi	(718) 890-6231

Private Utility Contractor

Prior to mobilizing to the site the following information MUST be provided to and reviewed by the Con Edison PM:

- the name of the contractor;
- the name of technician(s) who will perform the utility surveys;
- for each technician, a summary of experience and training in conducting surveys in a setting similar that at the site (e.g., urban, inside buildings, etc.); and
- Summary of experience and training of each instrument.

When using a private utility location contractor, the Con Edison PM shall diligently attempt to arrange for the facility or property manager and or engineer, who is most familiar with the utility layout and distribution in the building or on the property to participate in the site walk with the private utility locating contractor during on the first day of conducting the on-site utility survey.

Private utility contractors employ a variety of utility detection and location techniques, which may include:

- Ground Penetrating Radar (GPR)
- Magnetometer *(M-Scope) [for locating metallic **and** non-metallic pipes and cables]*
- Radio Frequency Induction (RFI) *[for locating non-metallic pipes and cables]*
- Electrical Conductivity
- Electrical Resistance
- Acoustics

Use of multiple methods may permit the detection and surveying of conductive and non-conductive buried utilities.

The utility location contractor **SHALL** specify which utility detection tool/techniques they plan to bring **AND** use at the site. In addition, they **SHALL** bring **ALL** support tools and equipment necessary to allow them access to manholes, vaults, circuit boxes, pipe clean-outs, etc.

At the commencement of a utility survey using a private utility location contractor **AND** prior to them deploying any survey equipment, the utility location contractor **SHALL**, *in cooperation with the Con Edison PM and or their designee:*

1) Review **ALL** utility drawings

2) Reconcile **ALL** drawings with markouts identified by the Code 753 survey at the property perimeter.

3) Determine presence, type and nature of sub-slab utilities and diligently attempt to confirm their configuration during the utility survey.

4) Inspect the site to identify/*reconcile* where **ALL** utility service(s) enters and or leaves the property and or building. This **SHALL** include a thorough inspection of building basement(s); boiler and or machine room(s); externally-exposed utility infrastructure including manholes; vaults; electrical, gas, water valves and or meters; etc.

5) *For work at or adjacent to Con Edison Facilities, conduct the site walk and review the facilities drawings with key Facility Management personnel.*

6) Visually identify, open and inspect **ALL** relevant utility access-ways including manholes, vaults, gas and or water valves boxes and telephone, *fiber optic* cable, *traffic control lines* and communication boxes.

NOTE: Only circular manholes shall be opened. If opened improperly, rectangular manhole covers can fall into the underlying vault and damage the contained utility (e.g., transformer). If it isa anticipated that manholes will need to be opened, Con Edison Transmission and Service Operations (T&SO) shall be contacted prior to conducting the site walk and or utility clearance survey using a private locator.

7) Identify and document **ALL** apparent uncertainties such as manholes containing service lines that apparently go to the building or property, but that cannot be located within the basement of the building or on site.

NOTE: In **ALL** cases, the private utility contractor shall diligently attempt to 'hook-onto' or 'tone' each conduit source (e.g., pertinent electrical conduits in basement, water and or gas valves in valve box, *sewer and or drain pipes*, distribution lines in manhole, *telecommunication lines*, etc.). This may require opening manholes circuit electrical distribution 'trunk' boxes, moving equipment or stored materials at the facility or property to allow access. No project personnel shall enter a manhole or vault unless they are certified and trained in confined space

access, have and know how to use **ALL** pertinent safety equipment, and approved by the Con Edison PM.

In some situations, multiple metallic conduits may be in direct contact in the subsurface. In this circumstance the signal of the locating tool may be transferred from the conduit being 'toned' to an adjacent conduit(s) and may produce a 'secondary' signal. In efforts to understand and identify this occurrence, the location of each apparent signal shall be visually/physically marked using pieces of tape, paint or similar method. The sources being 'toned' shall be numbered and the corresponding signals associated with each signal source shall be marked with the corresponding number at each location where the signals from each source is detected. Accordingly, the resulting mark outs will show apparent multiple conduits for a single source.

4.2.2 Applicability of Utility Clearance Resources

The use of the various utility markout resources that may be employed at various sites is summarized in the table below and discussed in the remainder of this section.

Site Setting	**Utility Survey by Con Edison**	**Utility Survey by Private Contractor**	**Code 753 (1)**
Con Edison Facility	X	X (optional)	X[1]
Street / Sidewalk	X (optional)	X (optional)	X
Private Property	X (optional)	X	X[1]

(1) At larger Con Edison Properties (e.g., Astoria) or large private or publicly owned properties, a Code 753 survey may not be warranted.

Con Edison Facility

Utility markouts at Con Edison facilities should be coordinated by the Con Edison PM with support from the Construction Management (CM) inspector assigned to the project (if any) and/or *key Facility Management personnel*, as appropriate. At a minimum, an M-Scope survey should be completed. In some circumstances, an independent utility locating contractor should also be used. The decision to use a utility contractor will be made by the Con Edison PM. The use of an independent utility mark-out contractor is strongly recommended at sites where a variety of utilities are known or suspected to be present and which may not be readily identified or mapped using M-Scope alone. A benefit of using a utility locator contractor is that, as described above, they can provide a greater array of tools to locate a variety of subsurface utilities that are non-conductive, such as concrete sewer lines, PVC pipes, etc. in addition to identifying/confirming the presence and location of conductive utilities.

Private Property (including Soil Gas Sampling Probes)

An independent utility locator should be used for utility markouts on private properties. It is noted that utility mark-outs in basements or slab-on-grade constructed buildings may be

inconclusive due to the presence of rebar or welders-mesh commonly used as reinforcement in concrete. Accordingly, a thorough inspection of the basement floor and walls should be performed to identify where utilities enter and leave the building, as well as how the utility (elctric, water gas, steam, etc.) are distributed in the vicinity of the sample locations. Sub- or in-floor utilities often enter along the perimeter of the floor, at support columns, and/or along dividing walls. The observation of utilities entering the floor may indicate utilities that lie within or immediately beneath the concrete basement slab. If the location of the utility layout of any such sub- or in-floor utility cannot be effectively determined, then any intrusive work must be discussed with the Con Edison PM and may require that no intrusive activities be performed at that location. *However, this action should only be considered after all applicable survey tools and methods have been diligently deployed and or implemented.*

Public Street / Sidewalk

A combination of Con Edison utility survey staff and independent utility locator contractors may be used for work areas located in and along roadways. Since Con Edison maintains utilities in streets and along sidewalks, in addition to the mark outs performed through the Code 753 survey, an M-scope survey may also be requested within a 10 foot radius of each proposed sample location. It is noted that due to often heavy work loads of the M-Scope survey staff, this option may not always be available or practicable and should be considered optional.

4.3 Site Walk

After completion of the activities outlined above, a site walk shall be conducted by the Con Edison PM with participation from Construction Management (if it will be providing field oversight), contractors (drillers, soil gas, excavators, private utility location contractor, etc.), Con Edison *Facility Managers,* NYSDEC (as deemed appropriate by the Con Edison PM), private facility managers/property owners *and or owners/operators/representatives of private utilities, such as NYCDOT, municipal DPWs, Westchester Department of Sewer, Westchester County Department of Health, etc.* A list of the names and phone numbers of each participant at the site walk will be maintained by the Con Edison PM. The key objectives of the site walk are to:

- Review the all planned locations where invasive activities will be performed,
- Adjust the positions of the locations away from utilities as marked out (as necessary)
- Collectively determine the appropriate utility clearance activities (e.g., test pits, etc.) that will be performed at each location (as described in Section 3.4) and document all decisions and /or concerns using the Utility Clearance Checklist (as described in Section 4.0) and in **Table 2**.

Other site conditions and project issues assessed during the site walk should include:

- Presence and location of overhead utilities and/or obstructions that might prevent the safe operation of drilling /excavating equipment;

- Presence of, or need for, appropriate grounding for electrical equipment at the site;
- Site access to equipment;
- Storage of equipment/supplies overnight (e.g., establish a staging area);
- Storage and management of investigative derived waste (IDW);
- Hours of on-site work;
- Permits needed, if any;
- Review roles and responsibilities of all project personnel who will be onsite;
- Review site and emergency contacts; and
- Review anticipated schedule of work *and contingency action as deemed appropriate.*

4.4 Utility Clearance - Sample Location Confirmation

The appropriate actions necessary to confirm the location and/or absence of utilities, which are agreed on during the site walk and as documented in the Utility Clearance Checklist and in **Table 2**, will be implemented at each sample location during the investigation. As discussed above, and as shown the Utility Clearance Process Flow Chart, the actions will generally include one or more of the following:

- Moving the location outside the **tolerance zone**, if possible. If no ***tolerance zone*** is marked out during the utility survey (i.e., only a utility center line is marked), the **tolerance zone** will be defined in the field as: **the distance of one-half of the known diameter of the utility plus two feet on either side of the centerline as marked out.**
- Performing a utility clearance test pit at each location where intrusive work will be performed; and/or
- Performing a utility clearance test pit using non-mechanical means to expose and physically verify the exact location and configuration of all nearby utilities.

Brief descriptions of the activities that will be completed during the various investigation activities are discussed below.

NOTE: When working within 25 feet of high pressure gas lines (i.e., 125 psig or greater), ***Gas Emergency Response Center (ERC)*** **shall be contacted** ***[718-319-2330] and notified of the planned activities at least two days prior to start of intrusive work. If working within 5 feet of a transmission main or within 10 feet of the tolerance zone of a main*** **the gas line will be**

carefully excavated by hand in accordance with the Gas Operations Standard G-11863, titled "Inspection and Maintenance Requirements Associated with the Excavation Activities Near Gas Pipelines Operating at 125 psig and Above".

Soil Borings / Monitoring Wells

All locations within the tolerance zone should be moved outside the zone, if possible. After moving the location, a utility clearance test pit should be excavated to a minimum of 5-feet below ground surface using non-mechanical methods, such as hand auger, post-hole digger and/or vacuum truck. The diameter of the test pit should be at least two inches wider than the outer diameter (OD) of the mechanized drilling equipment. The 5-foot depth is consistent with the concept that most utilities are typically installed within the top five feet of the subsurface.

NOTE: Utilities may be deeper than five feet due to buildup of surface grade on properties and or streets or right-of-ways. Although the original depth of utilities is anticipated to be within the upper five feet, utilities that are buried in areas that have been built up will presently be deeper by the thickness of the built-up material.

Intrusive investigation locations where physical space prohibits the relocation of proposed sample locations outside the tolerance zone, the adjacent utility(ies) will be exposed by excavating using non-mechanical methods to visually confirm its physical location and configuration. This confirmatory excavation will be completed in addition, a 5-foot excavation at the specific location being investigated (e.g., soil boring, monitoring well boring, etc.), as described above.

Soil Gas Sampling

At soil gas sample locations, test pits will also be excavated to one foot below grade or below the bottom of a concrete floor, if present, prior to installation of soil gas sample probes points. The one-foot depth specified is consistent with the concept that most utilities that could be impacted by the advancement and emplacement of the probe points, such as telephone lines, local electric (e.g., for outdoor lighting), cable television, in-ground sprinkler lines, etc., are typically installed from grade to a depth of one foot.

Basements / Indoor Soil Borings and Monitoring Wells

Prior to installing a soil boring, monitoring well or soil gas sample probe point in the concrete slab of a basement and after identifying that no utilities are present in the floor of the basement or foundation slab (as per Section 3.2.2), an electric powered diamond core drill, concrete saw or jack hammer will be used to advance through the concrete and expose the underlying soil. *If sub-slab utilities are suspected of being present, but not confirmed during the utility location survey, the concrete shall be cored or saw cut to an estimated depth of approximately 2/3 the thickness of the concrete (if known). If the thickness of the concrete thickness is not known, it shall be assumed to 8-inches thick. Coring shall proceed at 1-inch increments, with the removal of each one-inch 'plug' of concrete and visual inspection of the core hole to verify the absence of utilities. The remaining 1/3 of the concrete shall be broken using electric jackhammer,,*

hammer drill or using hand tools. Appropriate safety equipment shall be worn during concrete removal actions.

At each location where soil borings and/or monitoring wells will be installed, a hand excavated test pit will then be advanced to a depth of five feet below the bottom of concrete slab. This test pit should be excavated using hand auger, post-hole digger and/or vacuum truck in tandem with a non-conductive probe rod, which can be used to confirm the absence of utilities to a depth of five feet below the bottom of the concrete slab.

NOTE: The use of a jack-hammer to loosen compact soil during hand excavating a utility clearance test pit is strictly prohibited, except as noted above.

Exploratory Test Pit/Trench

Exploratory test pits/trenches will be performed to identify the presence or absence of subsurface structures related to former operating facilities at the site, such as gas holder foundations at former manufactured gas plant (MGP) sites, and should not be confused with **utility clearance test pits** discussed above. The **exploratory test pits** or **trenches** will typical have dimensions of approximately five feet wide by 10 feet deep by 10 to 20 long, accordingly, excavating them by hand is impracticable. The excavation of **exploratory test pits/trenches** must be approached with heightened awareness as the potential for damaging subsurface utilities, if present, is great.

In efforts to develop a reasonable degree of confidence that utilities will not be encountered during excavation of **exploratory test pits/trenche***s*, a focused utility survey will be conducted in the area immediately surrounding the test pit or the area defined by a boundary established by measuring two feet perpendicular from all sides of the proposed exploratory test pit boundaries. For example, if the surface dimensions of the exploratory test pit are 10 feet long by 5 feet wide, the surrounding area of the focused utility survey will have dimensions 14 feet long by nine (9) feet wide. It is suggested that the focused utility survey should be completed after all other on-site surveys have been completed. This will allow the surveyor(s) to develop a better understanding of the site-wide subsurface utility configuration.

Following completion of the focused utility survey, **utility clearance test pit***s* will be excavated by hand to confirm the presence of any and all utilities identified within five feet from the exploratory test pit/trench. After exposing the utilities, the excavator can proceed to excavate the **exploratory test pit/trench**, however, the operator should be experienced with digging in areas where underground utilities may be present and should use the utmost care when performing the excavation. Excavation should proceed slowly enough so that any obstruction/structure encountered can be evaluated and to confirm that the structure is not a utility.

5.0 CHECKLIST COMPLETION

The Utility Clearance Checklist (**Attachment B**), as well as the overall Utility Clearance Process to locate and clear utilities was designed to be dynamic. Accordingly the Utility Clearance Checklist should be updated throughout the process as each utility clearance activity is

completed. During the site walk and after all utility-related issues at each location have been identified and addressed to the satisfaction of all project personnel, the relevant portions of the Utility Clearance Checklist will be completed by the Con Edison PM. It is noted that the Utility Clearance Checklist will be considered complete only after all proposed utility clearance actions identified during the site walk have been successfully implemented and all pertinent information and activities have been documented.

6.0 EXCEPTIONS TO REQUIREMENTS OF THE UTILITY CLEARANCE PROCESS

Due to the inherent diversity and conditions present at project sites, some general exceptions to the utility clearance process are identified below.

- Sites where extensive utility mapping has been completed and/or where extensive intrusive activities have already been performed.

- Locations where facility layout is well documented and understood.

- Sites or portions of large sites (e.g., Astoria facility) where utilities are known not to exist currently or to not have ever existed throughout the life of the facility, property or site.

All circumstances where one or more steps of this process are not being implemented must be discussed with the Con Edison PM and must be duly documented. Regardless of whether or not exceptions are made during the utility clearance process, a Utility Clearance Checklist should always be completed for each site, in accordance with the terms outlined in Section 4.0 of this document.

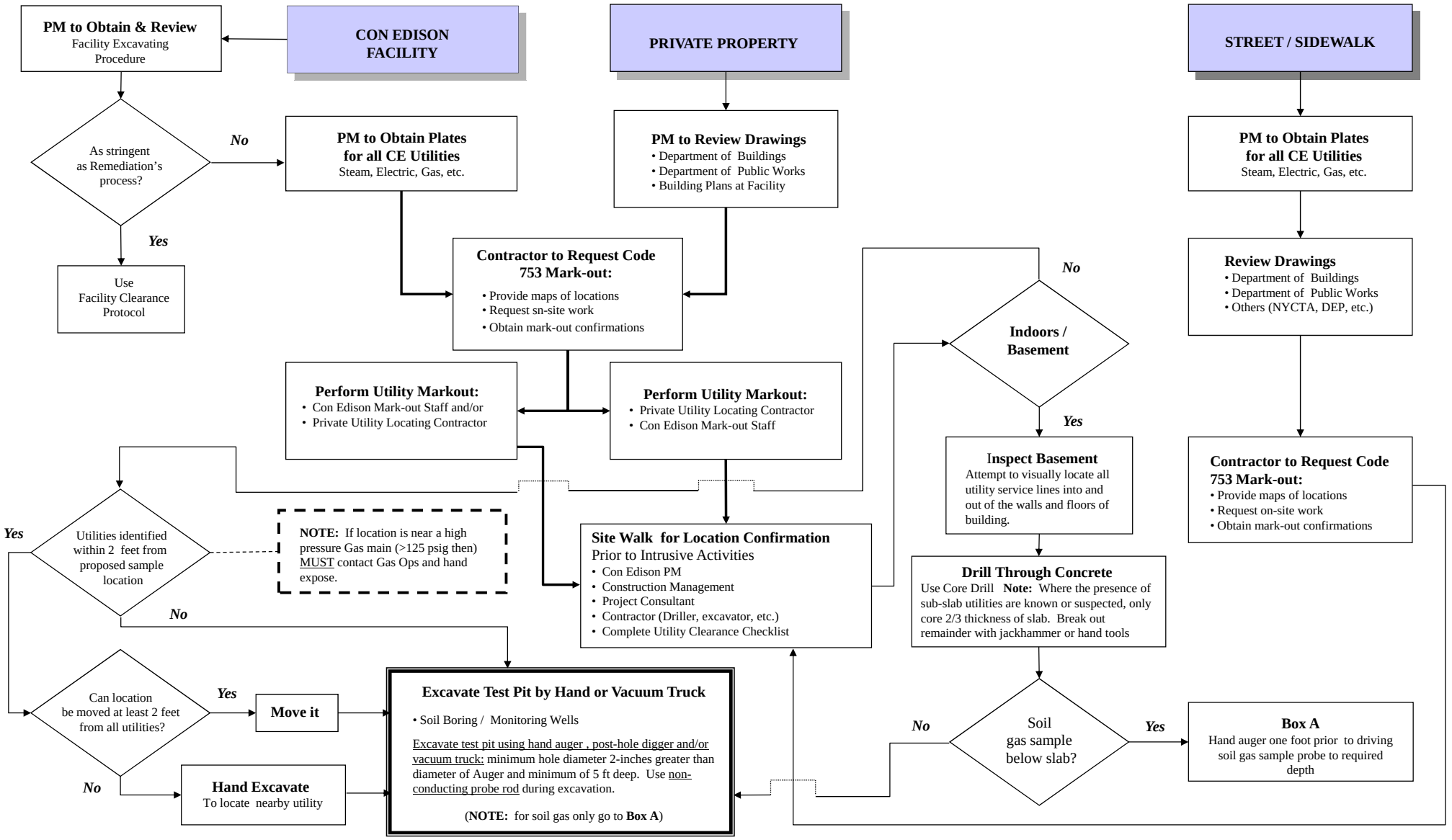
ATTACHMENT A

Utility Clearance Process Flow Chart

Utility Clearance Process During Intrusive Activities
E H & S – Remediation Group

10/08/03

Rev. 1



ATTACHMENT B

Utility Clearance Process Checklist

CHECKLIST FOR INTRUSIVE FIELDWORK

PROJECT BACKGROUND INFORMATION

Site Name: _____ **Job No.** _____

Site Address: _____

Con Edison Project Manager: _____ **Phone:** _____

Con Edison Site Manager: _____

Consultant Project Manager: _____ **Phone:** _____

Consultant Site Manager _____ **Phone:** _____

Subcontractor (driller, excavation, etc): _____

Subcontractor's Contact Person: _____ **Phone** _____

Meeting / Start Date _____ **Time** _____

HEALTH AND SAFETY PLAN REVIEW

Name: _____ **Organization:** _____ **Date:** _____

Name: _____ **Organization:** _____ **Date:** _____

Name: _____ **Organization:** _____ **Date:** _____

Health and Safety Form Completed: _____ **Date** _____

Site Drawings (yes/no/NA): _____ **(Attach site figure with proposed boring locations)**

CODE 753 UTILITY MARK-OUT REQUESTED? Y / N

Called by: _____ **Organization:** _____

Date: _____ **Time** _____ **Initials** _____

Reference # _____

Utility Drawings Received: _____ (Attach copy of utility maps)

UTILITY INVENTORY

Above Ground Services:

Utility	Utility Company Name	Depth (ft)	Phone	Date Notified	Notification Method	Marked
Electric		NA				Y / N
Telephone		NA				Y / N
Cable		NA				Y / N
Overhead Supports		NA				Y / N
Traffic light cables		NA				Y / N

Drawings/Plates Obtained (List) _____

Notes: _____

CHECKLIST FOR INTRUSIVE FIELDWORK

UTILITY INVENTORY (continued)

Below Ground Services:

Drawings/Plates Obtained (List) _____

Utility	Utility Company Name	Depth (ft)	Phone	Date Notified	Notification Method	Marked
Electric						Y / N
Telephone						Y / N
Cable						Y / N
Gas						Y / N
Water						Y / N
UST System						Y / N
Storm						Y / N
Sanitary						Y / N
Steam						Y / N
Pipeline Companies						Y / N
Other (Tunnels, etc.)						Y / N

PRIVATE UTILITY LOCATING SERVICE RETAINED? Y / N

Date _____ **Time** _____ **Initials** _____

Name of Locating Service: _____

Telephone #/ contact: _____

Name of Operator(s)/Type of sensing equipment used _____

METAL DETECTOR SURVEY

Drilling location cleared by _____ **(Consultant/Contractor) with a metal detecto**

Consultant / Contractor Name _____ **By (initials):** _____ **Date:** _____

INTRUSIVE SAMPLING LOCATIONS MARKED, M-SCOPED AND CLEARED

Locations Marked by: _____ Date(s): _____

_____ Date(s): _____

M-Scope performed by: _____ Date: _____

Conduct Site Walk and Complete Site Walk Table

ACKNOWLEDGEMENT

The parties listed on the attached Site Walk Sign-In Sheet have participated in a site walk at _____ to review proposed intrusive sampling locations and to evaluate the presence, configuration and identification of utilities at this site, as marked out. The parties have agreed with the proposed activities that will be completed prior to conducting intrusive work. The utility clearance activities will be completed as summarized in Table A (attached).

ADDITIONAL COMMENTS / NOTES: _____

CHECKLIST FOR INTRUSIVE FIELDWORK

Site Walk Sign-In Sheet

Project Name: _____

Date of Site Walk: _____

Name:	Organization:	Phone No.

ATTACHMENT C

Instructions for Obtaining Drawings for Sewer and Water Utilities

From the NYC DEP

Table 1 - Summary Table of Resources for Obtaining Subsurface Utility Plates and Drawings

Utility Type	County	Company	Organization	Name	Telephone Number
Electric	All	Con Edison	Electric Engineering	http://maps/AdvancedMappingSystem.htm(1)	
			For Questions contact:	John Ensemplare (Mgr. – B&Q)	(718) 802-5540
				Mike Mitchell (Mgr. – Manhattan)	(212) 460-1119
				Richard Mariani (Mgr. – Westchester)	(914) 925-6026
Gas	All	Con Edison	Gas Engineering	http://maps/steam.htm(1)	--
			For Questions contact:	Mike Verlizzo (Mgr.)	(718) 319-2357
Steam	All	Con Edison	Steam Engineering	http://maps/steam.htm(1)	--
			For Questions contact:	Tony Barbera	(212) 460-4843
Sewer /Water	NYC	NYC DEP /	Bureau of Water and Sewer Operations	Vincent Soriano/ Doug Greely	(718) 595-5330
Tunnels	Subway Crossing the East River	MTA	Outside Projects – Adjacent Work	Vasanth Battu/ Rajen Ydeshi / [If drilling in immediate vicinity of MTA structure, e.g., subway tunnel, car tunnel, etc., you will need submit a letter and plan drawing(s) to Mr. Ydeshi]	(646) 252-4473 (646) 252-3641
	Crossing the Hudson River	Port Authority of NY/NJ	Surveying	Richard Danko (rdanko@panynj.gov) Bill Kane (wkane@panynj.gov)	(201) 595-4841 (201) 595-4842

(1) "Maps" website listed is accessible on the Con Edison Intranet.

ATTACHMENT 5

CON EDISON'S "RULES WE LIVE BY"

CORPORATE ENVIRONMENTAL, HEALTH AND SAFETY PROCEDURE

CEHSP A32.00 – Rules We Live By
Effective Date: 01/04/2010

CONTENTS

1.0 PURPOSE

This procedure establishes a consistent approach to communicating and reinforcing the importance of following critical safety work practices designed to protect employees, contractors, and the public.

2.0 APPLICABILITY

This Corporate Environmental, Health and Safety Procedure (CEHSP) apply to all Con Edison employees (management and union) and contractor employees working for Con Edison.

3.0 INTRODUCTION

There are safety and operational procedures specifically designed to protect against the potential for significant injury due to the energy (electricity, gas, steam, or falling from elevation) that must be controlled. Operating groups that work with these sources of energy have identified Rules We Live By. This is defined as a work procedure or safety requirement that, if not followed, could result in a severe injury or fatality, or place other individuals (employees or members of the public) at significant risk.

4.0 COMPLIANCE REQUIREMENTS

4.1 RULES WE LIVE BY IDENTIFICATION, TRAINING, AND REPORTING

4.1.1 IDENTIFICATION

Where work tasks require the safe control of electricity, gas, steam, or work at elevation, the operating organization must identify key procedures required to control the energy or mitigate the effect or impact onto the employee, fellow employees, contractor employees or the public. Lessons learned from previous incidents must be included in the identification process. To see the Central List of the Rules, click here.

.

An organization must notify Corporate EH&S of any change to a Rule.

4.1.2 TRAINING AND COMMUNICATION

An organization's Rules We Live By and associated procedures must be reinforced in applicable skills training.

Each employee in the organization must receive OJT training on the Rules We Live By identified by the organization.

Rules We Live By must be reinforced, when applicable, in job briefings.

Rules We Live By must be incorporated into the scope of safety field observations and inspections.

Where contractor work practices involve Rules We Live By, contractor employees will be trained on the applicable Rules We Live By, reporting procedure, and consequences.

The operating organization must communicate the applicable Rules to contractor management and ensure the Rules are incorporated in the HASP. The contractor supervision will be required to train their affected employees and subcontractor employees before they begin work.

4.1.3 REPORTING AND INVESTIGATION

If a supervisor observes a Rule We Live By being violated, the work must be stopped immediately.

If an employee, not a supervisor, believes a Rule We Live By may have been violated, he/she must stop the work immediately and report the situation to the supervisor of the employee who committed the alleged violation.

Resolution of the alleged violation must follow the Time Out process as defined in CEHSP 28 – Calling a Time Out.

4.2 VIOLATION OF A RULE WE LIVE BY

A violation of a Rule We Live By will result in significant consequences.

Any employee who witnesses a violation of a Rule We Live By and does not stop the work and report the violation will also be considered to have violated the Rule.

A violation by a contractor company or by a sub-contractor must be reported via an action line by the operating organization with contractor oversight.

The organization must notify Corporate EH&S after action has been taken as a result of the violation.

4.3 DEFINITIONS

Con Edison employee: This includes all management and union employees.
Contractor employee: This includes all per-diem contractor employees and those employees working for a contractor company hired by Con Edison.

RULES WE LIVE BY 2012

Hazard	Electric Operations	Central Operations	Gas Operations	Customer Operations	Business Shared Services (CFS)	Enterprise Shared Services (Facilities)
Verify Dead/Lockout-Tag Out	Properly test or spear to ensure that electric equipment, cable, or wire is "dead" as required regardless of voltage, before beginning dead work activities.	Properly test or verify that equipment is de-energized, isolated and protected prior to initiating dead work activities.				Properly lock out/tag out equipment before beginning work on the equipment
Permits (Operating, D-faults)	Enter D-Fault tagged structures only when authorized by the operating authority to perform feeder processing.	• Operating Orders and Work Permits - Only perform work that is within the authorized scope of work as listed on the work permit. • Do not change the status of a piece of equipment that has a Stop Tag applied to it. • Follow the sequence of an operating order.		Do not enter a structure that has been classified and tagged as a D-fault	• Operating Orders and Work Permits - Only perform work that is within the authorized scope of work as listed on the work permit. • Do not change the status of a piece of equipment that has a Stop Tag applied to it.	
Atmospheric Testing	• Perform atmospheric testing and ventilate as required before entering and while working in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied	• Perform atmospheric testing and ventilate as required before entering and while working in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied.	• Perform atmospheric testing and ventilate as required before entering and while working in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied	• Perform atmospheric testing and ventilate as required before entering and while working in an enclosed space or a permit-required confined space.	• Perform atmospheric testing and ventilate as required before entering and while working in an enclosed space or a permit-required confined space.	
Rescue/Retrieval	Entrant and attendant are required to wear rescue harness when working in enclosed spaces	Entrant and attendant are required to wear rescue harness when working in enclosed spaces	Entrant and attendant working in enclosed spaces shall wear rescue harnesses, when required	Entrant and attendant are required to wear rescue harness when working in enclosed spaces	Entrant and attendant are required to wear rescue harness when working in enclosed spaces	
High Hazard Energy PPE	• Use fall protection equipment as required. • Use the appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for the electrical hazard.	• Use fall protection equipment as required • Use the appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for the electrical hazard	• Use fall protection equipment as required • Wear fire retardant (FR) coveralls when working on blowing gas. • Wear FR hood and FR glove liners whenever airline respirators are required.	• Use fall protection equipment as required • Use appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for electrical work. • Do not come into contact or move a downed or low hanging utility wire while performing Site Safety or Damage Assessment work.	• Use fall protection equipment as required. • Use the appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for the electrical hazard	• Use fall protection equipment as required
Sheeting/Shoring		Ensure that excavations five feet or deeper are properly sheeted and shored before anyone enters.	Ensure that excavations five feet or deeper are properly sheeted and shored before anyone enters.			
Gas Piping Integrity Test			Perform an integrity test before a customer turn on.	Perform an integrity test before a customer turn on.		
Securing Loads					Reels over 5,000 Lbs are secured per DOT requirements	

Please note: At The Learning Center, the RWLB associated with a given activity of an operating department apply.

January 26, 2012