REMEDIAL ACTION WORK PLAN
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

Prepared for
Consolidated Edison Company of New York, Inc
Long Island City, New York

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1.0 INTRODUCTION/EXECUTIVE SUMMARY

Jacques Whitford Company, Inc. (Jacques Whitford) has prepared this Remedial Action Work Plan (RAWP) for the former Consolidated Edison Company of New York, Inc. ("Con Edison") Former Maspeth Substation (the "Site") located at 57-77 Rust Street in the Maspeth section of Queens County, New York. Preparation of this RAWP has been conducted in response to and in accordance with the requirements set forth in the Voluntary Cleanup Agreement (VCA) that Con Edison entered into with the New York State Department of Environmental Conservation (NYSDEC) in March 2002. This RAWP has been prepared in general accordance with the guidance established in the Voluntary Cleanup Program Guide (VCPG), NYSDEC Draft, May 2002.

Subsurface soils and groundwater samples were collected during several phases of investigation work and analyzed for pertinent parameters (such as polychlorinated biphenyl (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals). The remedial investigation results indicated that limited exceedances of regulatory standards exist in Site soils and groundwater. These results are presented later in this Section (Section 1.3). The results further indicated that the main contamination issue at this Site is free-phase product (at depth) containing PCBs at various concentrations. Free-phase product has been measured in observation wells, located primarily within the Site's boundaries, ranging from a sheen to approximately two feet. The seasonal fluctuation of the water table further suggests the product has likely created a smear zone at depths of about 12 to 18 feet below land surface (bls).

Based on the investigation results, Jacques Whitford determined that the remaining source of contamination at the Site is the residual PCB-containing free-phase product located at depth on the water table (approximately 15 to 17 feet bls) underlying the parking lot area. It was also determined that there appeared to be limited release and transport mechanisms from this source to off-site properties where people may be exposed. The primary source of potential exposure to Site contamination would likely be during intrusive activities, where workers may be exposed to free-phase product, contaminated groundwater and/or contaminated soils.

At Con Edison's request, Jacques Whitford evaluated a number of options for the remediation of the PCB-contaminated soils and free-phase product. This evaluation is discussed in Section 2.0. Based on the data generated and discussion with the NYSDEC, Con Edison chose to implement an excavation/disposal approach to the remediation of the Site. This is discussed further in Section 3. Although some free-phase product has been periodically detected in monitoring wells beneath the 58th Street sidewalk (off-site), active remediation during the execution of the selected remedy will be limited to on-site soils and free-phase product. If post-remediation sampling (soil, groundwater, free-phase product) conducted as part of this RAWP indicates the presence of off-site impacts, Con Edison will investigate and, address as necessary, such issues at that time.

The purpose of this RAWP is to present the remedial approach that will achieve the following Remedial Action Objectives:

- to remediate the Site to a contaminant level that is protective of public health and the environment;
- to remove documented free-phase product to the extent practical, during the construction period;
- to remove PCB contaminated soils to the required limit (1.0-ppm PCBs in surface soils, 10-ppm PCBs in subsurface soils) within the sheetpiled area;
- to effect the remediation of the Site groundwater to acceptable levels through the remediation of contaminant source soils and free-phase product; and
- to control the potential migration of free-phase product.

Site surface soils (from 0 to 24 inches below ground) will be excavated to below the PCB regulatory standard of 1.0 ppm. Site subsurface soils (> 24 inches deep) will be excavated to below the PCB regulatory standard of 10.0 ppm. Post-excavation samples of the bottom and sidewalls will be collected to document the completeness of the remedial actions.

This RAWP has been prepared in accordance with the Voluntary Cleanup Agreement that Con Edison entered into with the NYSDEC in March 2002. This RAWP presents a Site summary, which describes the Site and synopsizes the results of previous investigations. In addition, this document contains an analysis and discussion of remedial options for the Site and outlines the selected remedy. This RAWP has been prepared in general accordance with Section 7 of the VCPG.

1.1 Site Description

Figure 1 shows the general location of the Site. The structures located on the Site include a brick building and a fenced and gated outdoor parking lot area. The brick building formerly housed electric equipment and the battery and control rooms of the former electric substation. M&A Linens, the present Owner of the Site, now uses the building as a fabric storage warehouse. The parking lot area is comprised of concrete pads and bluestone-covered areas. When the Site was operated as an electric distribution substation, the parking lot area served as an outdoor transformer and buss work yard. The former substation's step-down transformers were located on the concrete pads identified as Vaults 1 through 6 on Figure 2 (1990 Site Plan).

Spare electric equipment were likely kept in the area designated "Concrete Storage Area" on Figure 2. Over the course of the former substation facility's life, there were apparently leaks and spills of dielectric oil, including PCB or PCB-contaminated fluids, from the equipment.

South of the property lies 58th Avenue, to the east, 58th Street, to the west, Rust Street, and to the north, attached rowhouses, which are separated from the property by a chain link fence. Across 58th Street, there is a multifamily residential development. South of 58th Avenue, there are miscellaneous industrial/manufacturing land uses, including a scaffolding business and an auto body shop. Rust Street is a major vehicular thoroughfare located adjacent to railroad tracks.

1.2 Site History

Between 1925 and 1985, Con Edison and its predecessor, the New York and Queens Electric Light & Power Company, operated an electric distribution substation at the Site. In June 1996, Con Edison sold the Site to LDC Realty Holdings, L.L.C. ("Encore"). In December of 1997, RAW Realty & Equipment Company ("Raw") acquired the Site from Encore. Encore and Raw conducted tire-recapping operations at the Site. The Site is presently owned and occupied by M & A Linens, a wholesale fabric supplier.

In 1996, Site remediation activities were conducted by Con Edison during which PCB-contaminated soils that contained greater than 10 parts per million (ppm) PCBs were excavated and disposed off-site in accordance with federal, state and local regulations. The 10-ppm site cleanup objective was consistent with the most stringent levels specified in the United States Environmental Protection Agency's (USEPA) PCB spill cleanup policy. Soils were excavated to depths ranging from 1 to 8 feet below land surface (bls), with the deepest excavation occurring in areas located at the east end of the former outdoor transformer and buss work yard adjacent to 58th Street (see Figure 2). Following excavation activities, confirmatory samples were collected from the bottom of the excavations. All confirmatory samples met the 10-ppm PCB cleanup objective. Due to the subsequent change in the PCB cleanup criteria since 1996 for surficial soils (<2 feet), some soils exceeding the current-day standard for PCBs were left behind. Excavated areas were backfilled with clean fill, and the New York State Department of Health (NYSDOH) issued a letter (dated April 8, 1996) indicating that the Site had been *"remediated appropriately for the intended use of the property."* The NYSDEC recommended (in correspondence dated May 4, 1996) that groundwater-monitoring wells be installed at the Site to obtain groundwater quality samples for use in the Site Assessment.

In December 1996, three groundwater-monitoring wells were installed. These are identified as MW-101 to MW-103 on Figure 3. Free-phase product was observed in MW-103, located in the northeast section of the property. The separate phase liquid contained PCBs at concentrations of approximately 300 ppm.

Additional groundwater monitoring wells were installed during subsequent investigations. The well locations are shown on Figure 3. Routine gauging of on-site wells, conducted from

1996 to the present, demonstrated that free-phase product exists at the Site. Interim remedial measures (IRMs) designed to remove product from the Site have occurred from 1996 to the present.

More detailed descriptions of the subsurface investigations and interim remedial measures are provided in the reports listed in Section 5.0. Tables of pertinent laboratory soil and groundwater analytical results (for those parameters that exceed regulatory standards only) are presented herein.

1.3 Previous Investigations

1.3.1 Subsurface Investigations: 1996 - 2001

In 1996, 1999, and 2000/2001, Jacques Whitford oversaw the installation of numerous soil borings and monitoring wells at the Site. The locations of the soil borings (identified as SB-1 through SB-23, and monitoring wells (identified as MW-101 through MW-403) are shown on Figure 3. During each investigation, soil and groundwater samples were collected and analyzed for PCBs, VOCs, SVOCs, and metals (2000/2001 only). Soil quality analytical results were compared to Recommended Soil Cleanup Objectives (RSCO) found in NYSDEC Technical and Administrative Guidance Memorandum ("TAGM") #4046. Water quality analytical results were compared to the NYSDEC Groundwater Quality Standards (GWQS). The results of the soil quality laboratory results are presented in Tables 1-1 to 1-4. The results of the groundwater quality laboratory results are presented in Tables 1-5 to 1-8.

The results of these investigations indicated that free-phase product, containing PCBs, is the primary issue of environmental concern at this Site. The distribution of free-phase product at the Site is shown on Figures 4a through 4e.

Soil quality results showed that the highest levels of PCBs (specifically PCB Aroclor-1260), VOCs, SVOCs, and metals are present in subsurface soils beneath the concrete pads shown on Figures 2 and 3. Soils with concentrations exceeding regulatory standards were found to be isolated throughout the Site. The only soils exceeding the NYSDEC TAGM RSCO of 1 ppm for surface soils were four isolated areas remaining from the 1996 remediation work, which was conducted with a cleanup goal of 10 ppm. These locations are identified as "areas requiring shallow excavation" on Figure 5. The tabulated results of the 1996 testing are included as part of Appendix A. The only soil sample with a PCB level exceeding the NYSDEC TAGM 4046 RSCO for subsurface soils of 10 ppm was from soil boring SB-4 at 14 feet bls to 16 feet bls, which had a reported PCB concentration of 10.2 ppm (see Table 1-1).

There were no concentrations of VOCs reported at or above the respective RSCOs of TAGM 4046 (see Table 1-2). Soil quality laboratory results for SVOCs reported only four individual compounds with concentrations that exhibited exceedances of TAGM 4046 RSCOs (see Table 1-3). For the majority of samples, the metals for which concentrations were reported above their respective TAGM #4046 RSCO included beryllium, cadmium, calcium, chromium, iron, magnesium, manganese, and zinc. Arsenic was also reported above its respective RSCO at two locations (see Table 1-4).

Water quality laboratory results for PCBs reported concentrations at levels below the NYSDEC GWQS of 0.1 ppb for all wells with the exception of PCB Aroclor 1260, which was reported sporadically (see Table 1-5). Water quality laboratory results for VOCs reported concentrations of VOCs at levels below laboratory detection limits or below NYSDEC GWQS, with the exception of benzene and chloroform, which were reported at three monitoring wells (see Table 1-6). There were no SVOCs reported at levels exceeding GWQS (Table 1-7). Water quality laboratory results for TAL Metal reported concentrations of metals at levels below laboratory detection limits or below NYSDEC GWQS, with the exception of aluminum, iron, manganese, and sodium (see Table 1-8).

Samples of product were collected from those wells in which measurable quantities of free-phase product were detected and were analyzed for PCBs and Gas Chromatograph (GC) Fingerprint. PCB Aroclor-1260 was reported at concentrations of 328 ppm in MW-103, 1.1 ppm in MW-201, 163 ppm in MW-203, and 214 ppm in MW-302. The GC Fingerprint case narrative for samples collected from MW-103, MW-201, and MW-203 stated that the samples contained organic compounds in the Diesel Range Organic (DRO) range, but was not similar to any of the target standards. The samples were subsequently reanalyzed and compared to specific dielectric fluids used by Con Edison. A match to one of these standards was made and the free-phase product was reportedly identified as "Suntrans" dielectric fluid. This fluid was likely a mineral oil transformer fluid. No MSDS data sheet could be located for this fluid. A sample of product from MW-302 was also analyzed and compared to specific dielectric fluids used by Con Edison. A match to one of these standards was made and the free-phase product in MW-302 was identified as Sun #4 Cable Oil. This product is a heat-transfer mineral oil. It is unknown whether the Sun #4 Cable Oil is similar to the Suntrans Oil previously reported by the laboratory as the product in MW-103 in 1999.

1.3.2 Aquifer Characteristics Analyses

1.3.2.1 2002 Pumping Tests

Jacques Whitford conducted pumping tests on three on-site wells in September 2002 to evaluate the Site's hydraulic characteristics, potential yield, and radius of influence for a potential groundwater/product pump and treat remediation system. Variable rate or "step tests" were conducted on MW-201, MW-202 and MW-103A on September 18 and 19, 2002. The variable rate tests conducted on MW-201 and MW-202 (2-inch diameter wells) were unsuccessful, as the wells could not sustain relatively low pumping rates (i.e., 0.1 to 0.2 gpm).

The variable rate test conducted on MW-103A (a 4-inch diameter well) was determined to be more responsive at pumping rates of 0.1 gpm, 0.2 gpm, and 0.3 gpm over three 100-minute intervals. A constant rate pumping test was subsequently conducted on MW-103A for 24 hours from September 23 to 24, 2002 at a rate of 0.25 gpm. The hydraulic results indicated that, at this pumping rate, a cone of influence was developed that centered on MW-103A and extended primarily southeast to northwest across the Site. After 24 hours of pumping, the results further indicated that free-phase product had migrated from surrounding monitoring wells toward MW-103A.

The data from the tests conducted at MW-103A indicated that this 4-inch diameter well could sustain a continuous pumping rate of 0.25 gpm. Transmissivities of the aquifer material underlying the Site were determined to range from 100 to 500 gpd/foot. Although this material has relatively low transmissive characteristics, hydraulic control was demonstrated over the majority of the Site impacted by residual free-phase product. Measured drawdowns after 24 hours of pumping were shown to encompass the various Site wells that have had measurable levels of free-phase product. The results further showed that depression of the water table was viable, allowing it to draw product towards the pumping well at minimal pumping rates. The data showed that measured product thicknesses decreased at the surrounding monitoring wells and increased at MW-103A.

Water quality samples were collected from MW-103A at the end of the step test and constant rate test. PCB Aroclor-1260 was reported at concentrations above the GWQS (0.1 ppb) at 1.5 ppb and 0.38 ppb following the step test and constant rate test, respectively (see Table 1-5). VOCs were reported at levels below laboratory detection limits or below NYSDEC GWQS, with the exception of the compound 1,4, dichlorobenzene, which was reported at concentrations above the GWQS (5 ppb) at 12.5 ppb and 12.7 ppb following the step test and constant rate test, respectively (see Table 1-6). The SVOC analytical results were similar to the VOC results, in that 1,4, dichlorobenzene was the only parameter reported at a concentration above its respective GWQS (see Table 1-7). Note that although 1,4, dichlorobenzene is reported under both VOC (EPA Method 8260) and SVOC (EPA Method 8270) compound lists, it is considered more a volatile organic than a semi-volatile organic compound. Laboratory Total Petroleum Hydrocarbon (TPH) results for groundwater samples collected following the constant rate test at MW-103A reported concentrations of petroleum base transformer oil at 10.6 ppm and total hydrocarbons also at 10.6 ppm.

The results of the pumping tests suggest that a groundwater capture approach could be a viable means of remediation at the Site, whether used alone or as part of a larger remediation scheme. The water quality results indicate that if a pump-and-treat system were to be employed at this Site, treatment of the discharged groundwater would likely be necessary prior to disposal to a local publicly operated treatment works (POTW) facility.

1.3.2.2 Pressure Pulse Technology Pilot Test

As a means to enhance free-phase product recovery in lieu of groundwater pump-and-treat, a Pressure Pulse Technology (PPT) pilot test was conducted at the Site. Prior to the start of the pilot test, two existing 2-inch-diameter monitoring wells (MW-201 and MW-203) were converted to 6-inch-diameter recovery wells (MW-201A and MW-203A). A 6-inch-diameter injection well (IW-1) was also installed for the actual injection or pulsing. The pilot test consisted of one week of "water flood", during which potable water was pumped into the injection well at a constant rate. Inflow was adjusted to maintain a constant head in the well, while preventing product from being forced out of the well.

The second stage of the PPT consisted of actual pulsing of water into the injection well. Results of the PPT will be included in the Remedial Action Report (RAR) under separate cover. Con Edison has chosen to remediate the Site by excavation (see Sections 2 & 3) and the bulk of this RAWP will focus on the excavation option.

1.3.3 Interim Remedial Measures

1.3.3.1 Passive Recovery 1999 - 2002

From October 1999 to April 2001, Jacques Whitford, at the request of Con Edison, conducted passive and active product recovery activities at the Site. Product was removed from those wells with measurable free-phase product using a combination of oil absorbent wicks, free-product skimmers, and hand bailing during regular weekly monitoring events. Over this time period, Jacques Whitford estimates that a total of 25 gallons of product (with some entrained water) was removed from the wells. Although these activities were somewhat successful, it was determined that a more active system should be developed and implemented.

1.3.3.2 Product-Only Recovery 2001 - 2002

In April 2001, Con Edison initiated the removal of separate phase product through the use of a product-only recovery system. This product-only recovery system was initially set up in well MW-201 and then MW-203. Due to poor performance in these 2-inch diameter wells, the system was set up in MW-103A, which is a 4-inch diameter well, from June 2001 to September 2002. The system was programmed to turn on and remove separate phase product at a set frequency each day. Removing product at a pre-determined frequency prevented product from significantly accumulating in the well. It is estimated that this system removed approximately 37 gallons of separate phase product over this 15 month time period.

1.3.3.3 VEFR Activities 2002 – 2003

As an additional IRM, Con Edison initiated Vacuum Enhanced Fluid Recovery (VEFR) activities at the Site commencing in September 2002. The purpose of the VEFR activities was to initiate a more aggressive removal of separate phase product from the subsurface at the Site prior to developing a more detailed remedial action.

The VEFR activities were conducted at two-week intervals between September 12, 2002 and January 27, 2003 at MW-103A, MW-201, MW-202, and MW-203. The field data collected (product and water level data, volume removed, etc) indicated that about 180 to 300 gallons of product/water were removed from each of the four on-site wells during the four months of VEFR activities. Due to emulsification of the fluids removed from the wells it was difficult to accurately determine or measure the actual volume of product and/or water removed from each well. However, the data from MW-201 indicated a decreasing trend in measured product thickness levels over time as a result of the VEFR events. These results suggest that the plume centered on MW-201 is not extensive and was responding favorably to aggressive pumping.

The data from MW-103A, MW-202, and MW-203 suggest that, although relatively large volumes of product/water were removed from each well, the VEFR activities had limited influence on the measured thickness of separate phase product in these wells. Water level and product thickness data collected from MW-301 suggest the aggressive pumping at the nearby VEFR wells influenced the separate phase product levels measured at MW-301, resulting in decreasing levels over time at this well. Recovery efforts, using both VEFR and skimming methods, had limited success and the remaining volume of free-phase product will be removed through the proposed RAWP excavation efforts.

1.3.4 2003 Qualitative Human Health Exposure Assessment

In accordance with the NYSDEC VCGP requirements, Jacques Whitford completed a Qualitative Human Health Exposure Assessment (QHHEA) for Con Edison. The purpose of the QHHEA was to assess the potential for individuals to be exposed to contaminants originating from the Site. The qualitative assessment explored exposure pathways associated with the existing subsurface conditions, as well as with impacts from potential remedial programs and the proposed expansion of the existing building.

Based on previous investigations at the Site, it was determined that the source of contamination is the residual PCB-containing free-phase product located at depth on the groundwater table (approximately 15 to 17 feet bls) underlying the parking lot area of the Site. It was also determined that there appeared to be limited release and transport mechanisms from the source to points where people may be exposed. The primary source of potential exposure to Site contamination would likely be during intrusive activities, which would bring free-phase product, contaminated groundwater and/or contaminated soils to the surface.

Potential exposures to Site contaminants, which may occur from ingestion, inhalation, and/or dermal contact of soil and/or groundwater, were determined to be limited to intrusive work (e.g., during trench activities associated with utility installation, subsurface remedial work, or building construction). The Site is currently covered with bluestone gravel, concrete, and the existing building footprint, thereby limiting areas of exposed soil where exposure could occur. The potential receptors (people who may come in contact with contaminated media) were determined to include construction and utility personnel working in subsurface soils, and on- and off-site residents who may be exposed to dust from subsurface soils during such excavation related activities. However, much of the soil that would be encountered during these types of activities is clean backfill, which replaced contaminated soil that was removed in 1996. As shown on Figure 2, this area of previous excavation and backfill primarily encompasses the area beyond the concrete pads. The depth of excavation and backfill ranged from 1 to 8 feet.

Three alternatives were evaluated for handling and disposal of the dewatering fluids. These were: minimal on-site treatment (oil/water separator (OWS) only) and disposal to a storm or sanitary sewer; on-site pretreatment (OWS, frac tank, bag filter, GAC units) and disposal to a storm or sanitary sewer; and, on-site storage and disposal directly to tankers for off-site disposal. After discussions with the NYSDEC and the NYCDEP, the first option was eliminated. The agencies, before approving the option, would require extensive testing of the effects of long-term pumping on the quality of the dewatering fluids, at a significant cost and with a delay of schedule. Options two and three, both tacitly approved by the agencies, were compared by cost and implementability. The analysis determined that option two was far more cost effective, with disposal costs over an order of magnitude less. However, due to limited space on-site, the implementability of option three (less area required for the frac tank as opposed to the treatment train) was more favorable. After further analysis, it was determined that adequate area did exist on site for the placement of the treatment train and option two (on-site pretreatment and disposal to sewer) was selected.

Dewatering activities, then, would likely consist of sump pumps installed in specific areas of the excavation to lower the water table just prior to excavating. The dewatering fluids would be pumped through an oil-water separator then into a 4,000 to 6,000 gallon frac tank located on-site for settling and containment. This material would then be treated through an on-site treatment train consisting of a bag filter to decrease the sediment content and a Granular Activated Carbon (GAC) unit to treat the water to effluent standards. The treated effluent would then be disposed to a nearby sewer manhole.

As an additional safety measure, the resultant moist soils will be amended with stabilization or solidification media (e.g., lime) to further lower the water content and prevent phase separation in the disposal trucks.

Installation of a sheeting/shoring system would be accomplished with construction equipment but is a proven technology at depths of up to 20 feet bls. With the existing soils at the Site, installation of a sheeting/shoring system should be easily implemented.

Post-excavation groundwater monitoring would be conducted on a routine basis in a manner consistent with the NYSDEC Voluntary Cleanup Program.

Obtaining permits from and/or coordination with various agencies will be necessary. Up to 20 to 25 trucks will likely be entering and exiting the Site each day, which will create the need for New York City Department of Transportation (DOT) permits for temporary lane and temporary sidewalk closure along Rust Street. A permit from NYCDEP for discharging the treated dewatering fluids into a nearby sewer will also need to be obtained. The excavated soil will be transported under appropriate manifest to a licensed disposal facility. This remedial approach does not pose any long-term Operation and Maintenance (O&M) issues.

The potential for ingestion, inhalation, or dermal contact with contaminated groundwater was also determined to be remote. Nonvolatile contaminants (e.g., PCBs, SVOCs, metals) in groundwater would not pose an inhalation hazard as they do not become airborne unless the water enters the air as a mist. The potential for exposure to contaminated groundwater was determined to be unlikely given the fact that groundwater is about 15 to 17 feet bls and that the constituents of concern are nonvolatile and therefore, will not volatilize into the vadose zone and migrate to the surface. Groundwater is not, nor is it expected to be, a potable or any other type of water supply source. The only anticipated contact with groundwater would be during excavation activities, monitoring, and/or pumping activities undertaken by groundwater remediation specialists who operate under strict health and safety requirements as outlined by the Occupational Safety and Health Administration (OSHA).

1.4 Summary of Environmental Conditions

The presence of free-phase product containing PCBs on the water table underlying the Site was confirmed and more fully delineated by supplemental investigative fieldwork. Data from the additional monitoring wells installed as part of the work suggest that the extent of free-phase product is centered in two locations beneath the parking lot area of the Site. The distribution of free-phase product on the water table is shown on Figures 4a through 4e. Levels of product have consistently been measured in MW-201, as well as in MW-203 and certain wells in close proximity to MW-203. Laboratory analytical data report different PCB concentrations in these two plumes as well. The concentration of PCB Aroclor-1260 in MW-201 is reported at 1.1 ppm, while the concentration of PCB Aroclor-1260 in wells MW-203, MW-103, and MW-302 has been reported to range from 163 to 328 ppm. The data suggest that the free-phase product is the primary contamination issue at this Site. The soil and groundwater quality data indicate that limited exceedances of regulatory standards exist in Site soils and groundwater.

The primary Remedial Action Objectives of Site remediation are:

- to remediate the Site to a contaminant level that is protective of public health and the environment;
- to remove documented free-phase product to the extent practical during the construction period;
- to remove remnant surficial soils at varying locations throughout the Site not addressed during the 1996 remediation activities;
- to remove PCB contaminated soils to the required limit (1.0-ppm PCBs in surface soils, 10-ppm PCBs in subsurface soils) within the sheetpiled area;
- to effect the remediation of the Site groundwater to acceptable levels through the remediation of contaminant source soils and free-phase product; and
- to control the potential migration of free-phase product.

1.4.1 Standards/Criteria/Guidance

To achieve the Remedial Action Objectives noted above, each media of concern (soil, groundwater, and product) will be evaluated separately against the appropriate NYSDEC cleanup standard or guidance.

- Soil. Soil quality data from Site investigation work indicate minimal exceedances of regulatory standards at this Site. Based on these results and on discussions with the NYSDEC, the EPA PCB Spill Cleanup residential/unrestricted access area cleanup policy for PCBs in subsurface soil (40 CFR Part 761) and the current NYSDEC TAGM #4046 RSCO for PCBs, VOCs and SVOCs in soils will be used to evaluate remediation of soils beneath the Site. In addition, TPH (analyzed by EPA Method 8100 – Modified) will be evaluated for compliance purposes. The TPH analyses will be used to guide the remedial actions by delineating the extent of transformer oil, or related free-phase product, in the subsurface.

- Groundwater. Although exceedances of standards for PCBs, VOCs, SVOCs, and metals were reported at the Site, the NYSDEC determined that only PCBs, VOCs, and SVOCs are of concern at the Site. It is anticipated that the groundwater quality at the Site will improve upon the completion of the RAWP. Ongoing monitoring will be used to assess the groundwater quality after the completion of the RAWP. The NYSDEC GWQS (Water Quality Regulations, Surface Water and Groundwater Classifications and Standards NYCRR Title 6, Chapter X, Parts 700-705) and New York City Department of Environmental Protection (NYCDEP) Bureau of Wastewater Pollution Control Regulations for those selected analytes will be used to evaluate the success of the proposed remediation of groundwater beneath the Site.

- Free-Phase Product. There are no promulgated free-phase product cleanup standards in New York. Therefore, Con Edison will utilize Division of Environmental Remediation Spill Response Guidance Policy – Spill Guidance Manual Section 1.6-Technical Field Guidance Corrective Action to evaluate remediation of residual free-phase product beneath the Site. The primary objectives of a product-recovery operation are to recover as much product, to the extent practical, to complete the recovery operation in as short a time period as possible, and to control the potential migration of product on to or from the Site.

As noted previously, the former Maspeth Substation Site is not currently owned by Con Edison. It is privately held by M&A Linens. The current Owner has expressed the desire to expand his existing facility into the parking lot area - the area most impacted by previous Site activities. To that end, the current Owner has indicated to Con Edison that they prefer the Site be remediated to the Unrestricted Use Standard, even though the Site is currently used for commercial purposes and it is anticipated that the Site will continue to be used for these purposes. Meeting every pro-forma aspect of Unrestricted Use Standard may be difficult at this Site due to ambient regional water quality, metals concentrations in the urban soil beneath the parking lot and (likely) the building, and the requirement to leave an engineered barrier in place as part of the remedy (see discussions in Sections 2.2 and 3.2.3.6).

However, it remains Con Edison's goal to remediate the Site soils to the applicable PCB, SVOC and VOC standards for Unrestricted Use. Con Edison contends that the concentrations of metals in on-site soils have not been impacted by the historic Site uses and are not significantly different from the off-site soils; and, therefore, do not require remediation for metals. Con Edison also believes that once the impacted soils and free-phase product are removed the Site will have no direct impact to the local groundwater quality. Additionally, since the top of the engineered barrier will be 2 to 4 feet below grade (depending on the proposed M&A building expansion plans) and, although its presence must be noted, should not affect Site activities. When the remediation project is completed, as described in Section 3, there will be no likely risk to human health and the environment from the identified Site contaminants.

Discussions with the NYSDEC on this topic have resulted in the following findings:

- The primary contaminant of concern at the Site is PCBs in soil and free-phase product;
- Con Edison will excavate and dispose of the soil to applicable PCB standards in all accessible areas beneath the parking lot and concrete slabs;
- Con Edison will remove all free-phase product to the extent practicable beneath the parking lot and concrete slabs;
- Con Edison will complete post-excavation sampling, consistent with NYSDEC requirements, and analyze the samples for PCBs (Method 8082) and TPH (EPA Method 8100 Modified);
- Twenty percent of the post-excavation sampling locations will also be analyzed for VOCs (EPA Method 8260) and SVOCs (EPA Method 8270);
- An engineered barrier will be constructed to restrict potential migration of unrecovered free-phase product back into the excavation;
- Four groundwater monitoring wells will be constructed within the remediated area and sampled quarterly and analyzed for PCBs, VOCs and SVOCs;
- If the post-remediation confirmation samples of soil and/or groundwater indicate a potential off-site impact in the area beneath the 58th Street sidewalk, Con Edison will investigate and address as necessary this issue at that time; and
- Based on the results of these analyses (soil, groundwater and free-phase product), the NYSDEC will determine the suitability of the Site for Unrestricted Use.

1.4.2 Soil

As stated above, the NYSDEC TAGM #4046 RSCO will be used to evaluate the need for soil remediation at the Site. Numerous soil samples have been collected at the Site and analytical data indicate that soil is present on-site above the RSCO. Tables 1-1, 1-3, 1-4 and Appendix A provide a summary of the constituents present in Site soils above NYSDEC TAGM #4046 RSCO for PCBs, SVOCs, and TAL Metals. Most PCB exceedances are remnants of the previous shallow remediation work conducted in 1996 when the cleanup standard for shallow soils was 10 ppm. Twenty-one locations between 12 and 24 inches below grade reported PCB concentrations between 1 and 10 ppm. Exceedances were reported for PCBs in only one subsurface soil sample (SB-4 14–16 ft bls). Similar PCB results were reported during the recent Pre-Characterization Pre-Sampling Report (see Appendix E), which was conducted in August/September 2004 to fill data gaps in the existing analytical information. Exceedances for SVOCs were reported in only five soil samples (SB-10 5-7 ft bls, SB-14 5-7 ft bls, SB-23 5-7 ft bls, MW-305 11-13 ft bls, and MW-306 15-17 ft bls). Exceedances for TAL Metals were reported for every soil sample collected during the 2000 Site Investigation. There were no reported exceedances for VOCs in Site soils.

As described previously, and presented in detail in the QHHEA, there is no current exposure route, i.e., access to contaminated soils on the Site. The Site is covered by the building footprint, concrete pads, and bluestone on top of clean fill. In addition, access has been restricted by locked gates and fencing. As described in Section 1.3.1, most of the shallow soils contaminated with PCBs were excavated in 1996. These areas, as shown in Figure 2, were located in the parking lot area north of the six concrete vaults. The historical soil quality data indicate there is little soil contamination that would require remediation.

Based on the contaminant distribution in the Site soil, the intended re-use of the property, and the QHHEA, the NYSDEC determined that the primary contaminant of concern in soil at the Site is PCBs. Based on this finding Con Edison chose an excavation/disposal option as a remedy.

This proposed excavation area is approximately 100 feet by 50 feet. If it is assumed that all soils from ground surface to just below the water table (about 18 feet bls) are excavated and transported off-site for proper disposal, approximately 3,000 cubic yards would be removed and disposed off-site. The removal of additional soils may be required to properly access the impacted soils.

1.4.3 Groundwater

Groundwater data collected to date indicates that Site groundwater has been minimally impacted at levels above the NYSDEC Groundwater Quality Standards. Tables 1-5 to 1-8 summarize the constituents present in Site groundwater that exceed the NYSDEC Class GA GWQS. As shown, concentrations of PCBs and low concentrations of VOCs and SVOCs have been reported exceeding applicable GWQS. However, since the main issue of concern is free-phase product, active remediation of groundwater contamination is not recommended. It is believed that once the free-phase product is remediated (assumed to be a source of groundwater degradation) groundwater quality will attenuate to background or ambient levels.

After the proposed excavation and subsequent backfilling activities are completed, monitoring wells will be installed within the excavated area for the purposes of post-remediation monitoring. Groundwater samples from these post-remediation monitoring wells will be analyzed for PCBs, VOCs, and SVOCs and compared to the respective GWQS.

Nonvolatile contaminants (e.g., PCBs, SVOCs, metals) in groundwater do not pose an inhalation hazard as they do not become airborne unless water enters the air as a mist.

However, groundwater pumping for dewatering may be required during potential soil excavation activities. Treated groundwater from dewatering activities may also be contained in one or more frac tanks for settling purposes, prior to disposal. The discharge of the potentially pumped water will either be to a POTW via discharge to a combined storm water/sanitary sewer after on-site treatment such as through a Granular Activated Carbon (GAC) unit or directly collected for off-site disposal. Necessary NYCDEP discharge permits will be obtained if the dewatered material is discharged to the POTW.

1.4.4 Free-Phase Product

Historic water level and free-phase product level data indicate that free-phase product exist at the Site primarily beneath the parking lot area of the Site. Table 1-9 presents historic water level and product data and Figures 4a through 4e depict the free-phase product distribution at various times at the Site. Table 1-10 presents laboratory analytical data from free-phase product samples. Remediation is deemed necessary because this product is hazardous due to the reported concentrations of PCBs in the product (1.1-ppm at MW-201 and 163 to 328-ppm in wells in vicinity of MW-103A). The specific PCB compound identified at the Site has been reported as Arochlor-1260. The objective of product remediation will be to control its migration, recover product to the extent practical during the construction activities via excavation.

1.5 Contemplated Use

The goal of the remedy selection process is to remediate the Site to a level that is protective of public health and the environment under the conditions of the site's Contemplated Use. Under the VCP, cleanups must be protective of public health and the environment under the conditions of the Contemplated Use of the site. In the VCP application, the Volunteer is required to specify the Contemplated Use of the site. The VCA or Order shall specify one of four different site use categories, as follows:

- **Unrestricted** - To qualify for the unrestricted use category, site conditions after remediation must be such that no engineering controls, use restrictions, or any other institutional controls are needed to make the site protective of public health and the environment under any use. This also applies to sites where a no further action decision has been made after the site investigation.

- **Restricted Residential** - Residential uses such as homes, apartments, mobile home parks, dormitories, schools, and day-care facilities are allowed but require engineering and/or institutional controls for the use to be protective.

- **Restricted Commercial** - Residential uses are not allowed in this category. Commercial uses are allowed but require engineering controls and/or institutional controls. Some types of "commercial" uses that could create "residential" types of exposures are excluded such as day-care and health care facilities.

- **Restricted Industrial** - Residential and commercial uses are not allowed. Industrial uses are allowed but they require the use of engineering controls and/or institutional controls.

As discussed in Section 1.4.1, the intended use of the Site is Commercial; however, the Site Owner have requested that the Site be remediated to Unrestricted Use. Con Edison is proposing a remedy and post-excavation sampling program in an effort to achieve the requested status. If our efforts are unsuccessful in remediating the groundwater through these efforts, Con Edison and the Owner recognize that institutional controls would be applied by the NYSDEC.

2.2.4 Long-term Effectiveness and Permanence

This alternative will achieve long-term effectiveness. Potentially impacted soils will be removed and properly disposed off-site. On-site free-phase product will also be removed and properly disposed off-site. The excavation will be backfilled with clean structural fill. This will result in no long-term on-site exposures. As mentioned in Section 2.2 above, there is the potential for small pockets of free-phase product to remain underneath the building and 58th Street sidewalk and will be inaccessible using this remedy. However, the depth of these potential pockets (15 to 18 feet bls) will not pose long term exposure pathways to on-site workers. Additionally, if post-excavation sampling indicates remaining constituents of concern under the 58th Street sidewalk area, Con Edison will investigate and, as necessary, address this area under a separate action.

2.2.5 Reduction of Toxicity, Mobility, or Volume

This alternative has the ability to reduce potentially contaminated soils through excavation and off-site disposal. The mobility and volume of free-phase product will also be reduced through excavation and off-site disposal. Considering that product migration, based on an extended monitoring period, has been determined to be limited to the parking lot area, this remedy, which will remove the bulk of the documented free-phase product will aid in preventing further migration.

2.2.6 Implementability

This alternative can be implemented at the Site. The soil excavation would be completed using standard construction equipment. The historical soil quality data indicates that the excavated soils would likely be characterized as non-hazardous for disposal purposes. This presumption was confirmed during a Pre-characterization Study completed in August-September 2004 (see Section 3.1.4 and Appendix E). Dump trucks and/or roll-off containers will be lined and covered with plastic sheeting to prevent debris from blowing out of the vehicles.

As the majority of soil to be removed is above the water table, limited dewatering of groundwater is expected with this approach. Excavating within the saturated zone, however, will likely create a need for dewatering, primarily to decrease the water content in the soils for transportation and disposal. Con Edison evaluated several methods of extraction and disposal of dewatering fluids at the Site. Withdrawal from perimeter well points and from internal sumps was assessed as means of controlling groundwater entering the excavation. Due to the relatively low hydraulic conductance of the Site soils (see Section 1.3.2.1) and the limited area surrounding the proposed excavation for the placement of well points (see Figure 5), the well point option was dismissed as impractical. Based on the limited excavation area requiring dewatering (approximately 5000 square feet (sf)) and the demonstration in Section 1.3.2.1 that hydraulic performance of the Site soil improved with the diameter of the extraction point, the use of excavation sumps, to be installed by traditional methods, was selected.

2.2.1 Protection of Human Health and Environment

This remedial alternative provides protection of the public health and safety by removing the potentially impacted soils and product located on the Site. Clean backfill will then be placed in the excavated area from below the water table to ground surface. This will remove the potential for direct contact to existing on-site workers and to any future construction workers involved in expanding the building. It will also prevent continued degradation of groundwater at the Site.

2.2.2 Compliance with Standards, Criteria, and Guidance

This alternative meets the requirements of NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10) in that potentially contaminated soils will be excavated and disposed off-site and free-phase product in the saturated zone will be removed and properly disposed off-site. Potentially contaminated soils are those soils beneath the parking lot and concrete slabs that exceed the regulatory TAGM #4046 criteria of 1.0 ppm PCBs for surface soils (0 to 2 feet) and 10.0 ppm PCBs for subsurface soils (> 2 feet). It is also believed that these actions will remove soils impacted by SVOCs and VOCs to the applicable standards. Due to the ubiquitous nature of metals exceedances in soil (due to the urban nature of the area) in the Site area, this remedy will not likely meet metals standards in soil. This alternative will meet guidance for free-phase product recovery (to recover product to the extent practical, to control the migration of product, and to complete the recovery operation in as short a time period as possible).

2.2.3 Short-term Effectiveness and Impacts

The potential short-term adverse impacts and risks of this remedy upon the community, the construction workers, and the environment are likely to occur during the actual excavation activities (estimated at about 30 to 45 days). These short-term effects would likely be due to migration of dust containing Site contaminants. A Community Air Monitoring Plan (CAMP) that includes upwind and down wind locations, action levels, and abatement measures would be implemented, as well as a detailed Environmental Health and Safety Plan (EHASP). Dust suppression methods, such as wetting down unsaturated soils and limiting work during high wind periods, would also be implemented during this approach. The contractor will also develop a Site Management Plan (SMP), to be approved by the NYSDEC, describing all appropriate techniques to minimize impacts.

An important aspect of this remedial option is the relatively short time frame (30 to 45 days) to achieve the remedial action objectives discussed in Section 1.0, which also limits the potential exposure.

2.1.4 Long-term Effectiveness and Permanence

This alternative will not achieve long-term effectiveness in that impacted soils, groundwater, and free-phase product (likely a source of continued groundwater impacts) will remain on Site. Although the historical groundwater and product monitoring indicate that product is not migrating from the Site, natural biodegradation of Site contaminants will likely take many years to meet the applicable Standards, Criteria, and Guidance levels.

2.1.5 Reduction of Toxicity, Mobility, or Volume

This alternative has the ability to reduce the toxicity of the free-phase product, and contaminated soils and groundwater through natural biodegradation. Over time the concentrations of PCBs within the product as well as the volume of product will likely decrease. However, although monitoring data show the product has not migrated significantly to date, there is no indication that the product will not migrate to downgradient locations over time.

2.1.6 Implementability

This alternative is easily implemented at the Site by maintaining the status quo.

2.2 Alternative 2: Soil Excavation/Free-Phase Product Removal

The soil quality data generated during Site investigation work indicate the soil have limited exceedances of the applicable NYSDEC Criteria. The free-phase product detected at depth has exhibited concentrations of PCBs reported ranging to 328 ppm and needs to be removed. Product-laden soils within the smear zone also need to be removed. This remedial alternative therefore includes the excavation of 7,000 tons of soil for off-site disposal. This represents both unsaturated and saturated soils. The excavated area would be backfilled with controlled fill.

Due to the relatively small size of the parking lot as well as the proximity of the building and the 58th Street sidewalk, excavating the free-phase product will be conducted as practically and efficiently as possible. Dewatering will likely be required during the deeper portion of the excavation activities. To maintain the integrity of the building, sidewalk, and residential properties located on the north side of the parking lot, as well as to assure the safety of construction workers, the sidewalls of the excavation will need to be braced or supported with sheet pile walls. This sheet piling system will, however, prevent the excavation or removal of any small pockets of free-phase product that may remain underneath the building or the sidewalk. Therefore, as an additional means to control the migration of any remaining product, the sheet piling will remain in-place at the completion of the excavation and backfilling.

The QHHEA concluded that the source of contamination is the residual PCB-containing free-phase product located at depth on the water table (approximately 15 to 17 feet bls) underlying the parking lot area of the Site. The QHHEA also concluded that there appeared to be limited release and transport mechanisms from the source to points where people may be exposed. Additionally, the QHHEA concluded that the primary source of potential exposure to Site contamination would likely be during intrusive activities, which would bring free-phase product, contaminated groundwater and/or contaminated soils to the surface. Therefore, this alternative explores how this remedy would be protective of public health and the environment.

2.1.1 Protection of Human Health and Environment

This remedial alternative provides protection of the public health and safety by leaving the contaminated material in place and thereby preventing exposure to potentially impacted soils, groundwater, and product during intrusive activities. As mentioned, the current Owner does have plans to expand the building into the parking lot area. This would entail demolishing and removing the concrete vaults and excavating a portion of the underlying subsurface soils for the expansion's foundation. This would likely result in exposure of construction workers to potentially contaminated soils in this area.

2.1.2 Compliance with Standards, Criteria, and Guidance

This alternative does not include the removal of on-site soils. Therefore, subsurface soils at concentrations slightly above the 10.0-ppm PCB criteria would remain. However, the historical data indicate that soils at these concentrations are not widespread and are found at depths of 10 to 12 feet below ground.

This alternative does not entail removing documented free-phase product. Therefore, product at concentrations ranging to 328 ppm PCBs would remain. However, historical monitoring data suggest the product is not migrating from the Site and is detected at depths ranging between 15 to 18 feet bls.

This alternative also does not include remediation of contaminated groundwater. Therefore, groundwater at levels slightly above the NYSDEC Groundwater Quality Standards would remain under this approach.

2.1.3 Short-term Effectiveness and Impacts

The potential short-term adverse impacts and risks of this remedy upon the community, the construction workers, and the environment are negligible. The primary issue of contamination and/or risk is the free-phase product located from 15 to 18 feet bls. Because of its depth below the subsurface, an exposure pathway is not complete.

2.0 ENGINEERING EVALUATION OF REMEDIES

To minimize the threat to human health and the environment associated with the documented free-phase product, Con Edison evaluated several remedial technologies that would be effective in addressing the impacts present at the Site. As mentioned previously, the primary objectives of Site remediation are to remediate the Site to a contaminant level that is protective of public health and the environment; to remove PCB contaminated soil to the required limits (1.0-ppm PCBs in surface soils, 10-ppm PCBs in subsurface soils); to remove documented free-phase product to the extent practical as quickly as possible; and to control the migration of product to the extent practical. Therefore, this evaluation was based upon consideration of a variety of factors including future expected Site use, surrounding land uses, remediation goals, cost, implementability, reliability, and effectiveness. In terms of future Site use, Con Edison is mindful of the present Owners' plans to expand the building into the parking lot area and does not wish to impede this expansion. Remedial options to address these impacts have been evaluated herein with consideration to the NYSDEC "Technical Guidance for Site Investigation and Remediation (December 2002)".

Three types of remedial options were evaluated. These include the following:

- No Action
- Soil Excavation and Disposal
- Groundwater/Product Extraction, Treatment, and Disposal

The remedial alternatives evaluated for the Site primarily considered product remediation. However, to achieve the remedial action objectives inherent in product remediation, both soil and groundwater remediation activities would likely be necessary. The alternatives developed use proven remedial technologies to address Site soil, groundwater, and free-phase product in order to protect human health and safety, as well as the environment.

The following sections discuss potential remedial options applicable to the Site. Only those technologies that are potentially applicable to the constituents present in the Site soils, groundwater, and free-phase product were considered as part of this evaluation. Detailed evaluations in the form of a remedial action selection report were presented to Con Edison previously under separate cover. Based on the presented detailed evaluations and on discussions, both internally and with the NYSDEC, Con Edison chose to use an excavation/disposal approach to the remediation of the Site. This approach is discussed in Section 2.2 below.

2.1 Alternative 1: No Action

The laboratory quality data generated during Site investigation work indicate that on-site soils and groundwater have limited exceedances of the applicable NYSDEC Criteria. The free-phase product detected at depth has had concentrations of PCBs reported ranging from 163 to 328 ppm and is considered the primary contaminant of concern at this Site.

2.3 Alternative 3: Groundwater/Product Extraction, Treatment, and Disposal

This remedial alternative would include the drilling and construction of one or more large-diameter (6- to18-inch) wells as extraction wells. Previous work conducted at the Site indicates that sufficient hydraulic control via groundwater can be maintained with limited pumping. Work conducted at MW-201 especially indicates the free-phase product plume centered on this well decreased over time during interim VEFR activities.

Free-phase product would be recovered by installing product-only recovery pumps in the large diameter well(s). Groundwater remediation and free product removal would be achieved via extraction, treatment (groundwater only) on-site, and disposal. To provide hydraulic control of the groundwater system, it is estimated that 0.25 to 0.5 gpm of groundwater would need to be extracted. This would depress the water table at the recovery well(s) and create flow paths towards the recovery wells. Free-phase product would then flow on top of the water table and toward the recovery well(s). The groundwater would be treated in an on-site treatment system such as a series of oil/water separator, bag filter (to lower suspended sediment) and granular activated carbon (GAC) drums that would remove the contaminants present in the groundwater. This system would need to be located on-site in a locked, secured shed. There would be no air emissions from the treatment system.

The final aspect of the groundwater portion of the treatment system is discharge of the treated water. Discharge can be achieved via local POTW. The local POTW would require a discharge permit to accept the potential flow (approximately 360 to 720 gallons per day) and chemical concentration limits. The final discharge point would be determined by assessing the sewer system in this area.

Free-phase product would be actively recovered using product-only extraction pumps into 55-gallon drums. These drums would also be situated in an on-site locked, secured shed. Removal and proper disposal of the product drums would be undertaken on a routine basis by Con Edison.

To implement a pump and treat alternative, pre-design investigations may be required including additional pumping test(s) (of long duration) to evaluate groundwater capture and quality over time. If groundwater quality caused by long-term pumping differed from the existing data, a different pre-disposal treatment system would need to be evaluated. Routine gauging of water and product levels at on-site wells would be conducted

2.3.1 Protection of Human Health and Environment

This remedial alternative provides protection of the public health and safety by actively removing free-phase product using groundwater and product depression and extraction and on-site treatment. Groundwater would be treated on-site utilizing a small treatment system (oil/water separator, bag filter, and 55-gallon GAC drums) and discharged to the local POTW. Free-phase product would be actively recovered using product-only extraction pumps into 55-

gallon drums. The groundwater treatment system and product drums would be situated in the locked, secured shed already on-site, or similar.

Although this alternative would meet the remedial objective for product removal, it does not achieve the remedial action goal of removing potentially contaminated soils to the required limit (1.0-ppm PCBs in surface soils and 10-ppm PCBs in subsurface soils). Although historical soil quality data indicate one exceedance of the 10.0-ppm criteria, this alternative may create exposure of construction workers to potentially contaminated soil during the proposed building expansion.

2.3.2 Compliance with Standards, Criteria, and Guidance

Groundwater data collected to date indicate that Site groundwater is minimally impacted at levels above the NYSDEC Groundwater Quality Standards. This alternative would meet the GWQS, in that groundwater pumped from the Site will be treated and disposed at the local POTW. This will result in decreasing concentrations in groundwater over time.

Active removal of free-phase product meets the guidance by recovering as much product as possible and by controlling the migration of product. However, this approach would not complete the recovery operation in as short a time period as possible. Due to the tight, low permeable soils at this Site, this alternative could take many years to achieve this remedial objective.

This alternative does not include removing on-site soils. Therefore, subsurface soils at concentrations slightly above the 10.0-ppm PCB criteria will remain. However, the historical data indicate that soils at these concentrations are not wide spread and are found at depths of 10 to 12 feet below ground.

2.3.3 Short-term Effectiveness and Impacts

The potential short-term adverse impacts of the remedy upon the community, the construction workers, and the environment would be negligible. These short-term effects would likely be during the actual drilling of the boreholes, which would bring potentially contaminated soils to the surface. Migration of dust containing Site contaminants may be created by the drill cuttings. A detailed EHASP would be developed. Dust suppression methods, such as wetting down and containerizing the drill cuttings and limiting work during high wind periods, would be implemented. A CAMP including upwind and down wind monitoring locations, action levels, and abatement measures would also be implemented.

The active groundwater/product pump and treat system would likely take several years to meet the objectives for product recovery. Hydraulic analysis indicates low permeable soils (on the order of 7×10^{-4} cm/sec to 4×10^{-3} cm/sec). Results from the pumping test (Section 1.3.2.1) indicate that low pumping rates on the order of 0.25 to 0.5 gpm will be needed to effectively exert hydraulic control over the area of concern. Higher pumping rates would only dewater the recovery wells and not provide overall effectiveness. Results from the VEFR activities (see Section 1.3.3.2) had limited influence on the measured thickness of separate phase product in the pumped wells. The bi-weekly VEFR activities appeared to decrease the measured product thickness at MW-201 only. At MW-202, MW-203, and MW-103A, the VEFR activities did not appear to make a significant impact in the free-phase product measured in these areas. During the period of free-phase product recovery, the property would have institutional controls, which would impact the current Owner's potential uses of the Site.

2.3.4 Long-term Effectiveness and Permanence

This alternative will achieve long-term effectiveness. Contaminated groundwater would be treated prior to disposal. Free-phase product would be recovered, containerized, and disposed off-site. Limited exposure pathways would exist during the execution of this remedial alternative as contaminated groundwater and free-phase product are pumped to the treatment system and product drums that would be located in an on-site shed. Exposure to these materials in this shed would be to technicians conducting routine O&M on the system and Con Edison employees removing product drums. However, those conducting the activities would be aware of potential hazards, would be sufficiently trained and operating under an EHASP. At the conclusion of product removal, it would be necessary to demonstrate that all PCB-contaminated soils (exceeding their respective limits) are removed from the Site. Demonstrating this might be difficult if the proposed building expansion is completed as planned. Institutional controls would remain in-place until such a demonstration could be made to the satisfaction of the NYSDEC.

2.3.5 Reduction of Toxicity, Mobility, or Volume

This alternative has the ability to reduce the mobility of contaminated groundwater through the hydraulic control measures of the groundwater pump-and-treat system. Approximately 360 to 720 gallons per day would be pumped and treated with the on-site treatment system prior to being discharged to a POTW under this approach. The mobility and volume of free-phase product would also be reduced through product recovery. Considering that product migration, based on years of monitoring, has been determined to be limited to the parking lot, a pump-and-treat system would limit further migration.

2.3.6 Implementability

Alternative 3 can be implemented at the Site. Recovery wells would be drilled using standard drilling equipment, likely hollow stem augers. Drill cuttings would be containerized in appropriate 55-gallon open-topped drums prior to off-site disposal. Submersible pumps, to depress the water table, and product-only recovery pumps are standard equipment. Conduits for wires, pumped groundwater and product would need to be installed in trenches from the well heads to the secure shed (and from the shed to nearby sewer).

Locating the larger diameter recovery wells at existing monitoring wells may restrict the present Owner from expanding the building into the parking lot area. The extraction/recovery well(s) would need to be located in separate structures (about 25 sf) or secure rooms and access to the observation wells would need to be accommodated. The treatment train/product storage room or structure would need to be secure and accessible from the outside. These requirements are achievable but could reduce by up to 10 percent the ability for the current Owner to expand into the parking lot.

Groundwater monitoring would be conducted on a routine basis in a manner consistent with the NYSDEC Voluntary Cleanup Program. Access to the monitoring wells would need to be granted by the Owner.

3.0 REMEDIAL ACTION PLAN

Based on the evaluation of remedies discussed in Section 2, soil excavation of contaminated soil and free-phase product removal was determined, from a technical, financial, and timeliness, to be the selected remediation. The tasks cited below will therefore be completed at the Site. The work will be directed at completing the remedy selected by Con Edison, Soil Excavation/Free-Phase Product Removal, to achieve the remediation goals set forth in Section 1. All required permits will be obtained as discussed below. The work will be completed according to the schedule presented in Section 4. This Work Plan was prepared in general accordance with Section 7 of the Voluntary Cleanup Program Guide (NYSDEC May 2002).

3.1 Pre-Remedial Activities

Numerous tasks are necessary prior to mobilization to the Site to effect the proposed remedy. Each of these tasks is discussed briefly below.

3.1.1 EHASP Preparation

A Site-specific Environmental Health and Safety Plan (EHASP) has been be prepared in keeping with Con Edison, NYSDEC, and OSHA protocols, and is presented herein as Appendix B. The plan specifically addresses key safety issues at the Site including contact with, and inhalation of, Site contaminants; physical risks due to excavation equipment, traffic, and the depth of the proposed excavation; and potential risks to the public through dust or vapors.

3.1.2 CAMP Preparation

A Community Air Monitoring Plan (CAMP) has been prepared in accordance with Appendix D of the VCPG. The purpose of the CAMP is to provide an additional margin of safety to residents and/or businesses located in the vicinity of the Site with respect to dust and volatile compounds that may be generated during proposed remedial work activities. The CAMP discusses air monitoring stations and frequency or readings. It also describes action levels and abatement measures if action levels are exceeded. The CAMP is attached as Appendix C.

3.1.3 QA/QCP Preparation

A Site-specific Quality Assurance/Quality Control Plan (QA/QCP), consistent with Appendix B of the VCPG has been developed and is included herein as Appendix D. During the execution of the remedial activities, on-site engineering staff will submit collected samples to an approved, certified laboratory for analysis. The QA/QCP describes the quality assurance activities associated with the oversight of the excavation contractor and environmental monitoring of the workspace and surrounding areas during excavation. The QA/QCP also describes the protocols for collecting excavation sidewalls and bottom samples, the sampling of the retained water from dewatering activities, and the calibration and operation of the field instruments required for these activities. The QA/QCP also provides detailed descriptions of the various field tasks.

3.1.4 Pre-Characterization Pre-Sampling Study

During historic Site characterization studies, 43 soil samples were collected from the proposed area of excavation. Based on these results, Con Edison determined that the soils to be removed from the Site could be considered to be non-hazardous. Four samples of the free-phase product were also collected and analyzed for PCB concentration. Three of the four samples reported PCB concentrations greater than 50 ppm (163, 214, and 328 ppm), the lower limit of the PCB-hazardous designation. Based on these results, Con Edison determined that all soils in contact with the free-phase product (at or just above the water table) would be handled as hazardous waste.

Based on recent discussions with the NYSDEC, Con Edison agreed to complete additional studies to fill data gaps and confirm this hypothesis. In August-September 2004, Con Edison completed a pre-characterization study for the purpose of characterizing the soil for transport and disposal. The study included the collection of 43 additional soil samples for analysis for PCBs (EPA Method 8082). A report was prepared in September 2004 and provided to the NYSDEC. The report is attached as Appendix E.

The results of the investigation, as well as previous activities, support the conclusion that the majority of on-site soil be characterized as non-hazardous for disposal purposes and that the direct "load and go" approach is appropriate for the overall remedial action at this Site. Free-phase product and any soil in direct contact with the free-phase product (at or just above the water table) would be handled as hazardous waste. It is assumed that the material from ground surface to approximately 15 feet bls will be characterized as non-hazardous for disposal purposes. Material from 15 to 18 feet bls will be characterized as hazardous waste. The actual water table/free product interface will be evaluated during the proposed remedial activities to fully assess the non-hazardous/hazardous horizons.

3.1.5 Public Participation

Following approval of this RAWP, the NYSDEC will issue a notice of the availability of the RAWP for review and comment in the Environmental Notice Bulletin (ENB) for the required 30-day public comment period. Con Edison will also notify the pertinent municipal authorities or representatives that the RAWP is available for review. Con Edison will also work with the NYSDEC to develop a fact sheet and mailing list for adjacent and/or nearby property owners. The fact sheet will describe the Site, as well as provide items such as a summary of the purpose and goals of the remediation, start and end dates of the public comment period, where to review the project documents, how to submit comments, the project schedule and milestones, and list sources of additional information. Public participation will follow the requirements described in Section 5 of the VCPG.

3.1.6 Coordination with Local Officials

The purpose of this task is to assure that all local and State permits and concerns are met and that the work is completed with the minimum of disruption of local activity. The contractor will need to obtain all necessary permits and licenses from the appropriate city and state agencies, such as a "temporary discharge/dewatering permit" and a "Construction Activity Permit". A temporary discharge/dewatering permit will need to be obtained through the local NYCDEP Office. The construction activity permit, to be obtained from the New York City Department of Transportation will be required to cross a sidewalk with equipment, place materials on a street, and temporarily close a portion of a street. The appropriate permits from NYSDEC under the VCA will also need to be obtained. As the work will likely require the closing of at least one lane of Rust Street, the contractor will need to coordinate with the New York City Police Department for potential traffic control. These individuals will be contacted a minimum of thirty days prior to mobilization for excavation activities.

3.1.7 Coordination with Local Utilities

Prior to the initiation of any subsurface work, Con Edison or the selected subcontractor will initiate a NYS Industrial Code Rule 753 to alert their member utilities to the upcoming work. Con Edison's Utility Clearance Protocol will be used to obtain plates, drawings, and maps of water and sewer lines. Previous utility clearance notifications have identified water and sewer mains along the 58th Street sidewalk and roadway and that the municipal services to the existing building, such as sewer and water, are outside the area of proposed excavation.

3.1.8 Preparation of Bidding Documents/Selection of Contractor

Con Edison has prepared bidding documents for prospective bidders to complete the tasks set forth in this RAWP. The bidding documents will reflect this Work Plan, general requirements, and associated provisions, and will contain Technical Specifications and Engineering Drawings. Con Edison will select the contractor most advantageous to the project from Con Edison's list of approved vendors.

3.1.9 Pre-Construction Survey

Prior to commencing any active construction work, the selected contractor will prepare a construction-monitoring program and conduct a pre-construction survey to document baseline and post-construction conditions of adjacent structures and utilities under the guidance of a licensed Professional Engineer registered in the State of New York. The property owners will be notified by certified mail, given ample notice to respond, and urged to cooperate with the survey. The survey will include still photos, and video with narrative of all structures and utilities within 40-feet of the back of the proposed sheeting. Representative cracks, gaps, displacement, or otherwise distressed structures will be monitored with tell-tales, which will be installed prior to sheeting installation. Survey nails or other reproducible monuments will be installed at key utility structures, foundations, slabs and pavements, within 40-feet of the excavation limits, and surveyed by a licensed Land Surveyor registered in the State of New

York. The sheeting alignment, tell-tales, survey monuments, and retained ground surface will be checked regularly for signs of deflection. Deflections in excess of one inch in the sheeting, 0.25 inch at monuments, and 0.1 inch in tell-tales will require immediate notification to the Engineer and Owner, and necessary adjustments in the means and methods.

3.1.10 Pre-Remediation Submittals

The selected Contractor will also prepare and submit the various documents prior to commencing the proposed work. These documents will include, but are not limited to the following

- Design, calculations, and shop drawings, detailing the approach for excavation and structure protection, including all assumptions and investigative data related to subsurface and building conditions.

- Design, layout, and calculations for control of groundwater and collected remediation-derived liquids, including all assumptions and investigative data related to subsurface conditions.

- An SMP for the Work will include, at a minimum, the measures, procedures and detailed operation sequencing and scheduling of how and when the Work will be performed, including selection, specifications, and layout of equipment, and working, staging, handling, and amending areas. The type of drying agent and planned mixing ratio (range) will be outlined in the Plan, including a plan of pre-amendment testing to adjust the ratio. The absorbent-type drying agent must be used in order for the on-site mixing to remain permit-exempt under 6NYCRR Part 373-1. Sequencing and/or control measures will ensure un-impacted or previously remediated areas are not negatively impacted through execution of the contractor's plan. All assumptions will be documented within the SMP. This plan will also include planned inspections by regulatory bodies having jurisdiction, and other quality control measures. Source identification of backfill will be required with back-up laboratory data demonstrating testing for full Target Compound List (TCL) and Target Analyte List (TAL) constituents and geotechnical parameters (sieve analysis, Proctor). Also required will be material certifications for geotextile, geosynthetics, and soil amendments.

- A braced excavation plan, designed and sealed by a licensed Professional Engineer registered in the State of New York.

- Detailed project schedule.

- List of proposed transporters and disposal facilities for each waste stream to include back-up transporters and facilities.

- Project Team, including resumes of key project personnel, equipment list, and a list of any subcontractors and their key personnel and equipment for the project.

- A Site-specific EHS Plan for the Contractor that meets OSHA requirements and Con Edison's Health and Safety requirements.

3.2 Remedial Activities

The selected contractor(s) will mobilize to the Site to complete the invasive portion of the remedial fieldwork. Prior to mobilization, all required permits will have been received, and all of the Pre-Remediation tasks completed. The following sections describe the sequence of remedial activities proposed to meet the Remedial Action Objectives discussed herein. All on-site work will be conducted under the guidance of Con Edison's Construction Management group as well as the Contractor's Site-specific EHS Plan, and the CAMP for the Site.

3.2.1 Decommission Existing Monitoring Wells

The contractor will conduct the abandonment of eight existing monitoring wells located within the parking lot area. The wells will be abandoned in accordance with NYSDEC Groundwater Monitoring Well Decommissioning Procedures (April 2003). Each well will be over-drilled with Hollow Stem Auger (HSA) techniques to the total depth of each well, the PVC screen and riser will be pulled, and each resultant annulus will be grouted from the bottom to 12 feet bls. The grout material will be comprised of appropriate amounts of Portland Cement, powdered bentonite, and water mixed at ground surface and pumped into the annulus via tremie pipe from the bottom to 12 feet bls. The wells to be decommissioned include: MW-102, MW-202, and MW-307 (2-inch diameter PVC wells 24 feet deep), MW-103A and MW-403 (4-inch diameter PVC wells 24 feet deep), MW-201A and MW-203A (6-inch diameter PVC wells 24 feet and 25 feet deep, respectively), and IW-1 (6-inch diameter stainless steel well 24 feet deep). Well construction materials located in or below the smear zone will be disposed as hazardous waste.

3.2.2 Removal of Concrete Structures/Preliminary Excavation

The six concrete vaults will be demolished to the requisite size, excavated, and transported to a construction and demolition (C&D) landfill or recycling plant. In addition to the concrete vaults, the concrete slab located in the vicinity of MW-101 (see Figures 2 and 5) will also be removed from the Site. This slab must be removed in order to proceed with the overall excavation plan. As mentioned previously, several soil borings were drilled through the concrete vaults. Some borings encountered steel re-bar, while other borings encountered only concrete. Wipe samples of the concrete vaults were collected in 1996 and designated as V1 to V18 on Figure 2. The results are attached in Appendix A. Based on the wipe sample results, the concrete pads met EPA standards. Therefore, the ultimate disposal point will be left to the discretion of the selected contractor. Since this concrete material will be considered as C&D waste, in accordance with NYCRR Part 360 regulations it can not and will not be returned to the Site and used as backfill.

As noted in Section 1.3.1, remediation activities conducted at the Site in 1996 cleaned up the surficial soils to the (then current) PCB standard of 10 ppm. This left several small areas where soils with PCB concentrations above 1 ppm (the current standard) remained above two feet bls. Concurrent with the demolition of the concrete, the contractor will remove those soils exceeding the current standards in those areas not proposed for deeper excavation. The locations of these isolated sites are shown on Figure 5. The excavated soil may be stockpiled on-site in an impacted area slated for excavation or transported immediately off-site. If stockpiled, the appropriate management of the soil must be included in the SMP.

After the concrete structures and remote shallow soils are removed from the Site, the excavation area will be rough-graded to allow equipment and truck access, resulting in a level of about 1 feet below original grade.

3.2.3 Remnant Surficial Soil Excavation

Surficial soils with reported PCB concentrations in excess of 1 ppm remain at four locations outside of the principal excavation area. These areas are identified on Figure 5 as "Areas Requiring Shallow Excavation". Following the removal of the on-site concrete slabs and vaults, these isolated areas will be excavated and disposed as non-hazardous waste. Once the excavation has achieved a depth of 2 feet bls, post-excavation confirmation samples will be collected and analyzed for PCBs and TPH at the required density of one sample per 250 square feet. A minimum of one sample will be collected per area. One sample will also be analyzed for VOCs and SVOCs. Soil sampling will be consistent with the protocol described in the attached QA/QCP (Appendix D).

3.2.4 Excavation

This task encompasses the removal of a prescribed volume of contaminated soil and product from the Site. The purpose of excavation is to remove impacted soil and free-phase product from the Site. Post-excavation soil samples of the sidewalls and bottom will be collected to confirm the completeness of the remedial action. The excavation will subsequently be backfilled with clean structural fill. The assumed lateral extent of soil impacts addressed by this excavation is primarily the area bordering the existing building (from the fence line along 58th Street to beyond MW-201, or about 100 feet) and extending about 50 feet into the parking lot area (just beyond the concrete vaults/pads - see Figure 5). If post-remediation sampling (soil, groundwater, free-phase product) conducted as part of this RAWP indicates the presence of off-site impacts, Con Edison will investigate and, address as necessary, such issues at that time.

The vertical extent of this subsurface soil excavation is estimated to be approximately 18 feet. As mentioned previously, water table is about 15 feet bls, however, seasonal fluctuation of the water table has likely created a smear zone from about 12 to 18 feet bls. As free-phase product has not been observed below 19 feet bls (except isolated observations at MW-201 and MW-203) and all soil samples collected from the 18-foot horizon have met current standards for PCB concentration, the target depth of the excavation is 18 feet bls. Confirmatory bottom samples may direct the excavation to continue until clean soil is encountered or until the maximum depth limit of the shoring is reached.

Bracing the excavation will be necessary to support the existing building to the south, the 58th Street sidewalk to the east, and the residential properties to the north. Additional bracing will be necessary along the western sidewall to maintain proper and safe working conditions. Excavation bracing is discussed in more detail is Section 3.2.3.1

Existing soil quality data from Site investigation work indicates that the bulk of the excavated soil (approximately 7,000 tons) would be characterized as non-hazardous for disposal purposes. This was demonstrated by the completion of the pre-characterization study described in Section 3.1.4 (Appendix E). The free-phase product and all product-laden soil are considered hazardous due to the reported concentrations of PCBs in the product. This amount of soil is expected to require about 15 to 20 days to excavate and transport off-site. This effort will require about 20 to 25 trucks entering and exiting the Site each day from Rust Street. The same rate of truck traffic is estimated during the backfilling activities.

Due to the location of the Site and excavation, trucks will enter and exit from Rust Street. It will therefore likely be necessary to close one lane of traffic along Rust Street during working hours while the excavation and backfilling activities take place. The contractor will provide a police detail, if required, and appropriate signage and other traffic controls consistent with the Manual of Uniform Traffic Control Devices (MUTCD). In order to maintain a reasonable noise level and air quality during these procedures, the contractor will either stage his queued trucks at an off-site location or instruct them not to be idling while in the Rust Street queue. Any trucks queued to be loaded will not idle any longer than allowed by local laws and regulations.

Each truck will be lined and covered with polyethylene or equivalent to prevent debris or fluids from spilling or leaking. An additional Site control will include constructing a decontamination pad within the Site boundaries. This decontamination pad, located adjacent to the Rust Street access gate, will be used to inspect and secure each vehicle, and clean the exterior, tires, and undercarriage of each vehicle prior to exiting the Site onto Rust Street. Sumps will be placed at the decontamination pad to collect the wash water, which will managed with the on-site treatment system used for dewatering purposes (see Section 3.2.3.4 below).

Details on the specifics of the remedial excavation are presented in the following sections.

3.2.4.1 Braced Excavation

The excavation is planned to extend to a uniform depth of 18 feet below existing grade, and possibly deeper, locally. The excavation will extend laterally until achieving the remedial objectives or reaching the shoring or bracing or on-site structures.

The extent of the excavation is indicated on Figure 5. Excavation bracing will be required to effectively advance excavations to within five feet of the existing Site building to the south, and to within 2 feet of the chain link fences to the east and the north. The five-foot limit along the building will provide room for sheet pile hammer and allow for a safe walkway for on-site workers and for access to the building.

The fourth (west) side will be partially shored to facilitate grading, construction of a decontamination pad, and allow for equipment and truck access via a ramp from Rust Street as shown on Figure 5.

The north side of the existing (former substation) building is supported by shallow spread footings to a depth of approximately 4 feet bls. Protection of the existing foundation and floor slabs from loss of bearing support is a factor in the evaluation and design of the selected bracing system.

Various bracing options were evaluated, including slurry walls, soil mixing, lagging, and sheeting. The slurry wall and soil mixing systems are advanced technologies that offer the benefits of minimal potential disturbance to on- and off-site properties and structures, however, the limited working area space at the Site was considered not conducive to these technologies. Soldier piles and lagging are a fairly common application in urban areas, however, are not conducive to wet excavations. Based on an evaluation of the remedial action objectives and geotechnical considerations, it was decided that a system of sheet pile walls would be the most efficient and effective option for bracing the excavation and protecting the adjacent structures and roadways.

The selected contractor will be responsible for providing the design, which is to be prepared and sealed by a licensed Professional Engineer registered in the State of New York.

3.2.4.2 Excavation and Loading

As mentioned above, the target depth of the remedial excavation (based on Site investigation results) is 18 feet bls. To achieve this target depth and due to the limited overall size of the parking lot area it will be necessary to install sheeting along all four sides of the excavation. This is depicted on Figure 5. This sheeting will protect or brace the areas underneath the building (along the south side), the 58th Street sidewalk (along the east side), the residential properties (along the north side), and access area (along the Rust Street/west side). Along the south and east sides the excavation will extend vertically directly from ground surface to 12 to 18 feet bls. Because the sheet piling will abut the building and 58th Street sidewalk, it will not be practical to excavate underneath the building and/or sidewalk. If post-remediation sampling (soil, groundwater, or free-phase product) conducted as part of this RAWP indicates the presence of off-site impacts, Con Edison will investigate and address, as necessary, such issues at that time.

The excavation will extend to a preliminary depth of 12 feet bls. All excavated soil will be transported to an off-site disposal facility. The north and west sidewalls will be sloped (at the

OSHA required slope of 1.5 feet horizontal to 1.0 feet vertical) down to the 12 feet bls level. Once at 12 feet bls, a minimum of four advance excavations will be completed by the contractor to evaluate, and ultimately facilitate, dewatering needs at the site. Section 3.2.3.4 describes the dewatering aspect in more detail.

The soil quality and free-phase product isopach data from Site investigation work indicate that excavation and removal of soils and product to 18 feet bls will be necessary along the southern and eastern sides.
However, the soil quality and free-phase product isopach data from Site investigation work also indicate that, although the soil along the sloped northern and western sidewalls (from 0 to 12 feet bls) do not exceed the 10-ppm PCB standard, there will likely be soil and product in the 12 to 18 foot horizon that will exceed the standards and will need to be removed from the Site. Therefore, portions of the sloped northern and western sidewall will have to be excavated and removed in order to access the deeper material. The ultimate volume of soil excavated will depend on the results of samples collected an analyzed for free-phase product or PCBs. The sampling and analytical methods are presented in Section 3.2.3.3.

Due to relatively small parking lot area, there is no room to store any "clean" soils for possible reuse as backfill. It is also not logistically or economically feasible to store any "clean" soils at an off-site location for possible reuse. Therefore, all soils excavated from the Site will be loaded directly into lined trucks for transport to and approved disposal site.

To allow for access from the excavation area to Rust Street, an access ramp will be constructed. The ramp will be at a 20% slope. A decontamination pad with a sump will be situated along the ramp and adjacent to the Rust Street gate. All trucks exiting the Site will be washed (tires, undercarraige, etc.) to prevent any soil or other debris from being tracked off-site.

Numerous soil borings at the Site do not indicate the presence of boulders or other over-sized clasts requiring segregation. However, the Site history suggests that buried rubble, structures, and utilities may be encountered. Concrete structures, conduits, and, potentially, other buried structures and utilities may underlie the Site. Any currently operational underground utilities will be protected and temporarily supported, maintained in workable condition, and protected from damage during excavations and backfill. Utilities not planned for re-use should be capped off at the property lines, and removed.

The oversight of the excavation activities will take place under the direction of the Con Edison Construction Management Group, the EHASP and CAMP, and a separate, project-specific Environmental Safety Plan to be prepared by the contractor. Both safety plans will be in accordance with 29 CFR 1910. The contractor will be responsible for maintaining a safe working environment, both during work hours, and while the Site is inactive. Restraints, at a minimum, will include diversion barrels and safety tape and locking both entrance gates each night.

3.2.4.3 Excavation & Post-Excavation Sampling

As the excavation proceeds laterally and vertically, observation, field screening, and testing will be conducted using both in-situ as well as laboratory analytical methods (see QA/QCP in Appendix D). Sidewall and bottom samples will be collected and analyzed in the field with a PCB immmunoassay kit. This type of kit is designed for rapid analysis (one to two hour run times) of PCB concentrations. If assay results exceed appropriate standards, the excavation will continue to the extent feasible. If the assay results do not exceed appropriate standards, excavation will be stopped in that direction and additional sidewall and bottom samples will be collected and submitted to an independent, certified, and approved laboratory for analysis on a 24-hour turn around time (TAT) basis for confirmation. The details are described below and in the QA/QCP (Appendix D).

Soil samples will be collected in 25 linear-foot increments along the sidewalls of the excavation. The discrete grab samples will then undergo field screening followed by laboratory analysis in accordance with the procedure outlined below. The QA/QCP (Appendix D) provides a complete description of the protocols for collecting excavation sidewalls and bottom samples. Sampling intervals will be every 25 linear feet of sidewall and every 2 to 4 feet of depth (i.e., 0 to2 feet, 2 to 6 feet, 6 to-10 feet, 10 to 14 feet, and 14 to18 feet bls).

- Discrete grab samples from the top two-feet along all the four sidewalls will be collected and submitted for laboratory analysis for PCBs (EPA Method 8082) and TPH (EPA Method 8100 – Modified). Twenty percent of those samples will also be analyzed for VOCs (EPA Method 8260) and SVOCs (EPA Method 8270). The results will be compared to the regulatory cleanup targets. As discussed above, all soils in this interval will be excavated (and properly disposed of off-site) up to the sheeting along all four sides.

- The excavation will proceed vertically to the preliminary minimum depth of 12 feet bls. From 12 to 18 feet bls (the proposed bottom of the excavation), a minimum of four excavations will be completed from within the excavation at a spacing of roughly 50 feet to evaluate and facilitate Site dewatering requirements.

- Excavation of impacted soil will then proceed. The sheeting set along the south and east sidewalls will prevent lateral excavation in these directions. However, the excavation will be able to proceed to the north and west. If the excavation proceeds in these directions, additional discrete grab samples will be collected every 5 to 10 feet to the north and west and tested with the PCB immunoassay kit and submitted for laboratory analysis. The PCB analytical data, as well as visual evidence of free-phase product, will be used to direct the excavation to the north and west. The contractor will continue excavation in these directions until directed to stop. In any event, excavation will not proceed past the sheeting limits shown on Figure 5.

- At the conclusion of excavation, or at periods during the excavation when the maximum extent of excavation is reached, confirmation samples will be collected in the manner described above (every two feet vertical and 25 feet horizontal). The sheeting set along the south and east sidewalls will prevent lateral excavation in these directions. Discrete grab soil samples along these sidewalls will be collected through the sheeting from these areas and directly from the exposed soil surface or through the sheeting along the north and west flanks. The samples will be field screened and each sample will be laboratory analyzed for PCBs and TPH as described above. A roughly 20 percent of the sampling locations, samples will also be collected for VOCs and SVOCs, using the methods described above.

- Post-excavation confirmation samples will also be collected from the bottom of the excavation, as required by NYSDEC protocol. Up to 20 soil samples will be collected using decontaminated sampling equipment (one sample per 250 square feet of excavation-bottom) and analyzed for PCBs and TPH, as described above. Twenty percent of those samples (up to four) will also be analyzed for VOCs and SVOCs, as requested by the NYSDEC.

- As described in the attached QA/QCP, all soil sampling equipment and non-disposable field equipment will be decontaminated between sampling/testing events.

3.2.4.4 Dewatering

The excavation is proposed to a target depth of 18 feet bls. This will result in the excavation being advanced from one to three feet below the recorded groundwater depth (15 to 17 feet bls, seasonally). The contractor, taking into account the following items at a minimum, will design a final dewatering plan. As discussed in Section 2.2.6, the limited area surrounding the excavation and the low permeability of the soils, make perimeter-dewatering wells non-feasible. Con Edison also explored the concept of discharging dewatering fluids directly to tankers for off-site disposal. The resultant selection was a plan to collect fluids from sumps placed in the excavations advanced to 18 feet from the 12-foot level, pre-treat on-site, and discharge to the sewer. This plan is described in more detail below.

Conceptually, the selected plan will incorporate filtered perforated collection sumps located within the excavations discussed above. Submersible pumps will be placed in the collection sumps and will pump to an on-site oil-water separator and then into a frac-tank (4,000 gal. to 6,000 gal. estimated) for settling. Recovered free-phase product will be placed in appropriately labeled containers for transport and disposal. The extracted water will be secured in the frac-tank for treatment, testing, and disposal. The water from the frac tank will be pumped through a bag filter (to further decrease solids) and then through a series of Granular Activated Carbon (GAC) units for final treatment. The treated water will be sampled for the NYCDEP required effluent parameters (identified in Table 3 of the attached QA/QCP in Appendix D) prior to disposal to the POTW. Additional information describing the protocols and sampling requirements are presented in the QA/QCP. It is estimated that from 10,000 to 70,000 gallons of groundwater could be dewatered from the saturated zone of the excavation.

The dewatering pumps will lower the water table from within the saturated soils to potentially allow the excavated soils to be placed directly into trucks without having to store wet soils on-site for drying. An absorbent-type drying agent can be mixed with the wet soils at an appropriate ratio to aid in drying the soils prior to loading into the trucks. This mixing would occur within the excavation to prevent any cross-contamination. The contractor will complete prior testing of the soil/agent mix to determine the appropriate mixing ratio. These excavated soils will likely be moist but not saturated to the point where excess water will become a separate phase in the trucks.

3.2.4.5 Transport and Disposal

The contractor will provide trucks from a licensed hazardous waste hauler, which will be lined and covered as required to prevent spillage. Any trucks queued to be loaded will not idle any longer than allowed by local laws and regulations. The soil from the excavation will be placed directly into the trucks by an excavator. A decontamination pad (15 feet by 40 feet) will be constructed adjacent to the Rust Street access gate to decontaminate each truck prior to exiting the Site onto Rust Street. Each truck will be inspected and all loads covered and secured for proper transportation. Each truck (exterior, tires, and undercarriage) will be washed down with potable water. A sump will be situated within the decontamination pad to collect the wash water, which will be pumped to the on-site frac tank for storage, treatment, and disposal as described in Section 3.2.3.4.

The trucks will then proceed to a licensed, Con Edison approved, off-site disposal facility for treatment and disposal. At the present time, the facility has not been identified. These data will be provided to the NYSDEC case manager no less than thirty (30) days prior to excavation.

During the soil-boring phase of the various investigation field activities, drill cuttings were containerized in 55-gallon ring topped drums that were labeled and stored in a secure location within the fenced in area of the Site prior to removal. Composite samples from the investigation derived waste (IDW) within the drums were collected and submitted to Con Edison's Environmental Health and Safety (EH&S) laboratory. At the EH&S laboratory, the composite soil samples were analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) for VOCs, SVOCs, PCBs, metals, and other hazard characterization parameters.

The IDW laboratory analytical results, presented in Appendix A and Table 3-1, indicate that the soil generated from the borings (many drilled within the footprint of the proposed excavation) would likely be characterized as non-hazardous for disposal purposes. The soil analytical data presented in Tables 1-1 to 1-4 further show few exceedances of Regulatory Standards were reported and that the soil would likely be characterized as non-hazardous. This was further corroborated by NYSDEC representatives. Additional data were collected during the Pre-Characterization Study (see Section 3.4.1 and Appendix E) and reported to the NYSDEC prior to excavation.

Data from the borings drilled during Site investigation work also identified amounts of concrete, brick, and rubble in the top seven to ten feet at the Site. This material is considered C&D material and cannot be re-used as backfill and must be disposed appropriately off-site.

Due to the relatively small size of the Site it will not be practical to store any soils on-site for re-use as backfill. Therefore all soil excavated from the Site will be transported to an approved, licensed disposal facility.

3.2.4.6 Backfill

Small areas of free-phase product may exist under the building and the 58th Street sidewalk. To prevent cross-contamination of the clean backfill, the sheet pile wall installed for the excavation will remain in-place from the bottom of the excavation (18 feet bls) to approximately 4 feet bls depending on the proposed building extension design.

From the final depth to within 6 inches of the final grade, the excavation subgrade will then be backfilled with certified clean Stabilization Fill and Structural Fill. No existing on-site soils, or soils that contain C&D material will be used as backfill. All backfill material will be comprised of imported fill that will be analyzed by a New York-certified analytical laboratory for (and pass) full Target Compound List (TCL) and Target Analyte List (TAL) per EPA Method references at a frequency of once per 2,000 tons and at least once per borrow source.

Stabilization Fill is material that will be placed in wet conditions or unstable subgrades, as directed by the Engineer, and will consist of rock, stone, slag, cobbles, or gravel, substantially free of shale or other soft, poor durability particles. Broken or blasted un-weathered rock used for this item will be well graded, having no particles greater than 3-inches maximum dimension, 90% to 100% particles finer than 1.5 inches in maximum dimension, and containing less than 10% passing the No. 4 U.S. Standard Sieve. NYSDOT No. 3A Stone meets this requirement.

Structural Fill shall consist of durable granular soil and aggregate, 100% finer than 4 inches, 25% to 60% passing the No. 4 U.S. Standard Sieve, and no more than 15% passing the No. 200 U.S. Standard Sieve, by weight. NYSDOT sub-base meets this requirement. Structural Fill will be placed in maximum 12-inch loose lifts (layers) of uniform thickness and compacted to achieve ±3 percent of optimum moisture to at least 95% of maximum dry density, as determined by Modified Proctor.

The top 6 inches will be backfilled with processed aggregate such as ¾-inch stone, or dense graded aggregate, to provide a stable final surface and reduce future erosion.

Security and safety measures will be maintained consistent with the excavation work. The backfill will be monitored and tested to document that the material, placement, compaction, and protection are in accordance with the project specifications and NYC codes.

3.2.4.7 Monitoring

During all of the field activities, Con Edison's Construction Management group will oversee the contractors(s) and provide project management services. One key aspect of this work will be workspace and community air monitoring. Con Edison will ensure that all on-site work is conducted under the Site-specific EHASP and Community Air Monitoring Plan presented in Appendix C. The on-site engineering staff will monitor for both air-borne dust and volatile organic vapors at the upwind and downwind perimeters and at the downwind work zone on a continuous basis each day. The on-site engineering staff will utilize action levels specified in the NYSDOH's model air monitoring plan. This monitoring will also be in compliance with the EHASP.

3.2.4.8 Monitoring Well Installation

After the Site has been backfilled, four groundwater monitoring wells will be installed within the excavation boundaries and monitored on a quarterly basis for a minimum of one year. The wells will be drilled with hollow stem augers to a target depth of 22 feet bls, per NYSDEC guidelines specified in 6 NYCRR 360-2.11 - Hydrogeologic Report. The wells will be 4-inch diameter PVC. Of particular issue at the Maspeth Site is the occurrence of a strata change that occurs anywhere from 21 to 27 feet bls. The strata underlying the impacted fill/till formation is a flowing sand that rapidly fills the borehole from below, often locking up the driller's augers. The original design depth proposed herein (18 feet bls) was targeted at avoiding these sands. However, the NYSDEC specified that every effort should be made to ensure a five-foot water column in the finished wells. Therefore, the design depth of the wells will be increased to 22 feet bls. This should be adequate for NYSDEC rules as the depth to water averages approximately 17 feet bls at the Site. It should be noted that the field-observed water table at the time of the well installation may be somewhat lower than normal due to water removed during dewatering activities and the presence of waterproof sheet piling along the upgradient boundaries at the Site.

The wells will be completed with flush-mounted, 8-inch diameter, metal riser that will be set in concrete and mounded to promote shedding of surface runoff away from the well head. Each groundwater monitoring well will be developed following completion. Initial development will be completed using surge-block or over-pumping techniques. Due to the proliferation of fine-grained sediments within the formation, low-flow pumping techniques will be required to complete the development process. The proposed locations of these wells, identified as MW-501 through MW–504 are shown on Figure 5. The QA/QCP (Appendix D) provides for the specific protocols concerning the installation and development of the groundwater monitoring wells.

3.2.5 Daily/Weekly Reporting

Daily reports to the NYSDEC and NYSDOH project managers, via electronic media, will document the principal activities that occur at the Site, and will report any significant findings and/or results (including documented CAMP exceedances and identification of contaminated media identified by screening during invasive Site work). Documented CAMP exceedances will also be reported to the NYSDEC and NYSDOH project managers via telephone on the day they occur. Periodic written reports, no less frequently than one per week, will be prepared during remediation activities that disturb soils. Copies of the weekly reports will be included in the final Remedial Action Report.

3.3 Post Remedial Activities

3.3.1 Remedial Action Report/Exposure Assessment

After the completion of the RAWP activities, a Remedial Action Report (RAR) will be submitted. The report will include appropriate drawings that incorporate any changes during the actual remediation/excavation, analytical results, and will include an accounting of all material removed from the Site, including excavated contaminated soil, historic fill and solid waste and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. A bill of lading system or equivalent will be used for off-site transportation of non-hazardous wastes and soils. A waste manifest will be utilized for the transportation of all hazardous wastes and soils. Copies of this documentation relating to off-site transportation of wastes will be included in the final report. The Final Remediation Report will include a certification by a New York State Registered Professional Engineer that all import of soils from off-site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the SMP.

The report will contain appropriate laboratory analytical results and other data to show that the Remedial Action Objectives and the appropriate Standards, Criteria, and Guidance discussed in Sections 1.0 and 1.4.1, respectively have been met. In addition, a Data Usability Summary Report (DUSR) will be prepared by a qualified third party and included in the report.

3.3.2 Quarterly Groundwater Monitoring

Con Edison will conduct quarterly groundwater monitoring at all remaining project-related wells (all off-site) and the four newly installed wells. Wells will be monitored for the presence of free-phase product on a quarterly basis for a minimum of one year following excavation activities. Groundwater quality samples will also be collected from all project-related wells and submitted to an independent, certified, and approved laboratory for analysis of PCBs, TPH, VOCs, and SVOCs.

3.3.3 Remedial Action Progress Reports

In keeping with the existing Voluntary Cleanup Agreement, Con Edison will submit quarterly progress reports presenting the results of the monitoring described in Section 3.3.2. Quarterly Progress Reports will also be submitted that will evaluate the data compiled in terms of the observable impact of the active (excavation) remedy.

3.3.4 Annual Report

One year after the completion of the excavation, Con Edison will prepare a summary report of the action implemented and the results obtained. The report will present a full evaluation of the impacts of the remediation activities.

4.0 SCHEDULE

The schedule prepared for this remedial action project is presented in Table 4-1. In keeping with Con Edison and NYSDEC requirements and the Owner's requests, the schedule is based on completing the active fieldwork (excavation and backfilling) by the end of February 2005.

Task Name	Duration in (Business Days)	Start	Finish
Submit Soil Pre-characterization Study Report	1 day	Tue 9/28/04	Tue 9/28/04
Complete RAWP (with QA/QCP) Revisions	5 days	Fri 10/8/04	Wed 10/13/04
Submit Response to Comments and Revised RAWP to NYSDEC	1 day	Fri 10/15/04	Fri 10/15/04
NYSDEC Review of Revised RAWP	5 days	Mon 10/18/04	Fri 10/22/04
NYSDEC Approves Revised RAWP and Posts RAWP for Public Review	10 days	Mon 10/25/04	Fri 11/5/04
Public Review Period	21 days	Fri 11/5/04	Fri 12/3/04
Con Edison Submits RFP to Selected Contractors	1 day	Fri 10/15/04	Fri 10/15/04
Con Edison Conducts Site Walk	1 day	Tue 10/19/04	Tue 10/19/04
Bidding Process	10 days	Fri 10/15/04	Fri 10/29/04
Bids Due to Con Edison	1 day	Fri 10/29/04	Fri 10/29/04
Review Bids	3 days	Fri 10/29/04	Tue 11/2/04
Con Edison Selects Provisional Successful Bidder	2 day	Mon 11/2/04	Tue 11/3/04
Con Edison Conducts Pre-award Meeting with Contractor	1 day	Thru 11/4/04	Thru 11/4/04
Con Edison Enters into Contract with Successful Bidder	7 days	Thru 11/4/04	Fri 11/12/04
Concrete Demolition: Con Edison Construction Management	5 days	Mon 11/15/04	Fri 11/19/04
Contractor Submits Site Management Plan (SMP), Design Documents, and other Pre-mobilization Deliverables for Review	10 day	Mon 11/12/04	Mon 11/29/04
Internal Review of SMP and other Deliverables	5 days	Mon 11/29/04	Fir 12/3/04

NYSDEC Reviews SMP	5 days	Mon 12/6/04	Fri 12/10/04
NYSDEC Approves SMP	1 day	Fri 12/10/04	Fri 12/10/04
Contractor Mobilizes to Site	1 day	Mon 12/13/04	Mon 12/13/04
Well Abandonment	1 day	Mon 12/13/04	Tue 12/13/04
Sheeting Installation	11 days	Wed 12/15/04	Wed 12/30/04
Excavation Operations	25 days	Mon 1/3/04	Fri 2/4/05
Backfilling Operations	15 days	Mon 2/7/05	Fri 2/25/05
Demobilization (Leave Site)	2 days	Fri 2/25/05	Mon 2/28/05
Install Monitoring Wells	3 days	Wed 3/2/05	Fri 3/5/05
Prepare Remedial Action Report (RAR)	15 days	Mon 2/28/05	Fri 3/18/05
Con Edison Review of RAR	10 days	Mon 3/21/05	Fri 4/1/05
Revise RAR	5 days	Mon 4/4/05	Fri 4/8/05
Submit RAR to NYSDEC	1 day	Fri 4/8/05	Fri 4/8/05

5.0 REFERENCES CITED

Results of Monitoring Well Installation and Groundwater Sampling Maspeth Substation, Queens, New York (Jacques Whitford, 1997).

Interim Report for the Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, New York (Jacques Whitford, June 1999).

Supplemental Remedial Investigation Report for the Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, New York (Jacques Whitford, May 2002).

Interim Product Recovery Activities for the Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, New York, (Jacques Whitford, August 2000).

Results of Vacuum Enhanced Fluid Recovery Activities for the Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, New York, (Jacques Whitford, February 2003).

Qualitative Human Health Exposure Assessment for the Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, New York, Jacques Whitford, February 2003.

Tables

Table 1-1

Soil Sample Results: PCBs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-1 11 - 13	SB-1 15 - 17	SB-2 11 - 13	SB-2 15 - 17	SB-3 9 - 11	SB-3 13 - 15	SB-4 12 - 14	SB-4 14 - 16
PCBs (Method 8081)	10 (Residential) [1]	0.433	2.68	1.52	1.9	0.224	0.0443	2.08	**10.2**

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-5 3 - 5	SB-5 17 - 19	SB-6 9 - 11	SB-6 15 - 17	SB-7/MW-202 16 - 18	SB-7/MW-202 20 - 22	SB-8 11 - 13	SB-8 15 - 17
PCBs (Method 8081)	10 (Residential) [1]	9.37	0.442	0.977	0.0722	0.456	0.059	0.205	1.37

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-9 7 - 9	SB-9 13 - 15	SB-10 5 - 7	SB-10 15 - 17	SB-11 7 - 9	SB-11 13 - 15	SB-12 9 - 11	SB-12 13 - 15
PCBs (Method 8081)	10 (Residential) [1]	0.513	0.967	0.266	0.141	0.171	ND	ND	ND

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-13/MW-201 7 - 9	SB-13/MW-201 9 - 11	SB-13/MW-201 15 - 17	SB-13/MW-201 21 - 23	SB-14 5 - 7	SB-14 7 - 9	SB-16 9 - 11	SB-16 17 - 19
PCBs (Method 8081)	10 (Residential) [1]	ND	ND	ND	ND	0.014	ND	0.171	ND

Entered by: MEA
Checked by: DFM

Table 1-1

Soil Sample Results: PCBs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)		SB-17 6 - 8	SB-17 10 - 12	SB-18 6 - 8	SB-18 8 - 10	SB-19/MW-203 8 - 10	SB-19/MW-203 14 - 16	SB-19/MW-203 22 - 24
	NYSDEC RSCO (ppm)							
PCBs (Method 8081)	10 (Residential) [1]	ND	ND	ND	0.0955	0.0244	ND	0.352

Sample Location Sample Depth (ft below ground)		SB-20 5 - 7	SB-20 17 - 19	SB-21/MW-403 0 - 2	SB-21/MW-403 11 - 13	SB-21/MW-403 15 - 17
	NYSDEC RSCO (ppm)					
PCBs (Method 8082)	10 (Residential) [1]	0.0453	ND	0.239	0.202	0.345

Sample Location Sample Depth (ft below ground)		SB-22 11 - 13	SB-22 15 - 17	SB-23 5 - 7	SB-23 17 - 19
	NYSDEC RSCO (ppm)				
PCBs (Method 8082)	10 (Residential) [1]	0.0238	0.200	0.048	ND

Table 1-1

Soil Sample Results: PCBs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	MW-301 9 - 11	MW-301 15 - 17	MW-302 13 - 14	MW-302 17 - 19	MW-303 13 - 15	MW-303 23 - 25
PCBs (Method 8082)	10 (Residential)[1]	0.653	1.35	0.414	0.087	ND	ND

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	MW-304 13 - 15	MW-304 19 - 21	MW-305 11 - 13	MW-305 18 - 20	MW-306 15 - 17
PCBs (Method 8082)	10 (Residential)[1]	ND	ND	ND	ND	0.0746

Sample Location Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	MW-401 7 - 9	MW-401 9 - 11	MW-402 9 - 11	MW-402 15 - 17
PCBs (Method 8082)	10 (Residential)[1]	ND	ND	ND	ND

All reported concentrations are for PCB 1260

Bold: Indicates compound reported above Recommended Cleanup Objective

ND = Not Detected

Entered by: MEA
Checked by: DFM

Table 1-2

Soil Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-1 11 - 13	SB-1 15 - 17	SB-2 11 - 13	SB-2 15 - 17	SB-2A 15 - 17	SB-3 9 - 11	SB-3 13 - 15	SB-4 12 - 14	SB-4 14 - 16	SB-5 3 - 5	SB-5 17 - 19	SB-6 9 - 11	SB-6 15 - 17
VOCs (Method 8260) Analyte	Regulatory Limit (ppm)													
chloromethane														
bromomethane												0.0023 B		0.0013 B
1,1,2 trichloroethane											0.0021	0.00097	0.0013	
acetone	.2 [1]	**3.56 E**	**8.96**	**6.08**	**15**	0.0088	**4.86**	**3.51**	0.079		0.274 B	0.0348 B	**0.297 E**	0.194 B
carbon disulfide	2.7 [1]										0.0194		0.0017	
methylene chloride	.1 [1]	0.0039 B	0.0037 B	0.0053 B	0.0056 B		0.0136 B	0.0135 B	0.0057		0.0158	0.0079	0.0093	0.0051
methyl t-butyl ether		0.0029 B	0.0030 B	0.0050 B	0.0067 B		0.0108 B	0.0105 B	2.00 B		0.0033 B	0.0035 B	0.0042 B	0.0028 B
2-butanone											0.0321		0.0164	
benzene	0.06 [1]													
4-methyl-2-pentanone	1.0 [1]													
toluene	1.5 [1]	0.0065	0.0033		0.0073				0.0047		0.0073	0.0068	0.0074	0.0013
tetrachloroethene	1.4 [1]			0.0106										
2-hexanone											0.0241			
chlorobenzene	1.7 [1]									0.0173	0.0173			
ethylbenzene	5.5 [1]										0.0018			
m, p-xylene	1.2 [2]	0.0039	0.0018		0.0031				0.0027	0.0179	0.0081	0.0042	0.0042	
o-xylene	1.2 [2]	0.0023	0.0012						0.0021	0.0153	0.0059	0.0027	0.0023	
Isopropylbenzene									0.00099	0.0061		0.0011		0.0011
n-propylybenzene		0.0025	0.0014						0.0041	0.0172	0.0087	0.0045	0.0037	
p-ethyltoluene		0.0071	0.0027						0.0054	0.0308	0.015	0.0066	0.0034	
1,3,5 tri-methylbenzene		0.0043	0.0014						0.0026	0.0174	0.0098	0.0023	0.0017	
tert butylbenzene													0.0013	
1,2,4 tri-methyl benzene		0.0059	0.0021						0.0081	0.0482	0.0219	0.0094	0.0068	
sec-butylbenzene		0.0022	0.0012						0.0031	0.0124	0.0024	0.0019	0.0015	
4-Isopropyltolune		0.0029	0.0019						0.0031	0.012	0.0603	0.0023	0.0014	
1,3 dichlorobenzene	1.6 [1]	0.0069	0.0032						0.0045	0.128	0.0323	0.0063	0.0109	0.0015
1,4 dichlorobenzene	8.5 [1]	0.0209	0.0102		0.0019				0.0402	0.862	0.134	0.0658	0.0774	0.0113
1,2 dichlorobenzene	7.9 [1]	0.0012							0.0018	0.723	0.0077	0.0026	0.0023	
p-diethylbenzene			0.0032						0.0052	0.26				
n-Butylbenzene		0.0029	0.0015						0.0033	0.144	0.0142	0.0013	0.0051	
1,2,4,5 tetramethylbenzene									0.0015		0.0088		0.0032	0.0015
1,2,4 trichlorobenzene	3.4 [1]	0.0126	0.0095	0.0019	0.0045				0.0081	0.0463	0.155	0.0077	0.0026	
napthalene			0.0012						0.0016		0.0244			
Total VOCs		0.0821	0.0458	0.0125	0.0168		0.0000	0.0000	0.1088	1.3436	0.6284	0.1344	0.1639	0.0218
Average VOCs		0.064		0.015			0.000		0.726		0.381		0.093	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives*

[2] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives* for total xylenes

B: Detected in method blank E: Estimated above calibration limit

J: Estimated value below calibrated Method Detection Limit

Total VOCs do not include values reported as present in blanks

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-2

Soil Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-7/MW-202 16 - 18	SB-7/MW-202 20 - 22	SB-8 11 - 13	SB-8A 11 - 13	SB-8 15 - 17	SB-9 7 - 9	SB-9 13 - 15	SB-10 5 - 7	SB-10 15 - 17	SB-11 7 - 9	SB-11 13 - 15	SB-12 9 - 11	SB-12 13 - 15
VOCs (Method 8260) Analyte	Regulatory Limit (ppm)													
chloromethane														
bromomethane														
1,1,2 trichloroethane														
acetone	.2 [1]	**3.4**	**0.53**	**140**	**0.214**	**4.4**	**2.5**	**3.2**	**3.2**	**3.4**	**1.5**	**1.5**		
carbon disulfide	2.7 [1]													
methylene chloride	.1 [1]													**1.8**
methyl t-butyl ether														
2-butanone														
benzene	0.06 [1]													
4-methyl-2-pentanone	1.0 [1]													
toluene	1.5 [1]													
tetrachloroethene	1.4 [1]													
2-hexanone														
chlorobenzene	1.7 [1]													
ethylbenzene	5.5 [1]													
m, p-xylene	1.2 [2]													
o-xylene	1.2 [2]													
Isopropylbenzene														
n-propylybenzene														
p-ethyltoluene														
1,3,5 tri-methylbenzene														
tert butylbenzene														
1,2,4 tri-methyl benzene								0.016			0.020			
sec-butylbenzene								0.020						
4-Isopropyltolune														
1,3 dichlorobenzene	1.6 [1]													
1,4 dichlorobenzene	8.5 [1]					0.100		0.066						
1,2 dichlorobenzene	7.9 [1]													
p-diethylbenzene														
n-Butylbenzene														
1,2,4,5 tetramethylbenzene														
1,2,4 trichlorobenzene	3.4 [1]													
napthalene													0.019	0.019
Total VOCs		0.0000	0.0000	0.000	0.000	0.100	0.000	0.102	0.000	0.000	0.020	0.000	0.019	0.019
Average VOCs		0.000			0.050		0.051		0.000		0.010		0.019	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives*

[2] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives* for total xylenes

B: Detected in method blank

J: Estimated value below calibrated Method Detection Limit

Total VOCs do not include values reported as present in blanks

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-2

Soil Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-13/MW-201 7 - 9	SB-13/MW-201 9 - 11	SB-13/MW-201 15 - 17	SB-13 21 - 23	SB-14 5 - 7	SB-14 7 - 9	SB-16 9 - 11	SB-16 17 - 19	SB-17 6 - 8	SB-17 10 - 12	SB-18 6 - 8	SB-18 8 - 10
VOCs (Method 8260) Analyte	Regulatory Limit (ppm)												
chloromethane		0.0066 B								0.0012 B			
bromomethane		0.0116 B	0.0136 B							0.0019 B		0.0015 B	0.0016 B
1,1,2 trichloroethane													
acetone	.2 [1]	0.222 B	0.414 B	**1.71 E**	**2.72 E**	**5.02**	**8.6**	**3.41**	**7.16 E**	0.0214 B			0.0182 B
carbon disulfide	2.7 [1]												
methylene chloride	.1 [1]	0.0241	0.0321	0.0345	0.0195 B	0.0535 B	0.0123 B	0.169 B		0.0047	0.0027 B	0.0063	0.004
methyl t-butyl ether		0.0053 B	0.0091 B		0.013 B	0.0127 B	0.0112 B	0.0087 B		0.0027 B	0.0056 B	0.0023 B	0.0044 B
2-butanone													
benzene	0.06 [1]												
4-methyl-2-pentanone	1.0 [1]												
toluene	1.5 [1]		0.0094	0.0201			0.0059	0.0115	0.0126 B	0.0038	0.0036		
tetrachloroethene	1.4 [1]												
2-hexanone													
chlorobenzene	1.7 [1]												
ethylbenzene	5.5 [1]												
m, p-xylene	1.2 [2]		0.0097	0.012			0.0047	0.051	0.0091	0.0018	0.0068		0.0012
o-xylene	1.2 [2]		0.0054	0.0053						0.0011	0.0029		
Isopropylbenzene										0.0014		0.0012	
n-propylybenzene			0.0087							0.0016			
p-ethyltoluene			0.0124	0.009			0.0045	0.0046	0.0095	0.0013	0.0046	0.0011	
1,3,5 tri-methylbenzene			0.0065								0.002		
tert butylbenzene								0.0048		0.0014			
1,2,4 tri-methyl benzene			0.0207	0.0126			0.0065		0.0107	0.0013	0.0042		
sec-butylbenzene													
4-Isopropyltolune			0.0061					0.0075					
1,3 dichlorobenzene	1.6 [1]												
1,4 dichlorobenzene	8.5 [1]		0.0087					0.005	0.0174	0.0014	0.0043		
1,2 dichlorobenzene	7.9 [1]												
p-diethylbenzene								0.0047					
n-Butylbenzene										0.0017		0.0013	
1,2,4,5 tetramethylbenzene			0.0202							0.0013		0.0029	
1,2,4 trichlorobenzene	3.4 [1]		0.0058					0.0133	0.0057		0.0026		
napthalene		0.0072	0.0184				0.0076						
Total VOCs		0.031	0.164	0.094	0.000	0.000	0.029	0.102	0.052	0.023	0.031	0.013	0.005
Average VOCs		0.096				0.015		0.077		0.027		0.009	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 1: *Recommended Soil Cleanup Objectives*

[2] Based upon TAGM HWR-94-4046, Appendix A, Table 1: *Recommended Soil Cleanup Objectives* for total xylenes

B: Detected in method blank

J: Estimated value below calibrated Method Detection Limit

Total VOCs do not include values reported as present in blanks

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Entered By: MEA
Checked By: DFM

Table 1-2

Soil Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-19/MW-203 8 - 10	SB-19/MW-203 14 - 16	SB-19/MW-203 22 - 24	SB-20 5 - 7	SB-20 17 - 19	SB-21/MW-403 0 - 2	SB-21/MW-403 11 - 13	SB-21/MW-403 15 - 17	SB-22 11 - 13	SB-22 15 - 17	SB-23 5 - 7	SB-23 17 - 19
VOCs (Method 8260) Analyte	Regulatory Limit (ppm)												
chloromethane													
bromomethane													
1,1,2 trichloroethane													
acetone	.2 [1]	0.457 B	0.210 B	**1.81**	0.101		0.0311	0.0894	0.0273	0.0543	0.0553	0.1950 B	0.0321
carbon disulfide	2.7 [1]											0.0078	
methylene chloride	.1 [1]	0.0066 B	0.0055 B	0.0301 B	0.0042 B	0.0040 B	0.0053 B		0.0042 B	0.0038 B	0.0052 B		0.0049 B
methyl t-butyl ether		0.0028 B	0.0043 B	0.0121 B									
2-butanone													
benzene	0.06 [1]										0.0011		
4-methyl-2-pentanone	1.0 [1]											0.0069	
toluene	1.5 [1]	0.00094	0.0013	0.0049	0.0028		0.0015	0.0028	0.0015	0.0011	0.0332	0.0031	0.0044
tetrachloroethene	1.4 [1]												
2-hexanone													
chlorobenzene	1.7 [1]			0.0118									
ethylbenzene	5.5 [1]				0.0020						0.0321		
m, p-xylene	1.2 [2]		0.0011		0.0072		0.0021	0.0029	0.0017	0.0023	0.137	0.0074	0.0014
o-xylene	1.2 [2]			0.0054	0.0034				0.0011	0.0014	0.0569	0.0031	
Isopropylbenzene													
n-propylybenzene		0.00099		0.0055									
p-ethyltoluene			0.0011										
1,3,5 tri-methylbenzene													
tert butylbenzene													
1,2,4 tri-methyl benzene			0.0015	0.0051									
sec-butylbenzene		0.0016		0.0075									
4-Isopropyltolune													
1,3 dichlorobenzene	1.6 [1]			0.0373									
1,4 dichlorobenzene	8.5 [1]	0.0055	0.0014	0.48									
1,2 dichlorobenzene	7.9 [1]			0.0196									
p-diethylbenzene				0.0459									
n-Butylbenzene		0.0014		0.0169									
1,2,4,5 tetramethylbenzene		0.0022		0.0335									
1,2,4 trichlorobenzene	3.4 [1]	0.0022		0.0243									
napthalene													
Total VOCs		0.015	0.006	0.698	0.1164	0.0000	0.0347	0.0951	0.0316	0.0591	0.3156	0.0283	0.0379
Average VOCs			0.359		0.058			0.054		0.187		0.033	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives*

[2] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives* for total xylenes

B: Detected in method blank

J: Estimated value below calibrated Method Detection Limit

Total VOCs do not include values reported as present in blanks

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-2

Soil Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)		MW-301 9 - 11	MW-301 15 - 17	MW-302 13 - 14	MW-302 17 - 19	MW-303 13 - 15	MW-303 23 - 25	MW-304 13 - 15	MW-304 19 - 21	MW-305 11 - 13	MW-305 18 - 20	MW-306 15 - 17	MW-401 7 - 9	MW-401 9 - 11	MW-402 9 - 11	MW-402 15 - 17
VOCs (Method 8260) **Analyte**	Regulatory Limit (ppm)															
chloromethane																
bromomethane																
1,1,2 trichloroethane													0.0018			
acetone	.2 [1]	0.0994	0.0312	0.0404	0.0182											
carbon disulfide	2.7 [1]			0.0015												
methylene chloride	.1 [1]	0.0057	0.0056	0.0060												
methyl t-butyl ether																
2-butanone																
benzene	0.06 [1]								0.0196							
4-methyl-2-pentanone	1.0 [1]															
toluene	1.5 [1]								0.0012						0.0014	
tetrachloroethene	1.4 [1]									0.0031						
2-hexanone																
chlorobenzene	1.7 [1]															
ethylbenzene	5.5 [1]			0.0043												
m, p-xylene	1.2 [2]			0.0166									0.0036		0.0107	
o-xylene	1.2 [2]		0.0026	0.0107									0.0026		0.0041	
Isopropylbenzene																
n-propylybenzene																
p-ethyltoluene																
1,3,5 tri-methylbenzene																
tert butylbenzene																
1,2,4 tri-methyl benzene																
sec-butylbenzene																
4-Isopropyltolune																
1,3 dichlorobenzene	1.6 [1]															
1,4 dichlorobenzene	8.5 [1]															
1,2 dichlorobenzene	7.9 [1]															
p-diethylbenzene																
n-Butylbenzene																
1,2,4,5 tetramethylbenzene																
1,2,4 trichlorobenzene	3.4 [1]															
napthalene																
Total VOCs		0.1051	0.0394	0.0795	0.0182	0.0000	0.0000	0.0000	0.0208	0.0031	0.0000	0.0000	0.0080	0.0000	0.0162	0.0000
Average VOCs		0.072		0.049		0.000		0.010		0.002		0.000	0.004		0.008	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives*

[2] Based upon TAGM HWR-94-4046, Appendix A, Table 1; *Recommended Soil Cleanup Objectives* for total xylenes

B: Detected in method blank

J: Estimated value below calibrated Method Detection Limit

Total VOCs do not include values reported as present in blanks

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-1 11 - 13	SB-1 15 - 17	SB-2 11 - 13	SB-2 15 - 17	SB-3 9 - 11	SB-3 13 - 15	SB-4 12 - 14	SB-4 14 - 16	SB-5 3 - 5	SB-5 17 - 19	SB-6 9 - 11	SB-6 15 - 17
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)												
1,3 dichlorobenzene													
1,4 dichlorobenzene								0.0433	0.544	0.459		0.079	
3,4 Methylphenol										0.0499 J			
1,2,4 trichlorobenzene			0.0447 J						0.0389 J	0.746			
Naphthalene	13. [1]									0.0629 J			
2-Methyl naphthalene	36.4 [1]									0.113 J			
Dimethyl phthalate	2 [1]										0.038 J		
Acenapthene	50 [1]												
Diethylphthalate	7.1 [1]												
Flourene	50 [1]										0.05		
Phenanthrene	50 [1]						0.0661			2.2			
Anthracene	50 [1]												
Di-n-butylphthalate	8.1 [1]												
Butylbenzylphthalate	50 [1]												
Fluoranthene	50 [1]						0.144						
Pyrene	50 [1]						0.0915						
Benzo (a) anthracene	0.224 [1]						0.0574 J						
Chrysene	0.4 [1]						0.0642 J						
bis(2-Ethylhexyl)phthalate	50 [1]					0.070 B	0.117 B				0.0377 JB	3.73 B	0.257 B
Di-n-octylphthalate	50 [1]												
Benzo(b) fluoranthene	1.1 [1]						0.059 J						
Benzo(k) fluoranthene	1.1 [1]												
Benzo(a) pyrene	0.061 [1]						0.0476 J						
Indeno(1,2,3-cd) pyrene	3.2 [1]												
Dibenz(a,h)anthracene	0.014 [1]												
Benzo(g,h,i) perylene	50 [1]												
Total SVOCs			0.0447			0	0.5298	0.0433	0.6203	3.4831	0.088	0.079	
Average SVOCs		0.022		0.000		0.265		0.332		1.786		0.040	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-7/MW-202 16 - 18	SB-7/MW-202 20 - 22	SB-8 11 - 13	SB-8 15 - 17	SB-9 7 - 9	SB-9 13 - 15	SB-10 5 - 7	SB-10 15 - 17	SB-11 7 - 9	SB-11 13 - 15	SB-12 9 - 11	SB-12 13 - 15
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)												
1,3 dichlorobenzene													
1,4 dichlorobenzene					0.216		0.0864						
3,4 Methylphenol													
1,2,4 trichlorobenzene													
Naphthalene	13. [1]												
2-Methyl naphthalene	36.4 [1]												
Dimethyl phthalate	2 [1]												
Acenapthene	50 [1]												
Diethylphthalate	7.1 [1]												
Flourene	50 [1]												
Phenanthrene	50 [1]												
Anthracene	50 [1]												
Di-n-butylphthalate	8.1 [1]												
Butylbenzylphthalate	50 [1]												
Fluoranthene	50 [1]												
Pyrene	50 [1]												
Benzo (a) anthracene	0.224 [1]												
Chrysene	0.4 [1]									0.0403 J			
bis(2-Ethylhexyl)phthalate	50 [1]	0.0487	0.0492	0.0678						0.0947			
Di-n-octylphthalate	50 [1]												
Benzo(b) fluoranthene	1.1 [1]							0.113					
Benzo(k) fluoranthene	1.1 [1]							0.0449 J					
Benzo(a) pyrene	0.061 [1]							**0.0919**					
Indeno(1,2,3-cd) pyrene	3.2 [1]							0.0686 J					
Dibenz(a,h)anthracene	0.014 [1]												
Benzo(g,h,i) perylene	50 [1]							0.0800 J					
Total SVOCs		0.0487	0.0492	0.068	0.216		0.0864	0.3984		0.135			
Average SVOCs		0.049		0.142		0.043		0.199		0.068		0.000	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location		SB-13/MW-201	SB-13/MW-201	SB-14	SB-14	SB-16	SB-16	SB-17	SB-17	SB-18	SB-18
Sample Depth (ft below ground)		7 - 9	9 - 11	5 - 7	7 - 9	9 - 11	17 - 19	6 - 8	10 - 12	6 - 8	8 - 10
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)										
1,3 dichlorobenzene											
1,4 dichlorobenzene											
3,4 Methylphenol											
1,2,4 trichlorobenzene											
Naphthalene	13. [1]										
2-Methyl naphthalene	36.4 [1]										
Dimethyl phthalate	2 [1]							0.0417 J			
Acenapthene	50 [1]										
Diethylphthalate	7.1 [1]										
Flourene	50 [1]										
Phenanthrene	50 [1]		0.862 J								
Anthracene	50 [1]										
Di-n-butylphthalate	8.1 [1]										
Butylbenzylphthalate	50 [1]										
Fluoranthene	50 [1]			0.410 J							
Pyrene	50 [1]			0.158							
Benzo (a) anthracene	0.224 [1]			0.138							
Chrysene	0.4 [1]			0.122							
bis(2-Ethylhexyl)phthalate	50 [1]	0.0551 J	0.1	0.0776	0.0489 J			0.0619 J	0.0584	0.0548 JB	0.0580 JB
Di-n-octylphthalate	50 [1]										
Benzo(b) fluoranthene	1.1 [1]			0.15							
Benzo(k) fluoranthene	1.1 [1]			0.0579 J							
Benzo(a) pyrene	0.061 [1]			**0.143**							
Indeno(1,2,3-cd) pyrene	3.2 [1]			0.0796 J							
Dibenz(a,h)anthracene	0.014 [1]										
Benzo(g,h,i) perylene	50 [1]			0.0889							
Total SVOCs		0.0551	0.962	1.425	0.0489			0.1036	0.0584	0.0548	0.0580
Average SVOCs		0.509		0.737		0.000		0.081		0.056	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Entered By: MEA
Checked By: DFM

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-19/MW-203 8 - 10	SB-19/MW-203 14 - 16	SB-19/MW-203 22 - 24	SB-20 5 - 7	SB-20 17 - 19	SB-21/MW-403 0 - 2	SB-21/MW-403 11 - 13	SB-21/MW-403 15 - 17	SB-22 11 - 13	SB-22 15 - 17
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)										
1,3 dichlorobenzene											
1,4 dichlorobenzene				0.171							
3,4 Methylphenol											
1,2,4 trichlorobenzene											
Naphthalene	13. [1]				0.0230 J						
2-Methyl naphthalene	36.4 [1]										
Dimethyl phthalate	2 [1]										
Acenapthene	50 [1]										
Diethylphthalate	7.1 [1]										
Flourene	50 [1]				0.129			0.0800	0.0452		
Phenanthrene	50 [1]						0.0471			0.0791	0.731 J
Anthracene	50 [1]										
Di-n-butylphthalate	8.1 [1]				0.122 J	0.0756 J				0.0703 J	
Butylbenzylphthalate	50 [1]										
Fluoranthene	50 [1]				0.0756					0.0462 J	
Pyrene	50 [1]				0.0394 J					0.0264 J	
Benzo (a) anthracene	0.224 [1]							0.0131 J			
Chrysene	0.4 [1]							0.0238 J			
bis(2-Ethylhexyl)phthalate	50 [1]	1.12 B	1.030 B	15 B	0.231 J	0.128 J	0.0479 J	0.0942 J	0.0455 J	0.182 J	0.305 J
Di-n-octylphthalate	50 [1]						0.0468	0.0934 J	0.0202		0.0255 J
Benzo(b) fluoranthene	1.1 [1]							0.0119 J			
Benzo(k) fluoranthene	1.1 [1]							0.0104 J			
Benzo(a) pyrene	0.061 [1]							0.0119 J			
Indeno(1,2,3-cd) pyrene	3.2 [1]							0.0077 J			
Dibenz(a,h)anthracene	0.014 [1]										
Benzo(g,h,i) perylene	50 [1]							0.0077 J			
Total SVOCs				0.171	0.6200	0.2036	0.1418	0.2820	0.1109	0.4040	1.0615
Average SVOCs			0.057		0.412			0.178		0.733	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-23 5 - 7	SB-23 17 - 19	MW-301 9 - 11	MW-301 15 - 17	MW-302 13 - 14	MW-302 17 - 19	MW-303 13 - 15	MW-303 23 - 25	MW-304 13 - 15	MW-304 19 - 21
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)										
1,3 dichlorobenzene											
1,4 dichlorobenzene											
3,4 Methylphenol											
1,2,4 trichlorobenzene											
Naphthalene	13.[1]	0.214									
2-Methyl naphthalene	36.4[1]	0.0561 J				0.0203 J	0.0101 J	0.0285	0.0369		0.0273 J
Dimethyl phthalate	2[1]										
Acenapthene	50[1]	0.157									
Diethylphthalate	7.1[1]						0.0105 J				
Flourene	50[1]	0.480							0.0096 J		
Phenanthrene	50[1]	0.959	0.0469 J		0.0975			0.0150 J	0.0734		
Anthracene	50[1]								0.0151 J		
Di-n-butylphthalate	8.1[1]		0.0916 J					0.0191 JB	0.0195 JB		
Butylbenzylphthalate	50[1]										
Fluoranthene	50[1]	0.830	0.0268 J					0.0075 J	0.0819		
Pyrene	50[1]	0.508						0.0090 J	0.0572		
Benzo (a) anthracene	0.224[1]	**0.283**							0.0299		
Chrysene	0.4[1]	0.317							0.0317		
bis(2-Ethylhexyl)phthalate	50[1]	0.242 J	0.189 J	0.0465 J	0.0232 JB	0.0500 JB	0.0146 JB	0.0247 JB	0.0310 JB	0.0535 JB	0.0706 JB
Di-n-octylphthalate	50[1]			0.0382 J							
Benzo(b) fluoranthene	1.1[1]	0.255							0.0177 J		
Benzo(k) fluoranthene	1.1[1]	0.119							0.0218		
Benzo(a) pyrene	0.061[1]	**0.233**							0.0210		
Indeno(1,2,3-cd) pyrene	3.2[1]	0.147									
Dibenz(a,h)anthracene	0.014[1]	**0.048 J**									
Benzo(g,h,i) perylene	50[1]	0.160							0.0100 J		
Total SVOCs		5.0081	0.3543	0.0847	0.0975	0.0203	0.0206	0.0600	0.4062	0.0000	0.0273
Average SVOCs		2.681		0.091		0.020		0.233		0.014	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Entered By: MEA
Checked By: DFM

Table 1-3

Soil Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		MW-305 11 - 13	MW-305 18 - 20	MW-306 15 - 17	MW-401 7 - 9	MW-401 9 - 11	MW-402 9 - 11	MW-402 15 - 17
SVOCs (Method 8270) Analyte	Regulatory Limit (ppm)							
1,3 dichlorobenzene								
1,4 dichlorobenzene								
3,4 Methylphenol								
1,2,4 trichlorobenzene								
Naphthalene	13. [1]	0.0512 J						
2-Methyl naphthalene	36.4 [1]	0.155		0.122	0.0156 J			
Dimethyl phthalate	2 [1]							
Acenapthene	50 [1]	0.0668 J		0.0413 J				
Diethylphthalate	7.1 [1]							
Flourene	50 [1]	0.0891 J		0.0536 J				
Phenanthrene	50 [1]	0.547		0.673				
Anthracene	50 [1]	0.124		0.128				
Di-n-butylphthalate	8.1 [1]				0.0257 J	0.0366 J	0.0380 J	0.0303 J
Butylbenzylphthalate	50 [1]	0.0546 J						
Fluoranthene	50 [1]	0.555		0.951				
Pyrene	50 [1]	0.421		0.758				
Benzo (a) anthracene	0.224 [1]	0.199		**0.384**	0.0101 J			
Chrysene	0.4 [1]	0.226		**0.425**				
bis(2-Ethylhexyl)phthalate	50 [1]	0.573 B	0.0375 JB	0.604 B	0.0489 J	0.0398 J	0.0485 J	0.0478 J
Di-n-octylphthalate	50 [1]						0.0142 J	0.0460
Benzo(b) fluoranthene	1.1 [1]	0.185		0.335				
Benzo(k) fluoranthene	1.1 [1]	0.185		0.331				
Benzo(a) pyrene	0.061 [1]	**0.189**		**0.349**				
Indeno(1,2,3-cd) pyrene	3.2 [1]	0.0401 J		0.105				
Dibenz(a,h)anthracene	0.014 [1]							
Benzo(g,h,i) perylene	50 [1]	0.069						
Total SVOCs		3.1568	0.0000	4.6559	0.1003	0.0764	0.1007	0.1241
Average SVOCs		1.578		4.656	0.088		0.112	

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 2; *Recommended Soil Cleanup Objectives;* no individual compound above 50 ppm, total SVOCs <500 ppm

B: Detected in method blank

E: Estimated above calibration limit

J: Estimated value below MDL

Total SVOCs do not include values reported as present in blanks

Bold : Indicates compound reported above Recommended Cleanup Objective

Table 1-4

Soil Samples Results: TAL Metals
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		SB-20 5 - 7	SB-20 17 - 19	SB-21/MW-403 0 - 2	SB-21/MW-403 11 - 13	SB-21/MW-403 15 - 17	SB-22 11 - 13	SB-22 15 - 17	SB-23 5 - 7	SB-23 17 - 19	MW-301 9 - 11
TAL Metals (Method 7000)	Regulatory Limit[1] (ppm)										
Aluminum	SB (33,000)	6,300	4,970	5,180	8,590	3,650	4,290	5,310	9,090	3,760	2,760
Antimony	SB	6.00	11.6	6.61	3.78	5.09	5.61	4.17	6.05	4.74	2.95
Arsenic	7.5 or SB	2.86	2.07	3.48	3.39	1.48	1.81	2.31	3.20	1.67	2.55
Barium	300 or SB	27.1	24.2	28.6	39.2	23.5	28.9	28.3	43.9	26.2	18.4
Beryllium	0.16 or SB	**0.63**	**0.67**	**0.69**	**0.70**	**0.58**	**0.55**	**0.63**	**0.57**	**0.60**	**0.48**
Cadmium	1.0 or SB	**1.94**	**3.73**	**1.77**	**1.90**	**1.48**	**1.83**	**1.53**	**2.21**	**1.70**	**1.11**
Calcium	SB (130 - 35,000)	**618**	**989**	**992**	**4,220**	**813**	**948**	**1,030**	**1,750**	**1,280**	**1,040**
Chromium	10 or SB	**16.5**	**12.6**	**15.3**	**35.3**	**11.9**	**11.0**	**12.1**	**23.9**	**11.3**	**11.8**
Cobalt	30 or SB	5.21	5.83	6.41	4.28	5.86	5.07	5.84	8.34	5.71	4.88
Copper	25 or SB	11.1	7.26	12.0	29.4	11.8	20.1	8.50	17.3	9.69	8.59
Iron	2,000 or SB	**14,500**	**26,900**	**13,700**	**16,100**	**11,500**	**13,800**	**11,300**	**16,700**	**12,900**	**10,400**
Lead	SB (200 - 500)	5.39	16.9	4.55	15.8	3.93	11.6	68.1	12.3	5.25	5.19
Magnesium	SB (100 - 5,000)	**1,180**	**1,290**	**1,210**	**1,460**	**1,100**	**1,030**	**956**	**1,460**	**1,100**	**1,080**
Manganese	SB (50 - 50,000)	**253**	**258**	**203**	**139**	**170**	**148**	**183**	**771**	**214**	**156**
Mercury	0.1	0.022			0.053				0.15		
Nickel	13 or SB	9.26	10.3	10.7	10.4	9.28	7.87	8.94	11.2	9.09	7.52
Potassium	SB (8,500 - 43,000)	820	1,070	1,040	1,300	728	795	1,080	927	785	555
Selenium	2.0 or SB										
Silver	SB		9.94								
Sodium	SB (6,000 - 8,000)	401	497	294	460	193	332	431	571	361	422
Thallium	SB										
Vanadium	150 or SB	21.8	19.7	20.2	31.9	15.0	16.4	16.1	38.0	16.0	13.7
Zinc	20 or SB	**23.9**	**27.1**	**28.5**	**33.6**	**26.7**	**21.4**	**31.1**	**41.5**	**23.7**	**21.8**
Total Metals		24,204	36,126	22,758	32,479	18,271	21,475	20,478	31,478	20,516	16,512

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

SB: Site Background

Site Background limits or ranges from TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

J: Estimated value below MDL

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Entered By. MEA
Checked By. DFM

Table 1-4

Soil Samples Results: TAL Metals
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)		MW-301 15 - 17	MW-302 13 - 14	MW-302 17 - 19	MW-303 13 - 15	MW-303 23 - 25	MW-304 13 - 15	MW-304 19 - 21	MW-305 11 - 13	MW-305 18 - 20
TAL Metals (Method 7000)	Regulatory Limit [1] (ppm)									
Aluminum	SB (33,000)	2,010	3,500	2,750	3,040	3,500	4,000	4,680	6,410	2,540
Antimony	SB	2.12	4.43	3.53	2.95		33.0	2.34	2.64	1.53
Arsenic	7.5 or SB	1.57	2.14	2.67	2.00	4.28	2.42	**3,100**	**40.1**	1.61
Barium	300 or SB	13.9	20.5	27.9	19.1	29.6	24.8	28.5	51.5	14.3
Beryllium	0.16 or SB	**0.45**	**0.46**	**0.48**	**0.45**	**0.42**	**0.45**	**0.64**	**0.53**	**0.40**
Cadmium	1.0 or SB	0.77	**1.53**	**1.25**	**1.09**	**1.22**	**1.12**	**1.17**	**1.53**	0.73
Calcium	SB (130 - 35,000)	**795**	**704**	**936**	**899**	**7,530**	**869**	**2,360**	**2,110**	**1,480**
Chromium	10 or SB	8.15	9.41	**11.2**	**12.3**	**14.5**	**11.6**	**13.7**	**14.3**	**13.6**
Cobalt	30 or SB	3.92	3.55	6.06	4.46	3.95	4.80	5.55	5.41	4.28
Copper	25 or SB	11.9	12.2	12.1	12.2	35.6	11.4	12.5	**39.7**	10.2
Iron	2,000 or SB	**6,980**	**14,100**	**11,500**	**10,100**	**10,400**	**10,200**	**11,000**	**11,400**	**6,320**
Lead	SB (200 - 500)	3.51	4.1	3.77	4.26	39.3	10.6	5.83	75.8	3.29
Magnesium	SB (100 - 5,000)	**967**	**886**	**1,320**	**1,150**	**1,600**	**1,340**	**1,880**	**1,620**	**1,210**
Manganese	SB (50 - 50,000)	**64.4**	**149**	**131**	**140**	**178**	**205**	**230**	**215**	**74.3**
Mercury	0.1		0.010	0.011	0.020	0.022	0.032	0.016	**0.41**	
Nickel	13 or SB	7.96	6.72	9.33	7.73	8.38	**14.6**	10.9	11.4	7.13
Potassium	SB (8,500 - 43,000)	457	514	568	599	661	457	698	672	575
Selenium	2.0 or SB									
Silver	SB									
Sodium	SB (6,000 - 8,000)	419	480	479	466	596	149	172	411	85.0 J
Thallium	SB									
Vanadium	150 or SB	11.9	13.0	17.5	14.7	17.6	15.6	18.1	19.9	19.3
Zinc	20 or SB	**20.4**	**21.0**	**24.2**	**21.3**	**49.8**	**25.4**	**28.1**	**150**	**19.1**
Total Metals	-	11,779	20,432	17,804	16,497	24,670	17,376	24,247	23,251	12,295

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

SB: Site Background

Site Background limits or ranges from TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

J: Estimated value below MDL

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-4

Soil Samples Results: TAL Metals
Former Maspeth Substation

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)		MW-306 15 - 17	MW-401 7 - 9	MW-401 9 - 11	MW-402 9 - 11	MW-402 15 - 17
TAL Metals (Method 7000)	Regulatory Limit [1] (ppm)					
Aluminum	SB (33,000)	3,350	6,390	5,830	5,120	4,510
Antimony	SB	3.03	7.26	6.88	9.24	8.49
Arsenic	7.5 or SB	3.35	1.75	1.77	1.17	0.85
Barium	300 or SB	26.6	24.7	24.5	20.9	19.8
Beryllium	0.16 or SB	**0.56**	**0.49**	**0.72**	**0.46**	**0.42**
Cadmium	1.0 or SB	**1.41**	0.99	0.97	**1.05**	**1.20**
Calcium	SB (130 - 35,000)	**1,240**	**748**	**508**	**523**	**1,360**
Chromium	10 or SB	**12.3**	10.0	**12.4**	9.95	**16.3**
Cobalt	30 or SB	5.63	3.54	3.99	3.93	5.16
Copper	25 or SB	14.7	7.16	11.4	7.01	11.9
Iron	2,000 or SB	**12,200**	**10,400**	**9,930**	**10,700**	**13,400**
Lead	SB (200 - 500)	9.51	4.15	3.57	2.75	2.94
Magnesium	SB (100 - 5,000)	**1,100**	**1,300**	**1,730**	**1,590**	**1,690**
Manganese	SB (50 - 50,000)	**218**	**109**	**94.5**	**104**	**134**
Mercury	0.1	0.1	0.014			
Nickel	13 or SB	10.1	7.46	8.25	8.28	9.35
Potassium	SB (8,500 - 43,000)	751	965	953	840	90.6
Selenium	2.0 or SB					
Silver	SB			3.19	0.29	
Sodium	SB (6,000 - 8,000)	261	58.5	349	324	334
Thallium	SB					
Vanadium	150 or SB	17.1	15.7	15.0	15.6	18.9
Zinc	20 or SB	**32.0**	18.1	**25.0**	**22.7**	**22.9**
Total Metals		19,256	20,072	19,512	19,304	21,637

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

SB: Site Background

Site Background limits or ranges from TAGM HWR-94-4046, Appendix A, Table 4;
Recommended Soil Cleanup Objectives

J: Estimated value below MDL

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Recommended Cleanup Objective

Table 1-5

Water Quality Sample Results: PCBs
Former Maspeth Substation

All results reported in parts ber billion (ppb)

Sample Date / Sample Location		3/12/1997 MW-101	3/12/1997 MW-101F	3/12/1997 MW-102	3/12/1997 MW-102F	4/26/1999 MW-101	4/26/1999 MW-102	11/2/2000 MW-303	11/2/2000 MW-304	11/2/2000 MW-304 (Dup)	11/2/2000 MW-305
PCBs (Method 8081&8082) Analyte	Groundwater Quality Stnd										
PCB 1016	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.080	< 0.080	< 0.080	< 0.080
PCB 1221	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.030	< 0.030	< 0.030	< 0.030
PCB 1232	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.11	< 0.11	< 0.11	< 0.11
PCB 1242	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.020	< 0.020	< 0.020	< 0.020
PCB 1248	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.090	< 0.090	< 0.090	< 0.090
PCB 1254	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.040	< 0.040	< 0.040	< 0.040
PCB 1260	0.1	< 0.05	< 0.05	< 0.05	< 0.05	**0.179**	0.0615	< 0.080	< 0.080	< 0.080	< 0.080

Groundwater Quality Standard from: Water QualityStandards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

The March 1997 samples for MW-101 and MW-102 are total (unfiltered) samples, the samples MW-101F and MW-102F were filtered in the field with 0.45 micron filter.

Samples collected on 11/2/00 and 4/3/01 are total (unfiltered) samples

Samples collected on 9/18/02 at end of MW-103A Step Test
Samples collected on 9/24/02 at end of MW-103A 24-hour Constant Rate Test

Bold: Indicates compound reported above Cited Regulatory Standards

Entered by: MEA
Checked by: DFM

Table 1-5

Water Quality Sample Results: PCBs
Former Maspeth Substation

All results reported in parts ber billion (ppb)

Sample Date Sample Location		4/4/2001 MW-101	4/4/2001 MW-102	4/4/2001 MW-301	4/4/2001 MW-302	4/3/2001 MW-303	4/3/2001 MW-304	4/3/2001 MW-305	4/3/2001 MW-306	4/3/2001 MW-306 (Dup)	4/4/2001 MW-307
PCBs (Method 8081&8082) Analyte	Groundwater Quality Stnd										
PCB 1016	0.1	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080
PCB 1221	0.1	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030
PCB 1232	0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
PCB 1242	0.1	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
PCB 1248	0.1	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090
PCB 1254	0.1	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
PCB 1260	0.1	< 0.080	< 0.080	**0.85**	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080

Groundwater Quality Standard from: Water QualityStandards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

The March 1997 samples for MW-101 and MW-102 are total (unfiltered) samples, the samples MW-101F and MW-102F were filtered in the field with 0.45 micron filter.

Samples collected on 11/2/00 and 4/3/01 are total (unfiltered) samples

Samples collected on 9/18/02 at end of MW-103A Step Test
Samples collected on 9/24/02 at end of MW-103A 24-hour Constant Rate Test

Bold: Indicates compound reported above Cited Regulatory Standards

Entered by: MEA
Checked by: DFM

Table 1-5

Water Quality Sample Results: PCBs
Former Maspeth Substation

All results reported in parts ber billion (ppb)

Sample Date Sample Location		4/3/2001 MW-401	4/3/2001 MW-402	4/3/2001 MW-403	9/15/2002 MW-103A	9/24/2002 MW-103A
PCBs (Method 8081&8082) **Analyte**	Groundwater Quality Stnd					
PCB 1016	0.1	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080
PCB 1221	0.1	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030
PCB 1232	0.1	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
PCB 1242	0.1	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
PCB 1248	0.1	< 0.090	< 0.090	< 0.090	< 0.090	< 0.090
PCB 1254	0.1	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
PCB 1260	0.1	< 0.080	< 0.080	< 0.080	**1.5**	**0.38**

Groundwater Quality Standard from: Water QualityStandards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

The March 1997 samples for MW-101 and MW-102 are total (unfiltered) samples, the samples MW-101F and MW-102F were filtered in the field with 0.45 micron filter.

Samples collected on 11/2/00 and 4/3/01 are total (unfiltered) samples

Samples collected on 9/18/02 at end of MW-103A Step Test
Samples collected on 9/24/02 at end of MW-103A 24-hour Constant Rate Test

Bold: Indicates compound reported above Cited Regulatory Standards

Table 1-6

Water Quality Sample Results: VOCs
Former Maspeth Substation

All results reported in parts per billion (ppb)

Sample Date / Sample Location		11/2/2000 MW-303	11/2/2000 MW-304	4/3/2001 MW-304	4/3/2001 MW-306	9/18/2003 MW-103A	9/24/2003 MW-103A
VOCs (Method 8260B) Analyte	GW Quality Stnd (ppb)						
chloromethane	5						
bromomethane	5						
1,1,2 trichlorotrifluoroethene	5						
acetone	5						
carbon disulfide	5						
methylene chloride	5			0.60 B	0.66 B		
methyl t-butyl ether (MTBE)	10						
chloroform	7				**7.80**		
2-butanone	5						
benzene	0.7*	**0.73**	**1.80**	**0.73**			
toluene	5*						
tetrachloroethene	5						
2-hexanone	5						
chlorobenzene	5						
ethylbenzene	5*						
m, p-xylene	5*						
o-xylene	5*						
Isopropylbenzene	5*						
n-propylybenzene	5*						
p-ethyltoluene	5						
1,3,5 trimethylbenzene	5*						
tert butylbenzene	5*						
1,2,4 trimethyl benzene	5*						
sec-butylbenzene	5*						
4-isopropyltolune	5						
1,3 dichlorobenzene	5						
1,4 dichlorobenzene	5					**12.5**	**12.7**
1,2 dichlorobenzene	4.7						
p-diethylbenzene	5						
n-Butylbenzene	5*						
1,2,4,5 tetramethylbenzene	5						
1,2,4 trichlorobenzene	5						
Trichloroethene	5						
1,1-Dichloroethene	5						
naphthalene	10*						
Total VOCs		0.73	1.80	0.73	7.80	12.50	12.70

NOTES:

Groundwater Quality Standard from: Water Quality Standards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

* Regulated Compounds Specifically Listed in STARS Memo # 1, Appendix B - Table 2.

J: Estimated value below calibrated Method Detection Limit

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Regulatory Standards

Table 1-7
Water Quality Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per billion (ppb)

Sample Date		4/26/1999	4/26/1999	11/2/2000	11/2/2000	11/2/2000	11/2/2000	4/4/2001	4/4/2001	4/4/2001	4/4/2001	4/3/2001	4/3/2001	4/3/2001
Sample Location		MW-101	MW-102	MW-303	MW-304	MW-304 (Dup)	MW-305	MW-101	MW-102	MW-301	MW-302	MW-303	MW-304	MW-305
SVOCs (Method 8270B) Analyte	GW Quality Stnd (ppb)													
1,3 dichlorobenzene	5													
1,4 dichlorobenzene	5									0.96 J	0.77 J			
3,4 Methylphenol	NS													
1,2,4 trichlorobenzene	5													
Naphthalene	10*									1.20	1.50	1.70	0.31 J	
2-Methyl naphthalene	50													
2-Chlorophenol	NS													
Dimethyl phthalate	50													
Acenapthene	20*													
Diethylphthalate	50	1.70 JB	2.40 JB									0.25 J	0.26 J	
Flourene	50*													
Phenanthrene	50*													
Anthracene	50*													
Di-n-butylphthalate	50			0.75 J	0.64 J			0.48 J	0.48 J	0.76 J	0.82 J	1.30 JB	0.81 JB	0.46 JB
Butylbenzylphthalate	50													
Fluoranthene	50*													
Phenol	1													
Pyrene	50*													
Benzo (a) anthracene	0.002*													
Chrysene	0.002*													
bis(2-Ethylhexyl)phthalate	50	1.70 J	2.40 J	7.10	0.63 J	0.36 J	1.00 J	0.67 JB	0.90 JB	1.90 B	1.60 JB	3.60 B	2.50 B	1.40 JB
Di-n-octylphthalate	0.002*													
Benzo(b) fluoranthene	0.002*													
Benzo(k) fluoranthene	0.002*													
Benzo(a) pyrene	0.002*													
Indeno(1,2,3-cd) pyrene	0.002*													
Dibenz(a,h)anthracene	50*													
Benzo(g,h,i) perylene	0.002*													
4-Chloro-3-methylphenol	NS													
4-Nitrophenol	NS													
2,4-Dinitrotoluene	1													
Pentachlorophenol	1													
N-Nitroso-di-n-prpoylamine	NS													
Total SVOCs		1.70	2.40	7.85	1.27	0.36	1.00	0.48	0.48	2.92	3.09	1.95	0.57	

NOTES:

Groundwater Quality Standard from: Water Quality Standards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

* Regulated Compounds Specifically Listed in STARS Memo # 1, Appendix B - Table 2.

NS = No Standard

J: Estimated value below calibrated Method Detection Limit

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Regulatory Standards

Table 1-7
Water Quality Sample Results: SVOCs
Former Maspeth Substation

All results reported in parts per billion (ppb)

Sample Date / Sample Location		4/3/2001 MW-306	4/3/2001 MW-306 (Dup)	4/4/2001 MW-307	4/3/2001 MW-401	4/3/2001 MW-402	4/3/2001 MW-403	MW-103A 9/18/2002	MW-103A 9/24/2002 DUP
SVOCs (Method 8270B) Analyte	GW Quality Stnd (ppb)								
1,3 dichlorobenzene	5								
1,4 dichlorobenzene	5			1.80				**6.90**	**6.60**
3,4 Methylphenol	NS								
1,2,4 trichlorobenzene	5								
Naphthalene	10*			0.73 J			0.29 J		
2-Methyl naphthalene	50						0.40 J		
2-Chlorophenol	NS								
Dimethyl phthalate	50								
Acenapthene	20*								
Diethylphthalate	50						0.59 J		
Flourene	50*								
Phenanthrene	50*						0.38 J		
Anthracene	50*								
Di-n-butylphthalate	50	0.42 JB	0.80 JB	0.50 J	0.50 JB	0.55 JB	1.60 B		
Butylbenzylphthalate	50								
Fluoranthene	50*								
Phenol	1								
Pyrene	50*								
Benzo (a) anthracene	0.002*								
Chrysene	0.002*								
bis(2-Ethylhexyl)phthalate	50	1.70 JB	1.90 B	1.80 B	1.80 B	2.00 B	4.80 B		
Di-n-octylphthalate	0.002*								
Benzo(b) fluoranthene	0.002*								
Benzo(k) fluoranthene	0.002*								
Benzo(a) pyrene	0.002*								
Indeno(1,2,3-cd) pyrene	0.002*								
Dibenz(a,h)anthracene	50*								
Benzo(g,h,i) perylene	0.002*								
4-Chloro-3-methylphenol	NS								
4-Nitrophenol	NS								
2,4-Dinitrotoluene	1								
Pentachlorophenol	1								
N-Nitroso-di-n-prpoylamine	NS								
Total SVOCs				3.03			1.66	8.4	7.7

NOTES:

Groundwater Quality Standard from: Water Quality Standards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

* Regulated Compounds Specifically Listed in STARS Memo # 1, Appendix B - Table 2.

NS = No Standard

J: Estimated value below calibrated Method Detection Limit

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Regulatory Standards

Samples collected on 9/18/02 at end of MW-103A Step Test

Samples collected on 9/24/02 at end of MW-103A 24-hour Constant Rate Test

Table 1-8

Water Quality Results:
TAL Metals
Former Maspeth Substation

All results reported in parts per billion (ppb)

Sample Date / Sample Location		11/2/2000 MW-303	11/2/2000 MW-304	11/2/2000 MW-304 (Dup)	11/2/2000 MW-305	4/4/2001 MW-101	4/4/2001 MW-102	4/4/2001 MW-301	4/4/2001 MW-302	4/3/2001 MW-303	4/3/2001 MW-304
RCRA Metals Analyte	GW Quality Stnd (ppb)										
Aluminum	2,000	**8,830**								**2,780**	**3,070**
Antimony	NA										
Arsenic	25										
Barium	1,000										
Beryllium	NA										
Cadmium	10										
Calcium	NA										
Chromium	50										
Cobalt	NA										
Copper	200										
Iron	300	**22,300**	**1,990**	**2,140**	**770**		**3,830**	**8,900**	**23,000**	**8,560**	**22,500**
Lead	25										
Magnesium	NA										
Manganese	300	**2,060**	**2,460**	**2,410**	**1,620**		**310**	**1,400**	**2,060**	**2,200**	**4,990**
Mercury	2										
Nickel	2,000										
Potassium	NA										
Selenium	10										
Silver	50										
Sodium	20,000	**128,000**	**134,000**	**132,000**	**77,600**					**101,000**	**178,000**
Thallium	NA										
Vanadium	NA										
Zinc	300										

Notes:

Groundwater Quality Standard from: Water Quality Standards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

J: Estimated value below calibrated Method Detection Limit

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Regulatory Standards

Entered by: MEA
Checked by: DFM

Table 1-8

Water Quality Results:
TAL Metals
Former Maspeth Substation

All results reported in parts per billion (ppb)

Sample Date / Sample Location		4/3/2001 MW-305	4/3/2001 MW-306	4/3/2001 MW-306 (Dup)	4/4/2001 MW-307	4/3/2001 MW-401	4/3/2001 MW-402	4/3/2001 MW-403	4/3/2001 Matrix Spike	4/3/2001 Matrix Spike DUP
RCRA Metals Analyte	GW Quality Stnd (ppb)									
Aluminum	2,000							**9,980**	**13,900**	**8,010**
Antimony	NA									
Arsenic	25								**35.0**	**37**
Barium	1,000								**2,520**	**2,530**
Beryllium	NA									
Cadmium	10									
Calcium	NA									
Chromium	50								**270**	**270**
Cobalt	NA									
Copper	200								**370**	**350**
Iron	300	**1,270**						**28,600**	**27,600**	**15,900**
Lead	25								**48**	**39**
Magnesium	NA									
Manganese	300				**1,550**			**4,840**	**5,450**	**4,770**
Mercury	2									
Nickel	2,000									
Potassium	NA									
Selenium	10					**11**	**12**			
Silver	50								**51**	
Sodium	20,000	**73,100**	**34,000**	**34,100**		**101,000**	**374,000**	**24,500**	**23,100**	**21,400**
Thallium	NA									
Vanadium	NA									
Zinc	300								**680**	**660**

Notes:

Groundwater Quality Standard from: Water Quality Standards, Surface Waters and Groundwater, NYCRR, Title 6, Section 703.5, Table 1.

J: Estimated value below calibrated Method Detection Limit

Blank Space: Indicates not present at its respective MDL

Bold: Indicates compound reported above Regulatory Standards

Entered by: MEA
Checked by: DFM

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD 2)	Measured Depth To Product (ft TOPVC) 1	Measured Depth To Water (ft TOPVC) 1	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD 2)	Volume Water/Product Removed (gal)	NOTES
MW-101	5-Dec-96	99.78	NA	NA	#N/A	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	17-Dec-96	99.78	None Detected	18.45	NA	NA	18.45	81.33	NA	
	12-Mar-97	99.78	None Detected	18.44	NA	NA	18.44	81.34	NA	
	6-Apr-99	99.78	None Detected	18.26	NA	NA	18.26	81.52	NA	
	26-Apr-99	99.78	None Detected	18.21	NA	NA	18.21	81.57	NA	
	2-Mar-00	99.78	None Detected	21.16	NA	NA	21.16	78.62	NA	
	5-Dec-00	99.78	None Detected	22.03	NA	NA	22.03	77.75	NA	
	3-Apr-01	99.77	None Detected	17.78	NA	NA	17.78	81.99	NA	
	27-Sep-01	99.77	None Detected	18.87	NA	NA	18.87	80.90	NA	
	9-Oct-01	99.77	None Detected	18.97	NA	NA	18.97	80.80	NA	
	26-Oct-01	99.77	None Detected	19.00	NA	NA	19.00	80.77	NA	
	8-Nov-01	99.77	None Detected	19.11	NA	NA	19.11	80.66	NA	
	20-Nov-01	99.77	None Detected	19.13	NA	NA	19.13	80.64	NA	
	7-Dec-01	99.77	None Detected	19.19	NA	NA	19.19	80.58	NA	
	21-Dec-01	99.77	None Detected	16.30	NA	NA	16.30	83.47	NA	
	4-Jan-02	99.77	None Detected	19.35	NA	NA	19.35	80.42	NA	
	16-Jan-02	99.77	None Detected	19.30	NA	NA	19.30	80.47	NA	
	30-Jan-02	99.77	None Detected	19.30	NA	NA	19.30	80.47	NA	
	14-Feb-02	99.77	None Detected	19.34	NA	NA	19.34	80.43	NA	
	1-Mar-02	99.77	None Detected	19.45	NA	NA	19.45	80.32	NA	
	15-Mar-02	99.77	None Detected	19.40	NA	NA	19.40	80.37	NA	
	27-Mar-02	99.77	None Detected	19.37	NA	NA	19.37	80.40	NA	
	12-Apr-02	99.77	None Detected	19.45	NA	NA	19.45	80.32	NA	
	26-Apr-02	99.77	None Detected	19.60	NA	NA	19.60	80.17	NA	
	10-May-02	99.77	None Detected	19.52	NA	NA	19.52	80.25	NA	
	24-May-02	99.77	None Detected	19.49	NA	NA	19.49	80.28	NA	
	7-Jun-02	99.77	None Detected	19.59	NA	NA	19.59	80.18	NA	
	21-Jun-02	99.77	None Detected	19.60	NA	NA	19.60	80.17	NA	
	3-Jul-02	99.77	None Detected	19.63	NA	NA	19.63	80.14	NA	
	18-Jul-02	99.77	None Detected	19.71	NA	NA	19.71	80.06	NA	
	31-Jul-02	99.77	None Detected	19.13	NA	NA	19.13	80.64	NA	
	14-Aug-02	99.77	None Detected	18.02	NA	NA	18.02	81.75	NA	
	28-Aug-02	99.77	None Detected	17.84	NA	NA	17.84	81.93	NA	
	11-Sep-02	99.77	None Detected	18.11	NA	NA	18.11	81.66	NA	
	3-Oct-02	99.77	None Detected	19.16	NA	NA	19.16	80.61	NA	
	18-Oct-02	99.77	None Detected	18.96	NA	NA	18.96	80.81	NA	
	31-Oct-02	99.77	None Detected	19.02	NA	NA	19.02	80.75	NA	

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD ^{2})	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD ^{2})	Volume Water/Product Removed (gal)	NOTES
MW-101	14-Nov-02	99.77	None Detected	19.00	NA	NA	19.00	80.77	NA	
(cont)	27-Nov-02	99.77	None Detected	18.90	NA	NA	18.90	80.87	NA	
	11-Dec-02	99.77	None Detected	18.99	NA	NA	18.99	80.78	NA	
	24-Dec-02	99.77	None Detected	18.83	NA	NA	18.83	80.94	NA	
	30-Dec-02	99.77	None Detected	18.82	NA	NA	18.82	80.95	NA	
	13-Jan-03	99.77	None Detected	18.72	NA	NA	18.72	81.05	NA	
	27-Jan-03	99.77	None Detected	18.84	NA	NA	18.84	80.93	NA	
	18-Apr-03	99.77	None Detected	20.39	NA	NA	20.39	79.38	NA	
	19-May-03	99.77	None Detected	20.31	NA	NA	20.31	79.46	NA	
	13-Jun-03	99.77	None Detected	19.75	NA	NA	19.75	80.02	NA	
	20-Jun-03	99.77	None Detected	19.71	NA	NA	19.71	80.06	NA	
	18-Jul-03	99.77	None Detected	19.79	NA	NA	19.79	79.98	NA	
	22-Aug-03	99.77	None Detected	19.98	NA	NA	19.98	79.79	NA	
	19-Sep-03	99.77	None Detected	20.20	NA	NA	20.20	79.57	NA	
	22-Sep-03	99.77	None Detected	20.19	NA	NA	20.19	79.58	NA	
	21-Oct-03	99.77	None Detected	20.18	NA	NA	20.18	79.59	NA	
	21-Nov-03	99.77	None Detected	20.09	NA	NA	20.09	79.68	NA	
	19-Dec-03	99.77	None Detected	19.92	NA	NA	19.92	79.85	NA	
	9-Jan-04	99.77	None Detected	19.96	NA	NA	19.96	79.81	NA	
	14-Jan-04	99.77	None Detected	19.91	NA	NA	19.91	79.86	NA	
	20-Feb-04	99.77	None Detected	19.92	NA	NA	19.92	79.85	NA	
	19-Mar-04	99.77	None Detected	19.91	NA	NA	19.91	79.86	NA	
	23-Apr-04	99.77	None Detected	20.03	NA	NA	20.03	79.74	NA	
	25-May-04	99.77	None Detected	19.62	NA	NA	19.62	80.15	NA	
	18-Jun-04	99.77	None Detected	19.41	NA	NA	19.41	80.36	NA	
MW-102	5-Dec-96	99.57	NA	NA	NA	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	17-Dec-96	99.57	None Detected	13.23	NA	NA	13.23	86.34	NA	
	12-Mar-97	99.57	None Detected	15.09	NA	NA	15.09	84.48	NA	
	6-Apr-99	99.57	None Detected	15.95	NA	NA	15.95	83.62	NA	
	26-Apr-99	99.57	None Detected	15.63	NA	NA	15.63	83.94	NA	
	2-Mar-00	99.57	None Detected	19.21	NA	NA	19.21	80.36	NA	
	5-Dec-00	99.57	None Detected	19.12	NA	NA	19.12	80.45	NA	
	3-Apr-01	99.56	None Detected	14.48	NA	NA	14.48	85.08	NA	
	27-Sep-01	99.56	None Detected	15.52	NA	NA	15.52	84.04	NA	
	9-Oct-01	99.56	None Detected	17.45	NA	NA	17.45	82.11	NA	
	26-Oct-01	99.56	None Detected	17.71	NA	NA	17.71	81.85	NA	
	8-Nov-01	99.56	None Detected	17.97	NA	NA	17.97	81.59	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-102	20-Nov-01	99.56	None Detected	18.05	NA	NA	18.05	81.51	NA	
(cont)	7-Dec-01	99.56	None Detected	18.14	NA	NA	18.14	81.42	NA	
	21-Dec-01	99.56	None Detected	17.51	NA	NA	17.51	82.05	NA	
	4-Jan-02	99.56	None Detected	18.15	NA	NA	18.15	81.41	NA	
	16-Jan-02	99.56	None Detected	17.78	NA	NA	17.78	81.78	NA	
	30-Jan-02	99.56	None Detected	17.68	NA	NA	17.68	81.88	NA	
	14-Feb-02	99.56	None Detected	17.78	NA	NA	17.78	81.78	NA	
	1-Mar-02	99.56	None Detected	18.37	NA	NA	18.37	81.19	NA	
	15-Mar-02	99.56	None Detected	17.46	NA	NA	17.46	82.10	NA	
	27-Mar-02	99.56	None Detected	13.55	NA	NA	13.55	86.01	NA	
	12-Apr-02	99.56	None Detected	17.74	NA	NA	17.74	81.82	NA	
	26-Apr-02	99.56	None Detected	14.64	NA	NA	14.64	84.92	NA	
	10-May-02	99.56	None Detected	17.08	NA	NA	17.08	82.48	NA	
	24-May-02	99.56	None Detected	16.59	NA	NA	16.59	82.97	NA	
	7-Jun-02	99.56	None Detected	11.15	NA	NA	11.15	88.41	NA	
	21-Jun-02	99.56	None Detected	17.47	NA	NA	17.47	82.09	NA	
	3-Jul-02	99.56	None Detected	17.71	NA	NA	17.71	81.85	NA	
	18-Jul-02	99.56	None Detected	18.31	NA	NA	18.31	81.25	NA	
	31-Jul-02	99.56	None Detected	18.31	NA	NA	18.31	81.25	NA	
	14-Aug-02	99.56	None Detected	17.21	NA	NA	17.21	82.35	NA	
	28-Aug-02	99.56	None Detected	16.91	NA	NA	16.91	82.65	NA	
	11-Sep-02	99.56	None Detected	15.51	NA	NA	15.51	84.05	NA	
	3-Oct-02	99.56	None Detected	17.63	NA	NA	17.63	81.93	NA	
	18-Oct-02	99.56	None Detected	13.33	NA	NA	13.33	86.23	NA	
	31-Oct-02	99.56	None Detected	17.14	NA	NA	17.14	82.42	NA	
	14-Nov-02	99.56	None Detected	14.22	NA	NA	14.22	85.34	NA	
	27-Nov-02	99.56	None Detected	13.91	NA	NA	13.91	85.65	NA	
	11-Dec-02	99.56	None Detected	16.41	NA	NA	16.41	83.15	NA	
	24-Dec-02	99.56	None Detected	15.84	NA	NA	15.84	83.72	NA	
	30-Dec-02	99.56	None Detected	14.28	NA	NA	14.28	85.28	NA	
	13-Jan-03	99.56	None Detected	15.91	NA	NA	15.91	83.65	NA	
	27-Jan-03	99.56	None Detected	15.87	NA	NA	15.87	83.69	NA	
	18-Apr-03	99.56	None Detected	15.57	NA	NA	15.57	83.99	NA	
	19-May-03	99.56	None Detected	17.76	NA	NA	17.76	81.80	NA	
	13-Jun-03	99.56	None Detected	9.14	NA	NA	9.14	90.42	NA	
	20-Jun-03	99.56	None Detected	11.80	NA	NA	11.80	87.76	NA	
	18-Jul-03	99.56	None Detected	17.95	NA	NA	17.95	81.61	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD ^{2})	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD ^{2})	Volume Water/Product Removed (gal)	NOTES
MW-102 (cont)	22-Aug-03	99.56	None Detected	17.40	NA	NA	17.40	82.16	NA	
	19-Sep-03	99.56	None Detected	17.82	NA	NA	17.82	81.74	NA	
	22-Sep-03	99.56	None Detected	18.34	NA	NA	18.34	81.22	NA	
	21-Oct-03	99.56	None Detected	16.97	NA	NA	16.97	82.59	NA	
	21-Nov-03	99.56	None Detected	13.35	NA	NA	13.35	86.21	NA	
	19-Dec-03	99.56	None Detected	13.87	NA	NA	13.87	85.69	NA	
	9-Jan-04	99.56	None Detected	16.48	NA	NA	16.48	83.08	NA	
	14-Jan-04	99.56	None Detected	17.27	NA	NA	17.27	82.29	NA	
	20-Feb-04	99.56	None Detected	17.35	NA	NA	17.35	82.21	NA	
	19-Mar-04	99.56	None Detected	17.28	NA	NA	17.28	82.28	NA	
	23-Apr-04	99.56	None Detected	16.45	NA	NA	16.45	83.11	NA	
	25-May-04	99.56	None Detected	17.04	NA	NA	17.04	82.52	NA	
	18-Jun-04	99.56	None Detected	13.40	NA	NA	13.40	86.16	NA	
MW-103	5-Dec-96	99.49	NA	NA	NA	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	17-Dec-96	99.49	None Detected	13.29	NA	NA	13.29	86.20	NA	
	12-Mar-97	99.49	15.44	15.60	0.16	0.09	15.46	84.03	NPR	Product Sample Collected
	6-Apr-99	99.49	15.72	16.26	0.54	0.32	15.78	83.71	NPR	
	26-Apr-99	99.49	15.40	16.29	0.89	0.53	15.49	84.00	NPR	
	27-Oct-99	99.49	16.43	17.81	1.38	0.81	16.57	82.92	1.0	
	09-Dec-99 [3]	99.49	17.99	18.05	0.06	0.04	18.00	81.49	0.25	Retained water in well sump
	06-Jan-00 [3]	99.49	18.03	18.04	0.01	0.01	18.03	81.46	0.25	Retained water in well sump
	11-Feb-00	99.49	Dry @ 18.05	> 18.05	NA	NA	> 18.05	< 81.44	NA	Product/Water Level below bottom of well
	2-Mar-00	99.49	Dry @ 18.05	> 18.05	NA	NA	> 18.05	< 81.44	NA	Product/Water Level below bottom of well
	30-Mar-00	99.49	Dry @ 18.05	> 18.05	NA	NA	> 18.05	< 81.44	NA	Product/Water Level below bottom of well
	25-Apr-00	99.49	Dry @ 18.05	> 18.05	NA	NA	> 18.05	< 81.44	NA	Product/Water Level below bottom of well
	5-Dec-00	99.49	Dry @ 18.05	> 18.05	NA	NA	> 18.05	< 81.44	NA	Product/Water Level below bottom of well
	3-Apr-01	99.46	*	16.16	NA	NA	16.16	83.30	NA	Sheen on Probe
MW-103A	6-Jun-01	99.46	NA	NA	NA	NA	NA	NA	NA	4-Inch Diameter Replacement Well Constructed
	20-Jun-01	99.46	14.76	17.11	2.35	1.39	15.01	84.45	1.25	Hand Bailed
	28-Jun-01	99.46	14.53	17.90	3.37	1.99	14.88	84.58	7.0	Product Rec Syst set up on 103A
	25-Jul-01	99.46	17.50	18.83	1.33	0.78	17.64	81.82	NPR	Pump Malfunctioning. Removed and Cleaned
	2-Aug-01	99.46	17.26	17.36	0.10	0.06	17.27	82.19	1.5	System working properly
	22-Aug-01	99.46	17.53	17.62	0.09	0.05	17.54	81.92	1.75	System working properly
	4-Sep-01	99.46	17.62	17.76	0.14	0.08	17.63	81.83	1.5	System working properly
	27-Sep-01	99.46	17.14	17.45	0.31	0.18	17.17	82.29	1.0	System working properly
	9-Oct-01	99.46	17.63	18.34	0.71	0.42	17.70	81.76	NPR	Pump module replaced, system up and running
	26-Oct-01	99.46	17.75	17.78	0.03	0.02	17.75	81.71	0.2	System working properly

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-103A	8-Nov-01	99.46	17.76	17.79	0.03	0.02	17.76	81.70	2.5	System working properly
(cont)	20-Nov-01	99.46	18.03	18.12	0.09	0.05	18.04	81.42	0.2	System working properly
	7-Dec-01	99.46	18.80	18.90	0.10	0.06	18.81	80.65	1	System working properly
	21-Dec-01	99.46	18.00	18.10	0.10	0.06	18.01	81.45	0.2	System working properly
	4-Jan-02	99.46	18.00	18.10	0.10	0.06	18.01	81.45	0.2	System working properly
	16-Jan-02	99.46	18.20	18.31	0.11	0.06	18.21	81.25	2.0	System working properly
	30-Jan-02	99.46	18.10	18.22	0.12	0.07	18.11	81.35	0.8	System working properly
	14-Feb-02	99.46	18.12	18.20	0.08	0.05	18.13	81.33	1.4	System working properly
	1-Mar-02	99.46	18.10	18.15	0.05	0.03	18.11	81.35	0.6	System working properly
	15-Mar-02	99.46	17.88	17.93	0.05	0.03	17.89	81.57	1.4	System working properly
	27-Mar-02	99.46	17.75	17.94	0.19	0.11	17.77	81.69	0.2	System working properly
	12-Apr-02	99.46	17.94	18.01	0.07	0.04	17.95	81.51	1.80	System working properly
	26-Apr-02	99.46	17.80	17.85	0.05	0.03	17.81	81.65	-	System working properly
	10-May-02	99.46	17.82	18.01	0.19	0.11	17.84	81.62	1.80	System working properly
	24-May-02	99.46	17.29	17.83	0.54	0.32	17.35	82.11	0.6	Pump off on arrival. GFI interupt had tripped
	7-Jun-02	99.46	17.75	18.48	0.73	0.43	17.83	81.63	1.2	Pump shut down on arrival
	21-Jun-02	99.46	17.89	18.73	0.84	0.50	17.98	81.48	-	Pump shut down on arrival
	3-Jul-02	99.46	17.71	18.13	0.42	0.25	17.75	81.71	1.6	System working properly
	18-Jul-02	99.46	18.26	18.67	0.41	0.24	18.30	81.16	2.6	System working properly
	31-Jul-02	99.46	18.26	18.42	0.16	0.09	18.28	81.18	1.8	System working properly
	14-Aug-02	99.46	17.32	17.35	0.03	0.02	17.32	82.14	0.2	System working properly
	28-Aug-02	99.46	17.16	17.36	0.20	0.12	17.18	82.28	0.6	System working properly
	11-Sep-02	99.46	16.04	16.14	0.10	0.06	16.05	83.41	NPR	System removed for VEFR
	9/12/2002	99.46	16.04	16.14	0.10	0.06	16.05	83.41	20	VEFR Activity
	3-Oct-02	99.46	17.03	17.71	0.68	0.40	17.10	82.36	13	VEFR Activity
	18-Oct-02	99.46	16.76	17.24	0.48	0.28	16.81	82.65	55	VEFR Activity
	31-Oct-02	99.46	16.68	17.05	0.37	0.22	16.72	82.74	72	VEFR Activity
	14-Nov-02	99.46	16.86	17.40	0.54	0.32	16.92	82.54	20	VEFR Activity
	27-Nov-02	99.46	16.54	17.11	0.57	0.34	16.60	82.86	50	VEFR Activity
	11-Dec-02	99.46	16.85	17.40	0.55	0.32	16.91	82.55	20	VEFR Activity
	24-Dec-02	99.46	16.75	17.31	0.56	0.33	16.81	82.65	NPR	VEFR canceled due to storm
	30-Dec-02	99.46	16.65	17.43	0.78	0.46	16.73	82.73	12	VEFR Activity
	13-Jan-03	99.46	16.45	16.95	0.50	0.30	16.50	82.96	24	VEFR Activity
	27-Jan-03	99.46	16.99	17.52	0.53	0.31	17.05	82.41	20	VEFR Activity
	18-Apr-03	99.46	17.57	17.64	0.07	0.04	17.58	81.88	65	VEFR [2] Conducted
	19-May-03	99.46	18.04	18.76	0.72	0.42	18.12	81.34	32	VEFR Conducted
	13-Jun-03	99.46	16.65	17.85	1.20	0.71	16.78	82.68		No VEFR Conducted, Con Ed Transportation had emergency

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-103A (cont)	20-Jun-03	99.46	16.72	18.04	1.32	0.78	16.86	82.60	68	VEFR Conducted
	18-Jul-03	99.46	17.58	18.23	0.65	0.38	17.65	81.81	139	VEFR [2] Conducted
	22-Aug-03	99.46	17.56	18.34	0.78	0.46	17.64	81.82		No VEFR Conducted, Con Ed Transportation had emergency
	19-Sep-03	99.46	18.06	18.99	0.93	0.55	18.16	81.30		VEFR Postponed to Monday September 22, 2003
	22-Sep-03	99.46	18.14	19.11	0.97	0.57	18.24	81.22	78	VEFR Conducted
	21-Oct-03	99.46	18.15	18.73	0.58	0.34	18.21	81.25	14	VEFR [2] Conducted.
	21-Nov-03	99.46	Not Monitored	Not Monitored	NA	NA	NA	NA	NA	Well not monitored, Product-only pump system set up in well.
	19-Dec-03	99.46	17.65	17.70	0.05	0.03	17.66	81.80	NA	No VEFR conducted, product-only pump system working in well.
	9-Jan-04	99.46	17.80	18.00	0.20	0.12	17.82	81.64	-	No VEFR conducted, product-ony system set up in well.
	14-Jan-04	99.46	18.70	18.92	0.22	0.13	18.72	80.74	-	No VEFR Conducted. Wells monitored for pre-Flood Test.
	20-Feb-04	99.46	17.72	18.54	0.82	0.48	17.81	81.65	7.5	VEFR Conducted. Volume estimated from total (30 gals)
	19-Mar-04	99.46	18.38	18.81	0.43	0.25	18.43	81.03	36	VEFR Conducted. Volume estimated from total (180 gals)
	23-Apr-04	99.46	17.75	18.40	0.65	0.38	17.82	81.64	25	VEFR Conducted. Volume estimated from total (100 gal).
	25-May-04	99.46	17.18	18.38	1.20	0.71	17.31	82.15	9	VEFR Conducted. Volume estimated from total (18 gal).
	18-Jun-04	99.46	17.49	18.00	0.51	0.30	17.54	81.92	37	VEFR Conducted.
MW-201	2-Apr-99	99.68	NA	NA	NA	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	6-Apr-99	99.68	15.88	15.88	sheen	NA	15.88	83.80	NPR	
	26-Apr-99	99.68	15.75	16.33	0.58	0.34	15.81	83.87	NPR	Product Sample Collected
	27-Oct-99	99.68	16.31	19.61	3.30	1.95	16.66	83.02	1.5	Hand bailed
	9-Dec-99	99.68	18.08	19.46	1.38	0.81	18.22	81.46	1.0	Hand bailed
	6-Jan-00	99.68	18.55	19.68	1.13	0.67	18.67	81.01	0.5	Hand bailed
	21-Jan-00	99.68	18.31	no water to 23.7 [5]	> 5.4	5.09 +/-	NA	NA	0.4	Skimmer Broken
	11-Feb-00	99.68	18.85	no water to 21.0 [4]	2.15 +/-	1.84 +/-	NA	NA	0.5	Retained water in well sump
	2-Mar-00	99.68	18.60	19.84	1.24	0.73	18.73	80.95	2.0	Hand bailed
	30-Mar-00	99.68	18.65	23.73	5.08	3.00	19.18	80.50	1.0	Hand bailed
	25-Apr-00	99.68	18.23	no water to 23.7 [5]	> 5.4	5.09 +/-	NA	NA	1.0	Product To Well Bottom
	5-Dec-00	99.68	18.76	19.83	1.07	0.63	18.87	80.81	1.0	Hand bailed
	3-Apr-01	99.67	16.17	19.45	3.28	1.94	16.51	83.16	NPR	
	7-May-01									Product Rec Syst set up on MW-201
	17-May-01	99.67	15.48	15.53	0.05	0.03	15.49	84.18	4.0	Product Rec Syst removed to MW-203
	6-Jun-01	99.67	14.77	15.51	0.74	0.44	14.85	84.82	NPR	
	20-Jun-01	99.67	14.66	15.83	1.17	0.69	14.78	84.89	0.5	Hand bailed
	28-Jun-01	99.67	14.51	15.30	0.79	0.47	14.59	85.08	NPR	
	2-Aug-01	99.67	16.42	18.56	2.14	1.26	16.64	83.03	NPR	
	22-Aug-01	99.67	16.73	19.13	2.40	1.42	16.98	82.69	1.0	Hand bailed
	4-Sep-01	99.67	16.67	17.22	0.55	0.32	16.73	82.94	NPR	
	27-Sep-01	99.67	16.41	18.91	2.50	1.48	16.67	83.00	1.0	Hand bailed

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD ^{2})	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD ^{2})	Volume Water/Product Removed (gal)	NOTES
MW-201	9-Oct-01	99.67	16.91	18.54	1.63	0.96	17.08	82.59	0.5	Hand bailed
(cont)	26-Oct-01	99.67	17.10	18.34	1.24	0.73	17.23	82.44	0.25	Hand bailed
	8-Nov-01	99.67	17.54	17.90	0.36	0.21	17.58	82.09	trace	Hand bailed
	20-Nov-01	99.67	17.59	18.01	0.42	0.25	17.63	82.04	trace	Hand bailed
	7-Dec-01	99.67	17.70	18.32	0.62	0.37	17.77	81.90	trace	Hand bailed
	21-Dec-01	99.67	17.79	18.50	0.71	0.42	17.86	81.81	NPR	
	4-Jan-02	99.67	17.81	18.93	1.12	0.66	17.93	81.74	0.25	Hand bailed
	16-Jan-02	99.67	17.73	18.10	0.37	0.22	17.77	81.90	0.25	Hand bailed
	30-Jan-02	99.67	17.56	19.18	1.62	0.96	17.73	81.94	0.5	Hand bailed
	14-Feb-02	99.67	17.63	19.46	1.83	1.08	17.82	81.85	1.0	Hand bailed
	1-Mar-02	99.67	17.92	19.60	1.68	0.99	18.10	81.57	0.5	Hand bailed
	15-Mar-02	99.67	17.36	19.49	2.13	1.26	17.58	82.09	0.75	Hand bailed
	27-Mar-02	99.67	17.01	19.58	2.57	1.52	17.28	82.39	0.75	Hand bailed
	12-Apr-02	99.67	17.00	19.78	2.78	1.64	17.29	82.38	1.00	Hand bailed
	26-Apr-02	99.67	17.33	19.61	2.28	1.35	17.57	82.10	1.00	Hand bailed
	10-May-02	99.67	16.96	19.52	2.56	1.51	17.23	82.44	1.00	Hand bailed
	24-May-02	99.67	16.92	19.38	2.46	1.45	17.18	82.49	NPR	
	7-Jun-02	99.67	16.92	19.52	2.60	1.53	17.19	82.48	0.75	Hand bailed
	21-Jun-02	99.67	17.11	19.33	2.22	1.31	17.34	82.33	0.5	Hand bailed
	3-Jul-02	99.67	17.06	19.34	2.28	1.35	17.30	82.37	1	Hand bailed
	18-Jul-02	99.67	17.51	19.11	1.60	0.94	17.68	81.99	1	Hand bailed
	31-Jul-02	99.67	17.64	18.88	1.24	0.73	17.77	81.90	1	Hand bailed
	14-Aug-02	99.67	16.76	18.11	1.35	0.80	16.90	82.77	1	Hand bailed
	28-Aug-02	99.67	16.56	17.61	1.05	0.62	16.67	83.00	1	Hand bailed
	11-Sep-02	99.67	15.23	16.60	1.37	0.81	15.37	84.30	NPR	
	9/12/2002	99.67	15.23	16.60	1.37	0.81	15.37	84.30	42	VEFR Activity
	3-Oct-02	99.67	16.56	17.45	0.89	0.53	16.65	83.02	25	VEFR Activity
	18-Oct-02	99.67	16.19	17.21	1.02	0.60	16.30	83.37	40	VEFR Activity
	31-Oct-02	99.67	16.34	17.18	0.84	0.50	16.43	83.24	46	VEFR Activity
	14-Nov-02	99.67	16.50	17.34	0.84	0.50	16.59	83.08	65	VEFR Activity
	27-Nov-02	99.67	16.15	17.13	0.98	0.58	16.25	83.42	22	VEFR Activity
	11-Dec-02	99.67	16.60	17.25	0.65	0.38	16.67	83.00	5	VEFR Activity
	24-Dec-02	99.67	16.49	17.41	0.92	0.54	16.59	83.08	NPR	VEFR canceled due to storm
	30-Dec-02	99.67	16.40	17.68	1.28	0.76	16.53	83.14	20	VEFR Activity
	13-Jan-03	99.67	16.05	17.46	1.41	0.83	16.20	83.47	6	VEFR Activity
	27-Jan-03	99.67	16.86	17.49	0.63	0.37	16.93	82.74	20	VEFR Activity
	18-Apr-03	99.67	17.05	19.80	2.75	1.62	17.34	82.33	15	VEFR Conducted

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-201 (cont)	19-May-03	99.67	17.68	19.04	1.36	0.80	17.82	81.85	33	VEFR Conducted
	13-Jun-03	99.67	16.23	16.52	0.29	0.17	16.26	83.41	NA	No VEFR Conducted, Con Ed Transportation had emergency
	20-Jun-03	99.67	16.13	16.13	sheen	sheen	16.13	83.54	5	VEFR Conducted
	18-Jul-03	99.67	17.11	18.24	1.13	0.67	17.23	82.44	46	VEFR Conducted
	22-Aug-03	99.67	16.79	19.31	2.52	1.49	17.05	82.62	NA	No VEFR Conducted, Con Ed Transportation had emergency
	19-Sep-03	99.67	17.46	19.58	2.12	1.25	17.68	81.99	NA	VEFR Postponed to Monday September 22, 2003
	22-Sep-03	99.67	17.59	19.62	2.03	1.20	17.80	81.87	15	VEFR Conducted
MW-201A	16-Oct-03	99.68	NM	NA	NA	NA	NA	NA	NA	6-Inch Diameter Replacement Well Constructed
	21-Oct-03	99.68	None Detected	17.55	NA	NA	17.55	82.13	15	VEFR Conducted.
	21-Nov-03	99.68	None Detected	17.22	NA	NA	17.22	82.46	NA	No VEFR Conducted, no product detected in well.
	19-Dec-03	99.68	None Detected	16.78	NA	NA	16.78	82.90	NA	No VEFR Conducted, no product detected in well.
	9-Jan-04	99.68	None Detected	17.08	NA	NA	17.08	82.60	-	No VEFR conducted, no measurable product.
	14-Jan-04	99.68	None Detected	17.23	NA	NA	17.23	82.45	-	No VEFR Conducted. Wells monitored for pre-Flood Test.
	20-Feb-04	99.68	17.30	17.31	0.01	0.01	17.30	82.38	7.5	VEFR Conducted. Volume estimated from total (30 gals)
	19-Mar-04	99.68	17.71	17.76	0.05	0.03	17.72	81.96	36	VEFR Conducted. Volume estimated from total (180 gals)
	23-Apr-04	99.68	17.09	17.10	0.01	0.01	17.09	82.59	25	VEFR Conducted. Volume estimated from total (100 gal).
	25-May-04	99.68	None Detected	16.77	NA	NA	16.77	82.91	NA	No VEFR Conducted, no product detected in well.
	18-Jun-04	99.68	16.90	16.90	sheen	sheen	16.13	83.55	15	VEFR Conducted.
MW-202	31-Mar-99	99.30	NM	NM	NA	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	6-Apr-99	99.30	None Detected	15.74	NA	NA	15.74	83.56	NPR	
	26-Apr-99	99.30	15.71	15.74	0.03	0.02	15.71	83.59	NPR	Product Sample Collected
	27-Oct-99	99.30	16.20	17.98	1.78	1.05	16.39	82.91	1.0	Hand bailed
	9-Dec-99	99.30	17.90	20.13	2.23	1.32	18.13	81.17	0.5	Hand bailed
	6-Jan-00	99.30	18.38	19.22	0.84	0.50	18.47	80.83	0.5	Hand bailed
	21-Jan-00	99.30	18.27	19.61	1.34	0.79	18.41	80.89	1.0	Hand bailed
	11-Feb-00	99.30	18.51	20.17	1.66	0.98	18.68	80.62	0.5	Hand bailed
	2-Mar-00	99.30	18.52	19.93	1.41	0.83	18.67	80.63	1.0	Hand bailed
	30-Mar-00	99.30	18.60	19.77	1.17	0.69	18.72	80.58	0.5	Hand bailed
	25-Apr-00	99.30	18.44	18.83	0.39	0.23	18.48	80.82	1.0	Hand bailed
	5-Dec-00	99.30	18.67	19.99	1.32	0.78	18.81	80.49	1.0	Hand bailed
	3-Apr-01	99.24	16.55	17.11	0.56	0.33	16.61	82.63	NPR	
	6-Jun-01	99.24	14.68	16.31	1.63	0.96	14.85	84.39	NPR	
	20-Jun-01	99.24	14.66	16.00	1.34	0.79	14.80	84.44	0.5	Hand bailed
	28-Jun-01	99.24	14.48	15.71	1.23	0.73	14.61	84.63	NPR	
	2-Aug-01	99.24	16.21	18.22	2.01	1.19	16.42	82.82	NPR	
	22-Aug-01	99.24	16.54	18.23	1.69	1.00	16.72	82.52	0.5	Hand bailed
	4-Sep-01	99.24	16.64	18.42	1.78	1.05	16.83	82.41	NPR	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-202	27-Sep-01	99.24	16.45	17.27	0.82	0.48	16.54	82.70	0.5	Hand bailed
(cont)	9-Oct-01	99.24	16.72	17.77	1.05	0.62	16.83	82.41	0.25	Hand bailed
	26-Oct-01	99.24	17.75	18.20	0.45	0.27	17.80	81.44	0.25	Hand bailed
	8-Nov-01	99.24	17.03	19.04	2.01	1.19	17.24	82.00	trace	Hand bailed
	20-Nov-01	99.24	17.07	19.31	2.24	1.32	17.31	81.93	0.5	Hand bailed
	7-Dec-01	99.24	17.18	19.38	2.20	1.30	17.41	81.83	0.5	Hand bailed
	21-Dec-01	99.24	17.30	19.20	1.90	1.12	17.50	81.74	0.5	Hand bailed
	4-Jan-02	99.24	17.37	19.45	2.08	1.23	17.59	81.65	0.5	Hand bailed
	16-Jan-02	99.24	17.36	19.33	1.97	1.16	17.57	81.67	0.5	Hand bailed
	30-Jan-02	99.24	17.28	19.11	1.83	1.08	17.47	81.77	0.5	Hand bailed
	14-Feb-02	99.24	17.37	19.27	1.90	1.12	17.57	81.67	1.0	Hand bailed
	1-Mar-02	99.24	17.55	19.60	2.05	1.21	17.77	81.47	0.5	Hand bailed
	15-Mar-02	99.24	17.23	18.59	1.36	0.80	17.37	81.87	0.5	Hand bailed
	27-Mar-02	99.24	17.00	17.09	0.09	0.05	17.01	82.23	trace	Hand bailed
	12-Apr-02	99.24	17.21	18.51	1.30	0.77	17.35	81.89	0.75	Hand bailed
	26-Apr-02	99.24	17.38	17.60	0.22	0.13	17.40	81.84	0.5	Hand bailed
	10-May-02	99.24	17.05	18.88	1.83	1.08	17.24	82.00	0.5	Hand bailed
	24-May-02	99.24	16.78	17.37	0.59	0.35	16.84	82.40	NPR	
	7-Jun-02	99.24	16.94	17.10	0.16	0.09	16.96	82.28	trace	Hand bailed
	21-Jun-02	99.24	17.11	17.85	0.74	0.44	17.19	82.05	0.1	Hand bailed
	3-Jul-02	99.24	17.11	18.19	1.08	0.64	17.22	82.02	0.5	Hand bailed
	18-Jul-02	99.24	17.31	18.60	1.29	0.76	17.45	81.79	0.8	Hand bailed
	31-Jul-02	99.24	17.41	19.23	1.82	1.07	17.60	81.64	1.3	Hand bailed
	14-Aug-02	99.24	16.58	16.94	0.36	0.21	16.62	82.62	0.8	Hand bailed
	28-Aug-02	99.24	16.36	17.41	1.05	0.62	16.47	82.77	0.8	Hand bailed
	11-Sep-02	99.24	15.39	16.04	0.65	0.38	15.46	83.78	NPR	
	9/12/2002	99.24	15.39	16.04	0.65	0.38	15.46	83.78	13	VEFR Activity
	3-Oct-02	99.24	16.51	17.69	1.18	0.70	16.63	82.61	13	VEFR Activity
	18-Oct-02	99.24	15.99	16.52	0.53	0.31	16.05	83.19	27	VEFR Activity
	31-Oct-02	99.24	16.15	16.81	0.66	0.39	16.22	83.02	33	VEFR Activity
	14-Nov-02	99.24	16.35	17.31	0.96	0.57	16.45	82.79	50	VEFR Activity
	27-Nov-02	99.24	16.00	16.44	0.44	0.26	16.05	83.19	10	VEFR Activity
	11-Dec-02	99.24	16.29	18.20	1.91	1.13	16.49	82.75	5	VEFR Activity
	24-Dec-02	99.24	16.21	17.69	1.48	0.87	16.37	82.87	NPR	VEFR canceled due to storm
	30-Dec-02	99.24	16.17	17.09	0.92	0.54	16.27	82.97	30	VEFR Activity
	13-Jan-03	99.24	15.98	16.75	0.77	0.45	16.06	83.18	5	VEFR Activity
	27-Jan-03	99.24	16.42	18.20	1.78	1.05	16.61	82.63	10	VEFR Activity

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-202	18-Apr-03	99.24	17.04	17.08	0.04	0.02	17.04	82.20	5	VEFR Conducted
(cont)	19-May-03	99.24	17.46	19.39	1.93	1.14	17.66	81.58	26	VEFR Conducted
	13-Jun-03	99.24	16.20	16.61	0.41	0.24	16.24	83.00	NPR	No VEFR Conducted, Con Ed Transportation had emergency
	20-Jun-03	99.24	16.12	16.75	0.63	0.37	16.19	83.05	5	VEFR Conducted
	18-Jul-03	99.24	16.95	18.59	1.64	0.97	17.12	82.12	8	VEFR Conducted
	22-Aug-03	99.24	16.89	17.58	0.69	0.41	16.96	82.28	NPR	No VEFR Conducted, Con Ed Transportation had emergency
	19-Sep-03	99.24	17.40	19.60	2.20	1.30	17.63	81.61	NPR	VEFR Postponed to Monday September 22, 2003
	22-Sep-03	99.24	17.51	19.76	2.25	1.33	17.75	81.49	5	VEFR Conducted
	21-Oct-03	99.24	17.48	19.55	2.07	1.22	17.70	81.54	7	VEFR Conducted.
	21-Nov-03	99.24	17.21	17.90	0.69	0.41	17.28	81.96	15	VEFR Conducted.
	19-Dec-03	99.24	16.75	17.20	0.45	0.27	16.80	82.44	5	VEFR Conducted.
	9-Jan-04	99.24	17.15	17.55	0.40	0.24	17.19	82.05	1.5	VEFR Conducted. Volume estimated from total (14 gal).
	14-Jan-04	99.24	17.20	17.40	0.20	0.12	17.22	82.02	-	No VEFR Conducted. Wells monitored for pre-Flood Test.
	20-Feb-04	99.24	17.20	18.80	1.60	0.94	17.37	81.87	7.5	VEFR Conducted. Volume estimated from total (30 gals)
	19-Mar-04	99.24	17.65	18.71	1.06	0.63	17.76	81.48	36	VEFR Conducted. Volume estimated from total (180 gals)
	23-Apr-04	99.24	17.10	17.32	0.22	0.13	17.12	82.12	25	VEFR Conducted. Volume estimated from total (100 gal).
	25-May-04	99.24	16.79	17.49	0.70	0.41	16.86	82.38	6	VEFR Conducted. Volume estimated from total (18 gal).
	18-Jun-04	99.24	16.91	17.91	1.00	0.59	17.02	82.22	7	VEFR Conducted.
MW-203	2-Apr-99	99.79	NM	NM	NA	NA	NA	NA	NA	2-Inch Diameter Monitoring Well Constructed
	6-Apr-99	99.79	15.79	16.29	0.50	0.30	15.84	83.95	NPR	
	26-Apr-99	99.79	15.82	17.59	1.77	1.04	16.01	83.78	NPR	Product Sample Collected
	27-Oct-99	99.79	16.15	22.21	6.06	3.58	16.79	83.00	2.0	Hand bailed
	9-Dec-99	99.79	17.79	21.33	3.54	2.09	18.16	81.63	1.5	Hand bailed
	6-Jan-00	99.79	18.33	20.54	2.21	1.30	18.56	81.23	1.5	Hand bailed
	21-Jan-00	99.79	18.39	19.89	1.50	0.89	18.55	81.24	1.0	Hand bailed
	11-Feb-00	99.79	18.70	19.78	1.08	0.64	18.81	80.98	1.0	Hand bailed
	2-Mar-00	99.79	18.77	20.02	1.25	0.74	18.90	80.89	1.0	Hand bailed
	30-Mar-00	99.79	18.65	20.69	2.04	1.20	18.86	80.93	1.0	Hand bailed
	25-Apr-00	99.79	18.52	no water to 23.7 [5]	> 5.2	4.89 +/-	NA	NA	1.0	Hand bailed
	5-Dec-00	99.79	18.90	21.26	2.36	1.39	19.15	80.64	1.0	Hand bailed
	3-Apr-01	99.71	15.87	20.95	5.08	3.00	16.40	83.31	NPR	
	17-May-01	99.71	14.69	21.90	7.21	4.25	15.45	84.26	4.0	Product Rec Syst set up on MW-203
	31-May-01	99.71	14.97	15.59	0.62	0.37	15.04	84.67	4.5	System working properly
	6-Jun-01	99.71	NM	NM	NM	NM	NM	NM	NA	Elec. To system vandalized
	20-Jun-01	99.71	17.09	17.89	0.80	0.47	17.17	82.54	NPR	
	28-Jun-01	99.71	14.37	14.43	0.06	0.04	14.38	85.33	NPR	Product Rec Syst removed to MW-103A
	2-Aug-01	99.71	16.31	17.05	0.74	0.44	16.39	83.32	NPR	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-203	22-Aug-01	99.71	16.59	17.26	0.67	0.40	16.66	83.05	0.5	Hand bailed
(cont)	4-Sep-01	99.71	16.92	17.25	0.33	0.19	16.95	82.76	NPR	
	27-Sep-01	99.71	16.16	17.15	0.99	0.58	16.26	83.45	0.5	Hand bailed
	9-Oct-01	99.71	16.59	17.21	0.62	0.37	16.66	83.05	0.25	Hand bailed
	26-Oct-01	99.71	16.71	17.26	0.55	0.32	16.77	82.94	0.25	Hand bailed
	8-Nov-01	99.71	17.03	17.22	0.19	0.11	17.05	82.66	trace	Hand bailed
	20-Nov-01	99.71	17.13	17.31	0.18	0.11	17.15	82.56	NPR	
	7-Dec-01	99.71	17.23	17.55	0.32	0.19	17.26	82.45	trace	Hand bailed
	21-Dec-01	99.71	17.30	17.60	0.30	0.18	17.33	82.38	NPR	
	4-Jan-02	99.71	17.30	17.60	0.30	0.18	17.33	82.38	trace	Hand bailed
	16-Jan-02	99.71	17.12	17.38	0.26	0.15	17.15	82.56	0.1	Hand bailed
	30-Jan-02	99.71	16.98	17.19	0.21	0.12	17.00	82.71	trace	Hand bailed
	14-Feb-02	99.71	17.02	17.26	0.24	0.14	17.05	82.66	trace	Hand bailed
	1-Mar-02	99.71	17.20	17.55	0.35	0.21	17.24	82.47	trace	Hand bailed
	15-Mar-02	99.71	16.55	16.92	0.37	0.22	16.59	83.12	0.25	Hand bailed
	27-Mar-02	99.71	15.71	15.89	0.18	0.11	15.73	83.98	trace	Hand bailed
	12-Apr-02	99.71	16.39	16.87	0.48	0.28	16.44	83.27	trace	Hand bailed
	26-Apr-02	99.71	16.35	16.80	0.45	0.27	16.40	83.31	0.15	Hand bailed
	10-May-02	99.71	15.98	17.02	1.04	0.61	16.09	83.62	0.25	Hand bailed
	24-May-02	99.71	15.31	17.05	1.74	1.03	15.49	84.22	NPR	
	7-Jun-02	99.71	14.25	16.82	2.57	1.52	14.52	85.19	0.75	Hand bailed
	21-Jun-02	99.71	15.92	17.40	1.48	0.87	16.08	83.63	0.25	Hand bailed
	3-Jul-02	99.71	16.03	17.22	1.19	0.70	16.15	83.56	0.5	Hand bailed
	18-Jul-02	99.71	16.52	16.58	0.06	0.04	16.53	83.18	0.25	Hand bailed
	31-Jul-02	99.71	16.81	17.56	0.75	0.44	16.89	82.82	0.33	Hand bailed
	14-Aug-02	99.71	16.13	16.19	0.06	0.04	16.14	83.57	0.25	Hand bailed
	28-Aug-02	99.71	16.21	17.02	0.81	0.48	16.30	83.41	0.66	Hand bailed
	11-Sep-02	99.71	15.13	16.86	1.73	1.02	15.31	84.40	NPR	
	12-Sep-02	99.71	15.13	16.86	1.73	1.02	15.31	84.40	20	VEFR Activity
	3-Oct-02	99.71	15.87	17.36	1.49	0.88	16.03	83.68	14	VEFR Activity
	18-Oct-02	99.71	14.97	17.00	2.03	1.20	15.18	84.53	18	VEFR Activity
	31-Oct-02	99.71	16.02	17.15	1.13	0.67	16.14	83.57	21	VEFR Activity
	14-Nov-02	99.71	16.68	18.00	1.32	0.78	16.82	82.89	25	VEFR Activity
	27-Nov-02	99.71	16.39	17.70	1.31	0.77	16.53	83.18	18	VEFR Activity
	11-Dec-02	99.71	16.75	17.40	0.65	0.38	16.82	82.89	15	VEFR Activity
	24-Dec-02	99.71	16.62	18.96	2.34	1.38	16.87	82.84	NPR	VEFR canceled due to storm
	30-Dec-02	99.71	16.50	18.14	1.64	0.97	16.67	83.04	33	VEFR Activity

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-203	13-Jan-03	99.71	16.30	17.20	0.90	0.53	16.39	83.32	10	VEFR Activity
(cont)	27-Jan-03	99.71	17.02	17.80	0.78	0.46	17.10	82.61	10	VEFR Activity
	18-Apr-03	99.71	17.33	17.35	0.02	0.01	17.33	82.38	15	VEFR Conducted
	19-May-03	99.71	18.01	18.78	0.77	0.45	18.09	81.62	9	VEFR Conducted
	13-Jun-03	99.71	16.25	20.30	4.05	2.39	16.68	83.03	NPR	No VEFR Conducted, Con Ed Transportation had emergency
	20-Jun-03	99.71	16.38	18.05	1.67	0.99	16.56	83.15	25	VEFR Conducted
	18-Jul-03	99.71	17.47	18.46	0.99	0.58	17.57	82.14	5	VEFR Conducted
	22-Aug-03	99.71	17.23	18.03	0.80	0.47	17.31	82.40	NPR	No VEFR Conducted, Con Ed Transportation had emergency
	19-Sep-03	99.71	17.79	18.77	0.98	0.58	17.89	81.82	NPR	VEFR Postponed to Monday September 22, 2003
	22-Sep-03	99.71	17.90	18.82	0.92	0.54	18.00	81.71	2	VEFR Conducted
MW-203A	17-Oct-03	99.84	NA	NA	NA	NA	NA	NA	NA	6-Inch Diameter Replacement Well Constructed
	21-Oct-03	99.84	None Detected	16.48	NA	NA	16.48	83.36	27	VEFR Conducted.
	21-Nov-03	99.84	None Detected	15.41	NA	NA	15.41	84.43	NPR	No VEFR Conducted, no product detected in well.
	19-Dec-03	99.84	14.52	14.52	sheen	NA	14.52	85.32	NPR	No VEFR Conducted, no product detected in well.
	9-Jan-04	99.84	15.34	15.34	sheen	NA	15.34	84.50	1.5	VEFR Conducted. Volume estimated from total (14 gal).
	14-Jan-04	99.84	None Detected	15.69	NA	NA	15.69	84.15	-	No VEFR Conducted. Wells monitored for pre-Flood Test.
	20-Feb-04	99.84	None Detected	17.70	NA	NA	17.70	82.14	-	No VEFR conducted, no measurable product.
	19-Mar-04	99.84	17.61	17.68	0.07	0.04	17.62	82.22	36	VEFR Conducted. Volume estimated from total (180 gals)
	23-Apr-04	99.84	None Detected	15.62	NA	NA	15.62	84.22	-	No VEFR conducted, no measurable product.
	25-May-04	99.84	None Detected	15.54	NA	NA	15.54	84.30	-	No VEFR conducted, no measurable product.
	18-Jun-04	99.84	None Detected	15.78	NA	NA	15.78	84.06	-	No VEFR conducted, no measurable product.
MW-301	8-Jan-01	99.50	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	99.50	None Detected	15.07	NA	NA	15.07	84.43	NA	
	1-Feb-01	99.50	None Detected	13.02	NA	NA	13.02	86.48	NA	
	3-Apr-01	99.50	None Detected	12.08	NA	NA	12.08	87.42	NA	
	27-Sep-01	99.50	None Detected	13.19	NA	NA	13.19	86.31	NA	
	9-Oct-01	99.50	14.90	15.02	0.12	0.07	14.91	84.59	NPR	Presence of oil called in to Mark Warrell
	26-Oct-01	99.50	15.30	15.63	0.33	0.19	15.33	84.17	NPR	Placed Soakease in well
	8-Nov-01	99.50	15.75	15.77	0.02	0.01	15.75	83.75	trace	Replaced Soakease in well
	20-Nov-01	99.50	None Detected	15.86	NA	NA	15.86	83.64	NA	Soakease removed from MW-301
	7-Dec-01	99.50	15.79	16.11	0.32	0.19	15.82	83.68	NPR	
	21-Dec-01	99.50	None Detected	14.87	NA	NA	14.87	84.63	NA	
	4-Jan-02	99.50	15.50	15.68	0.18	0.11	15.52	83.98	trace	Soakease placed in MW-301
	16-Jan-02	99.50	15.15	15.26	0.11	0.06	15.16	84.34	NPR	Re-placed Soakease in well with skimmer
	30-Jan-02	99.50	14.88	15.00	0.12	0.07	14.89	84.61	trace	Hand bailed
	14-Feb-02	99.50	15.27	15.42	0.15	0.09	15.29	84.21	trace	Hand bailed
	1-Mar-02	99.50	16.60	16.86	0.26	0.15	16.63	82.87	NPR	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD 2)	Measured Depth To Product (ft TOPVC) 1	Measured Depth To Water (ft TOPVC) 1	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD 2)	Volume Water/Product Removed (gal)	NOTES
MW-301 (cont)	15-Mar-02	99.50	14.76	14.88	0.12	0.07	14.77	84.73	NPR	
	27-Mar-02	99.50	12.67	12.78	0.11	0.06	12.68	86.82	trace	Hand bailed
	12-Apr-02	99.50	14.84	15.03	0.19	0.11	14.86	84.64	trace	Hand bailed
	26-Apr-02	99.50	13.71	13.98	0.27	0.16	13.74	85.76	trace	Hand bailed
	10-May-02	99.50	14.24	14.60	0.36	0.21	14.28	85.22	trace	Hand bailed
	24-May-02	99.50	13.47	13.71	0.24	0.14	13.50	86.00	NPR	
	7-Jun-02	99.50	12.41	12.59	0.18	0.11	12.43	87.07	trace	Hand bailed
	21-Jun-02	99.50	14.56	14.91	0.35	0.21	14.60	84.90	trace	Hand bailed
	3-Jul-02	99.50	14.86	15.13	0.27	0.16	14.89	84.61	trace	Hand bailed
	18-Jul-02	99.50	15.64	15.99	0.35	0.21	15.68	83.82	trace	Hand bailed
	31-Jul-02	99.50	15.72	16.14	0.42	0.25	15.76	83.74	0.15	Hand bailed
	14-Aug-02	99.50	15.14	15.25	0.11	0.06	15.15	84.35	0.15	Hand bailed
	28-Aug-02	99.50	15.04	15.24	0.20	0.12	15.06	84.44	0.15	Hand bailed
	11-Sep-02	99.50	12.87	13.26	0.39	0.23	12.91	86.59	NPR	
	9/12/2002	99.50	12.87	13.26	0.39	0.23	12.91	86.59	0.25	Hand bailed
	3-Oct-02	99.50	13.26	13.61	0.35	0.21	13.30	86.20	0.25	Hand bailed
	18-Oct-02	99.50	11.74	12.55	0.81	0.48	11.83	87.67	0.12	Hand bailed
	31-Oct-02	99.50	12.97	13.42	0.45	0.27	13.02	86.48	0.12	Hand bailed
	14-Nov-02	99.50	12.45	12.85	0.40	0.24	12.49	87.01	0.13	Hand bailed
	27-Nov-02	99.50	Oil on Probe	13.13	NA	NA	13.13	86.37	0.13	Hand bailed
	11-Dec-02	99.50	13.95	14.10	0.15	0.09	13.97	85.53	0.13	Hand bailed
	24-Dec-02	99.50	13.20	13.42	0.22	0.13	13.22	86.28	NPR	
	30-Dec-02	99.50	12.79	13.02	0.23	0.14	12.81	86.69	trace	Hand bailed
	13-Jan-03	99.50	13.22	13.40	0.18	0.11	13.24	86.26	trace	Hand bailed
	27-Jan-03	99.50	13.41	13.60	0.19	0.11	13.43	86.07	trace	Hand bailed
	18-Apr-03	99.50	None Detected	14.41	NA	NA	14.41	85.09	trace	Bailed trace amount
	19-May-03	99.50	13.90	13.96	0.06	0.04	13.91	85.59	trace	Bailed 8 ounces +/-
	13-Jun-03	99.50	16.43	16.70	0.27	0.16	16.46	83.04	trace	Bailed 8 ounces +/-
	20-Jun-03	99.50	14.41	14.50	0.09	0.05	14.42	85.08	trace	Bailed 8 ounces +/-
	18-Jul-03	99.50	14.86	15.15	0.29	0.17	14.89	84.61	0.25	Bailed 0.25 gallons
	22-Aug-03	99.50	14.17	14.53	0.36	0.21	14.21	85.29	trace	Bailed trace amount
	19-Sep-03	99.50	15.35	15.61	0.26	0.15	15.38	84.12	0.5	Bailed 0.5 gallon
	22-Sep-03	99.50	15.61	15.61	sheen	NA	15.61	83.89	NPR	
	21-Oct-03	99.50	16.00	16.19	0.19	0.11	16.02	83.48	trace	Bailed trace amount.
	21-Nov-03	99.50	None Detected	13.03	NA	NA	13.03	86.47	0.25	Replaced spent Soakease (TM) with new one.
	19-Dec-03	99.50	13.00	13.00	sheen	NA	13.00	86.50	0.25	Replaced spent Soakease (TM) with new one.
	9-Jan-04	99.50	14.15	14.15	sheen	NA	14.15	85.35	0.25	Replaced Soakease
	14-Jan-04	99.50	None Detected	14.25	NA	NA	14.25	85.25	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-301	20-Feb-04	99.50	14.56	14.57	0.01	0.01	14.56	84.94	NA	Inspected/returned soakease
(cont)	19-Mar-04	99.50	None Detected	12.76	NA	NA	12.76	86.74	NA	Inspected/returned soakease
	23-Apr-04	99.50	13.75	13.75	sheen	NA	13.75	85.75	trace	bailed trace amount
	25-May-04	99.50	None Detected	14.16	NA	NA	14.16	85.34	NA	
	18-Jun-04	99.50	14.75	14.76	0.01	0.01	14.75	84.75	trace	bailed trace amount
MW-302	14-Sep-00	99.22	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	5-Dec-00	99.22	13.56	13.70	0.14	0.08	13.57	85.65	NPR	
	3-Apr-01	99.15	None Detected	8.82	NA	NA	8.82	90.33	NA	
	20-Jun-01	99.15	None Detected	9.62	NA	NA	9.62	89.53	NA	
	22-Aug-01	99.15	13.09	13.12	0.03	0.02	13.09	86.06	NPR	
	4-Sep-01	99.15	13.41	13.44	0.03	0.02	13.41	85.74	NPR	
	27-Sep-01	99.15	10.1	10.11	0.01	0.01	10.10	89.05	NPR	
	9-Oct-01	99.15	None Detected	12.71	NA	NA	12.71	86.44	NA	
	26-Oct-01	99.15	None Detected	13.46	NA	NA	13.46	85.69	NA	
	8-Nov-01	99.15	14.28	14.30	0.02	0.01	14.28	84.87	NPR	
	20-Nov-01	99.15	14.03	14.04	0.01	0.01	14.03	85.12	NPR	
	7-Dec-01	99.15	14.16	14.21	0.05	0.03	14.17	84.98	NPR	
	21-Dec-01	99.15	None Detected	12.75	NA	NA	12.75	86.40	NA	
	4-Jan-02	99.15	13.64	13.66	0.02	0.01	13.64	85.51	NPR	
	16-Jan-02	99.15	13.29	13.30	0.01	0.01	13.29	85.86	trace	0.01 ft of product in skimmer
	30-Jan-02	99.15	13.03	13.04	0.01	0.01	13.03	86.12	trace	0.01 ft of product in skimmer
	14-Feb-02	99.15	None Detected	13.54	NA	NA	13.54	85.61	NA	0.01 ft of product in skimmer
	1-Mar-02	99.15	14.20	14.25	0.05	0.03	14.21	84.94	NPR	
	15-Mar-02	99.15	12.89	12.91	0.02	0.01	12.89	86.26	trace	0.2 ft product in skimmer
	27-Mar-02	99.15	7.06	7.07	0.01	0.01	7.06	92.09	trace	0.01 ft product in skimmer
	12-Apr-02	99.15	None Detected	13.04	NA	NA	13.04	86.11	NA	
	26-Apr-02	99.15	None Detected	9.20	NA	NA	9.20	89.95	NA	
	10-May-02	99.15	12.44	12.44	0.00	0.00	12.44	86.71	trace	0.01 ft product in skimmer
	24-May-02	99.15	None Detected	11.25	NA	NA	11.25	87.90	NA	
	7-Jun-02	99.15	5.97	5.97	0.00	0.00	5.97	93.18	NPR	Well seal damaged/replaced
	21-Jun-02	99.15	None Detected	12.41	NA	NA	12.41	86.74	NA	
	3-Jul-02	99.15	None Detected	12.93	NA	NA	12.93	86.22	NA	
	18-Jul-02	99.15	None Detected	13.93	NA	NA	13.93	85.22	NA	
	31-Jul-02	99.15	None Detected	13.82	NA	NA	13.82	85.33	NA	
	14-Aug-02	99.15	None Detected	13.58	NA	NA	13.58	85.57	NA	
	28-Aug-02	99.15	None Detected	13.32	NA	NA	13.32	85.83	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-302	11-Sep-02	99.15	None Detected	11.26	NA	NA	11.26	87.89	NA	
(cont)	3-Oct-02	99.15	None Detected	11.31	NA	NA	11.31	87.84	NA	
	18-Oct-02	99.15	None Detected	7.84	NA	NA	7.84	91.31	NA	
	31-Oct-02	99.15	None Detected	10.73	NA	NA	10.73	88.42	NA	
	14-Nov-02	99.15	None Detected	8.12	NA	NA	8.12	91.03	NA	
	27-Nov-02	99.15	None Detected	10.04	NA	NA	10.04	89.11	NA	
	11-Dec-02	99.15	None Detected	12.00	NA	NA	12.00	87.15	NA	
	24-Dec-02	99.15	None Detected	10.39	NA	NA	10.39	88.76	NA	
	30-Dec-02	99.15	None Detected	9.51	NA	NA	9.51	89.64	NA	
	13-Jan-03	99.15	None Detected	11.14	NA	NA	11.14	88.01	NA	
	27-Jan-03	99.15	None Detected	12.92	NA	NA	12.92	86.23	NA	
	18-Apr-03	99.15	None Detected	10.43	NA	NA	10.43	88.72	NA	
	19-May-03	99.15	None Detected	13.41	NA	NA	13.41	85.74	NA	
	13-Jun-03	99.15	None Detected	6.20	NA	NA	6.20	92.95	NA	
	20-Jun-03	99.15	None Detected	8.15	NA	NA	8.15	91.00	NA	
	18-Jul-03	99.15	13.28	13.29	0.01	0.01	13.28	85.87	trace	Bailed trace amount
	22-Aug-03	99.15	None Detected	12.61	NA	NA	12.61	86.54	NA	
	19-Sep-03	99.15	14.44	14.47	0.03	0.02	14.44	84.71	trace	Bailed trace amount
	22-Sep-03	99.15	13.54	13.54	sheen	NA	13.54	85.61	NPR	
	21-Oct-03	99.15	None Detected	12.41	NA	NA	12.41	86.74	NA	
	21-Nov-03	99.15	None Detected	6.96	NA	NA	6.96	92.19	NA	
	19-Dec-03	99.15	None Detected	8.31	NA	NA	8.31	90.84	NA	
	9-Jan-04	99.15	None Detected	11.46	NA	NA	11.46	87.69	NA	
	14-Jan-04	99.15	None Detected	12.45	NA	NA	12.45	86.70	NA	
	20-Feb-04	99.15	None Detected	12.91	NA	NA	12.91	86.24	NA	
	19-Mar-04	99.15	None Detected	9.24	NA	NA	9.24	89.91	NA	
	23-Apr-04	99.15	None Detected	11.54	NA	NA	11.54	87.61	NA	
	25-May-04	99.15	None Detected	12.02	NA	NA	12.02	87.13	NA	
	18-Jun-04	99.15	None Detected	11.30	NA	NA	11.30	87.85	NA	
MW-303	15-Sep-00	99.52	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	5-Dec-00	99.52	None Detected	17.39	NA	NA	17.39	82.13	NA	
	3-Apr-01	99.52	None Detected	15.46	NA	NA	15.46	84.06	NA	
	27-Sep-01	99.52	None Detected	15.18	NA	NA	15.18	84.34	NA	
	9-Oct-01	99.52	None Detected	15.66	NA	NA	15.66	83.86	NA	
	26-Oct-01	99.52	None Detected	15.74	NA	NA	15.74	83.78	NA	
	8-Nov-01	99.52	None Detected	16.05	NA	NA	16.05	83.47	NA	
	20-Nov-01	99.52	None Detected	16.03	NA	NA	16.03	83.49	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-303 (cont)	7-Dec-01	99.52	None Detected	16.19	NA	NA	16.19	83.33	NA	
	21-Dec-01	99.52	None Detected	16.15	NA	NA	16.15	83.37	NA	
	4-Jan-02	99.52	None Detected	16.32	NA	NA	16.32	83.20	NA	
	16-Jan-02	99.52	None Detected	16.26	NA	NA	16.26	83.26	NA	
	30-Jan-02	99.52	None Detected	16.13	NA	NA	16.13	83.39	NA	
	14-Feb-02	99.52	None Detected	16.31	NA	NA	16.31	83.21	NA	
	1-Mar-02	99.52	None Detected	16.50	NA	NA	16.50	83.02	NA	
	15-Mar-02	99.52	None Detected	16.03	NA	NA	16.03	83.49	NA	
	27-Mar-02	99.52	None Detected	15.12	NA	NA	15.12	84.40	NA	
	12-Apr-02	99.52	None Detected	15.96	NA	NA	15.96	83.56	NA	
	26-Apr-02	99.52	None Detected	15.84	NA	NA	15.84	83.68	NA	
	10-May-02	99.52	None Detected	15.66	NA	NA	15.66	83.86	NA	
	24-May-02	99.52	None Detected	15.29	NA	NA	15.29	84.23	NA	
	7-Jun-02	99.52	None Detected	15.38	NA	NA	15.38	84.14	NA	
	21-Jun-02	99.52	None Detected	15.62	NA	NA	15.62	83.90	NA	
	3-Jul-02	99.52	None Detected	15.57	NA	NA	15.57	83.95	NA	
	18-Jul-02	99.52	None Detected	15.92	NA	NA	15.92	83.60	NA	
	31-Jul-02	99.52	None Detected	16.10	NA	NA	16.10	83.42	NA	
	14-Aug-02	99.52	None Detected	15.41	NA	NA	15.41	84.11	NA	
	28-Aug-02	99.52	None Detected	15.29	NA	NA	15.29	84.23	NA	
	11-Sep-02	99.52	None Detected	14.14	NA	NA	14.14	85.38	NA	
	3-Oct-02	99.52	None Detected	15.12	NA	NA	15.12	84.40	NA	
	18-Oct-02	99.52	None Detected	14.55	NA	NA	14.55	84.97	NA	
	31-Oct-02	99.52	None Detected	14.79	NA	NA	14.79	84.73	NA	
	14-Nov-02	99.52	None Detected	14.79	NA	NA	14.79	84.73	NA	
	27-Nov-02	99.52	None Detected	14.70	NA	NA	14.70	84.82	NA	
	11-Dec-02	99.52	None Detected	15.05	NA	NA	15.05	84.47	NA	
	24-Dec-02	99.52	None Detected	14.78	NA	NA	14.78	84.74	NA	
	30-Dec-02	99.52	None Detected	14.66	NA	NA	14.66	84.86	NA	
	13-Jan-03	99.52	None Detected	14.60	NA	NA	14.60	84.92	NA	
	27-Jan-03	99.52	None Detected	15.19	NA	NA	15.19	84.33	NA	
	18-Apr-03	99.52	None Detected	15.02	NA	NA	15.02	84.50	NA	
	19-May-03	99.52	None Detected	15.76	NA	NA	15.76	83.76	NA	
	13-Jun-03	99.52	None Detected	14.50	NA	NA	14.50	85.02	NA	
	20-Jun-03	99.52	None Detected	14.17	NA	NA	14.17	85.35	NA	
	18-Jul-03	99.52	None Detected	15.34	NA	NA	15.34	84.18	NA	
	22-Aug-03	99.52	None Detected	15.27	NA	NA	15.27	84.25	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-303 (cont)	19-Sep-03	99.52	None Detected	15.82	NA	NA	15.82	83.70	NA	
	22-Sep-03	99.52	None Detected	15.98	NA	NA	15.98	83.54	NA	
	21-Oct-03	99.52	None Detected	15.80	NA	NA	15.80	83.72	NA	
	21-Nov-03	99.52	None Detected	15.33	NA	NA	15.33	84.19	NA	
	19-Dec-03	99.52	None Detected	14.90	NA	NA	14.90	84.62	NA	
	9-Jan-04	99.52	None Detected	15.43	NA	NA	15.43	84.09	NA	
	14-Jan-04	99.52	None Detected	15.62	NA	NA	15.62	83.90	NA	
	20-Feb-04	99.52	None Detected	15.58	NA	NA	15.58	83.94	NA	
	19-Mar-04	99.52	None Detected	15.23	NA	NA	15.23	84.29	NA	
	23-Apr-04	99.52	None Detected	15.15	NA	NA	15.15	84.37	NA	
	25-May-04	99.52	None Detected	14.97	NA	NA	14.97	84.55	NA	
	18-Jun-04	99.52	None Detected	15.11	NA	NA	15.11	84.41	NA	
MW-304	18-Sep-00	98.62	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	5-Dec-00	98.62	None Detected	17.36	NA	NA	17.36	81.26	NA	
	3-Apr-01	98.55	None Detected	15.08	NA	NA	15.08	83.47	NA	
	27-Sep-01	98.55	None Detected	15.39	NA	NA	15.39	83.16	NA	
	9-Oct-01	98.55	None Detected	15.67	NA	NA	15.67	82.88	NA	
	26-Oct-01	98.55	None Detected	16.65	NA	NA	16.65	81.90	NA	
	8-Nov-01	98.55	None Detected	15.84	NA	NA	15.84	82.71	NA	
	20-Nov-01	98.55	None Detected	15.84	NA	NA	15.84	82.71	NA	
	7-Dec-01	98.55	None Detected	15.85	NA	NA	15.85	82.70	NA	
	21-Dec-01	98.55	None Detected	16.00	NA	NA	16.00	82.55	NA	
	4-Jan-02	98.55	None Detected	16.10	NA	NA	16.10	82.45	NA	
	16-Jan-02	98.55	None Detected	16.07	NA	NA	16.07	82.48	NA	
	30-Jan-02	98.55	None Detected	15.90	NA	NA	15.90	82.65	NA	
	14-Feb-02	98.55	None Detected	16.04	NA	NA	16.04	82.51	NA	
	1-Mar-02	98.55	None Detected	16.20	NA	NA	16.20	82.35	NA	
	15-Mar-02	98.55	None Detected	15.84	NA	NA	15.84	82.71	NA	
	27-Mar-02	98.55	None Detected	15.61	NA	NA	15.61	82.94	NA	
	12-Apr-02	98.55	None Detected	15.81	NA	NA	15.81	82.74	NA	
	26-Apr-02	98.55	None Detected	15.80	NA	NA	15.80	82.75	NA	
	10-May-02	98.55	None Detected	15.56	NA	NA	15.56	82.99	NA	
	24-May-02	98.55	None Detected	15.28	NA	NA	15.28	83.27	NA	
	7-Jun-02	98.55	None Detected	15.55	NA	NA	15.55	83.00	NA	
	21-Jun-02	98.55	None Detected	15.57	NA	NA	15.57	82.98	NA	
	3-Jul-02	98.55	None Detected	15.51	NA	NA	15.51	83.04	NA	
	18-Jul-02	98.55	None Detected	15.73	NA	NA	15.73	82.82	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-304	31-Jul-02	98.55	None Detected	15.85	NA	NA	15.85	82.70	NA	
(cont)	14-Aug-02	98.55	None Detected	15.46	NA	NA	15.46	83.09	NA	
	28-Aug-02	98.55	None Detected	15.11	NA	NA	15.11	83.44	NA	
	11-Sep-02	98.55	None Detected	14.05	NA	NA	14.05	84.50	NA	
	3-Oct-02	98.55	None Detected	14.99	NA	NA	14.99	83.56	NA	
	18-Oct-02	98.55	None Detected	14.81	NA	NA	14.81	83.74	NA	
	31-Oct-02	98.55	None Detected	14.73	NA	NA	14.73	83.82	NA	
	14-Nov-02	98.55	None Detected	14.86	NA	NA	14.86	83.69	NA	
	27-Nov-02	98.55	None Detected	14.72	NA	NA	14.72	83.83	NA	
	11-Dec-02	98.55	None Detected	14.90	NA	NA	14.90	83.65	NA	
	24-Dec-02	98.55	None Detected	14.78	NA	NA	14.78	83.77	NA	
	30-Dec-02	98.55	None Detected	14.74	NA	NA	14.74	83.81	NA	
	13-Jan-03	98.55	None Detected	14.60	NA	NA	14.60	83.95	NA	
	27-Jan-03	98.55	None Detected	14.89	NA	NA	14.89	83.66	NA	
	18-Apr-03	98.55	None Detected	15.37	NA	NA	15.37	83.18	NA	
	19-May-03	98.55	None Detected	15.61	NA	NA	15.61	82.94	NA	
	13-Jun-03	98.55	None Detected	14.74	NA	NA	14.74	83.81	NA	
	20-Jun-03	98.55	None Detected	14.28	NA	NA	14.28	84.27	NA	
	18-Jul-03	98.55	None Detected	15.02	NA	NA	15.02	83.53	NA	
	22-Aug-03	98.55	None Detected	15.03	NA	NA	15.03	83.52	NA	
	19-Sep-03	98.55	None Detected	15.39	NA	NA	15.39	83.16	NA	
	22-Sep-03	98.55	None Detected	15.56	NA	NA	15.56	82.99	NA	
	21-Oct-03	98.55	None Detected	15.45	NA	NA	15.45	83.10	NA	
	21-Nov-03	98.55	None Detected	15.39	NA	NA	15.39	83.16	NA	
	19-Dec-03	98.55	None Detected	15.02	NA	NA	15.02	83.53	NA	
	9-Jan-04	98.55	None Detected	15.22	NA	NA	15.22	83.33	NA	
	14-Jan-04	98.55	None Detected	15.29	NA	NA	15.29	83.26	NA	
	20-Feb-04	98.55	None Detected	15.28	NA	NA	15.28	83.27	NA	
	19-Mar-04	98.55	None Detected	15.04	NA	NA	15.04	83.51	NA	
	23-Apr-04	98.55	None Detected	15.14	NA	NA	15.14	83.41	NA	
	25-May-04	98.55	None Detected	14.85	NA	NA	14.85	83.70	NA	
	18-Jun-04	98.55	None Detected	14.85	NA	NA	14.85	83.70	NA	
MW-305	19-Sep-00	97.23	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	5-Dec-00	97.23	None Detected	17.02	NA	NA	17.02	80.21	NA	
	3-Apr-01	97.19	None Detected	13.99	NA	NA	13.99	83.20	NA	
	27-Sep-01	97.19	None Detected	14.58	NA	NA	14.58	82.61	NA	
	9-Oct-01	97.19	None Detected	15.10	NA	NA	15.10	82.09	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-305 (cont)	26-Oct-01	97.19	None Detected	15.12	NA	NA	15.12	82.07	NA	
	8-Nov-01	97.19	None Detected	15.42	NA	NA	15.42	81.77	NA	
	20-Nov-01	97.19	None Detected	15.35	NA	NA	15.35	81.84	NA	
	7-Dec-01	97.19	None Detected	15.00	NA	NA	15.00	82.19	NA	
	21-Dec-01	97.19	None Detected	14.92	NA	NA	14.92	82.27	NA	
	4-Jan-02	97.19	None Detected	15.65	NA	NA	15.65	81.54	NA	
	16-Jan-02	97.19	None Detected	15.29	NA	NA	15.29	81.90	NA	
	30-Jan-02	97.19	None Detected	15.47	NA	NA	15.47	81.72	NA	
	14-Feb-02	97.19	None Detected	15.44	NA	NA	15.44	81.75	NA	
	1-Mar-02	97.19	None Detected	15.50	NA	NA	15.50	81.69	NA	
	15-Mar-02	97.19	None Detected	13.96	NA	NA	13.96	83.23	NA	
	27-Mar-02	97.19	None Detected	9.24	NA	NA	9.24	87.95	NA	
	12-Apr-02	97.19	None Detected	14.81	NA	NA	14.81	82.38	NA	
	26-Apr-02	97.19	None Detected	9.20	NA	NA	9.20	87.99	NA	
	10-May-02	97.19	None Detected	10.07	NA	NA	10.07	87.12	NA	
	24-May-02	97.19	None Detected	14.86	NA	NA	14.86	82.33	NA	
	7-Jun-02	97.19	None Detected	8.95	NA	NA	8.95	88.24	NA	
	21-Jun-02	97.19	None Detected	15.24	NA	NA	15.24	81.95	NA	
	3-Jul-02	97.19	None Detected	15.46	NA	NA	15.46	81.73	NA	
	18-Jul-02	97.19	None Detected	15.68	NA	NA	15.68	81.51	NA	
	31-Jul-02	97.19	None Detected	15.79	NA	NA	15.79	81.40	NA	
	14-Aug-02	97.19	None Detected	15.08	NA	NA	15.08	82.11	NA	
	28-Aug-02	97.19	None Detected	14.73	NA	NA	14.73	82.46	NA	
	11-Sep-02	97.19	None Detected	14.98	NA	NA	14.98	82.21	NA	
	3-Oct-02	97.19	None Detected	15.12	NA	NA	15.12	82.07	NA	
	18-Oct-02	97.19	None Detected	12.56	NA	NA	12.56	84.63	NA	
	31-Oct-02	97.19	None Detected	12.88	NA	NA	12.88	84.31	NA	
	14-Nov-02	97.19	None Detected	12.30	NA	NA	12.30	84.89	NA	
	27-Nov-02	97.19	None Detected	13.26	NA	NA	13.26	83.93	NA	
	11-Dec-02	97.19	None Detected	12.70	NA	NA	12.70	84.49	NA	
	24-Dec-02	97.19	None Detected	14.41	NA	NA	14.41	82.78	NA	
	30-Dec-02	97.19	None Detected	10.66	NA	NA	10.66	86.53	NA	
	13-Jan-03	97.19	None Detected	14.34	NA	NA	14.34	82.85	NA	
	27-Jan-03	97.19	None Detected	14.85	NA	NA	14.85	82.34	NA	
	18-Apr-03	97.19	None Detected	14.01	NA	NA	14.01	83.18	NA	
	19-May-03	97.19	None Detected	15.94	NA	NA	15.94	81.25	NA	
	13-Jun-03	97.19	None Detected	9.59	NA	NA	9.59	87.60	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-305 (cont)	20-Jun-03	97.19	None Detected	8.40	NA	NA	8.40	88.79	NA	
	18-Jul-03	97.19	None Detected	15.45	NA	NA	15.45	81.74	NA	
	22-Aug-03	97.19	None Detected	15.45	NA	NA	15.45	81.74	NA	
	19-Sep-03	97.19	None Detected	15.77	NA	NA	15.77	81.42	NA	
	22-Sep-03	97.19	None Detected	15.91	NA	NA	15.91	81.28	NA	
	21-Oct-03	97.19	None Detected	15.97	NA	NA	15.97	81.22	NA	
	21-Nov-03	97.19	None Detected	12.82	NA	NA	12.82	84.37	NA	
	19-Dec-03	97.19	None Detected	13.15	NA	NA	13.15	84.04	NA	
	9-Jan-04	97.19	None Detected	15.22	NA	NA	15.22	81.97	NA	
	14-Jan-04	97.19	None Detected	15.67	NA	NA	15.67	81.52	NA	
	20-Feb-04	97.19	None Detected	17.44	NA	NA	17.44	79.75	NA	
	19-Mar-04	97.19	None Detected	15.61	NA	NA	15.61	81.58	NA	
	23-Apr-04	97.19	None Detected	15.66	NA	NA	15.66	81.53	NA	
	25-May-04	97.19	None Detected	15.27	NA	NA	15.27	81.92	NA	
	18-Jun-04	97.19	None Detected	15.37	NA	NA	15.37	81.82	NA	
MW-306	15-Jan-01	97.30	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	97.30	None Detected	18.71	NA	NA	18.71	78.59	NA	
	1-Feb-01	97.30	None Detected	18.14	NA	NA	18.14	79.16	NA	
	3-Apr-01	97.30	None Detected	15.33	NA	NA	15.33	81.97	NA	
	27-Sep-01	97.30	None Detected	16.18	NA	NA	16.18	81.12	NA	
	9-Oct-01	97.30	None Detected	16.34	NA	NA	16.34	80.96	NA	
	26-Oct-01	97.30	None Detected	16.37	NA	NA	16.37	80.93	NA	
	8-Nov-01	97.30	None Detected	16.52	NA	NA	16.52	80.78	NA	
	20-Nov-01	97.30	None Detected	16.54	NA	NA	16.54	80.76	NA	
	7-Dec-01	97.30	16.65	16.66	0.01	0.01	16.65	80.65	NA	
	21-Dec-01	97.30	None Detected	17.95	NA	NA	17.95	79.35	NA	
	4-Jan-02	97.30	None Detected	16.85	NA	NA	16.85	80.45	NA	
	16-Jan-02	97.30	None Detected	16.81	NA	NA	16.81	80.49	NA	
	30-Jan-02	97.30	None Detected	11.81	NA	NA	11.81	85.49	NA	
	14-Feb-02	97.30	None Detected	16.81	NA	NA	16.81	80.49	NA	
	1-Mar-02	97.30	None Detected	16.50	NA	NA	16.50	80.80	NA	
	15-Mar-02	97.30	None Detected	16.88	NA	NA	16.88	80.42	NA	
	27-Mar-02	97.30	None Detected	16.81	NA	NA	16.81	80.49	NA	
	12-Apr-02	97.30	None Detected	16.86	NA	NA	16.86	80.44	NA	
	26-Apr-02	97.30	None Detected	17.03	NA	NA	17.03	80.27	NA	
	10-May-02	97.30	None Detected	16.88	NA	NA	16.88	80.42	NA	
	24-May-02	97.30	None Detected	16.77	NA	NA	16.77	80.53	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-306	7-Jun-02	97.30	None Detected	16.96	NA	NA	16.96	80.34	NA	
(cont)	21-Jun-02	97.30	None Detected	16.92	NA	NA	16.92	80.38	NA	
	3-Jul-02	97.30	None Detected	16.95	NA	NA	16.95	80.35	NA	
	18-Jul-02	97.30	None Detected	17.08	NA	NA	17.08	80.22	NA	
	31-Jul-02	97.30	None Detected	16.66	NA	NA	16.66	80.64	NA	
	14-Aug-02	97.30	None Detected	15.58	NA	NA	15.58	81.72	NA	
	28-Aug-02	97.30	None Detected	15.38	NA	NA	15.38	81.92	NA	
	11-Sep-02	97.30	None Detected	15.24	NA	NA	15.24	82.06	NA	
	3-Oct-02	97.30	None Detected	15.31	NA	NA	15.31	81.99	NA	
	18-Oct-02	97.30	None Detected	16.25	NA	NA	16.25	81.05	NA	
	31-Oct-02	97.30	None Detected	16.16	NA	NA	16.16	81.14	NA	
	14-Nov-02	97.30	None Detected	16.35	NA	NA	16.35	80.95	NA	
	27-Nov-02	97.30	None Detected	16.17	NA	NA	16.17	81.13	NA	
	11-Dec-02	97.30	None Detected	16.33	NA	NA	16.33	80.97	NA	
	24-Dec-02	97.30	None Detected	16.15	NA	NA	16.15	81.15	NA	
	30-Dec-02	97.30	None Detected	16.09	NA	NA	16.09	81.21	NA	
	13-Jan-03	97.30	None Detected	15.89	NA	NA	15.89	81.41	NA	
	27-Jan-03	97.30	None Detected	16.16	NA	NA	16.16	81.14	NA	
	18-Apr-03	97.30	None Detected	17.53	NA	NA	17.53	79.77	NA	
	19-May-03	97.30	None Detected	16.63	NA	NA	16.63	80.67	NA	
	13-Jun-03	97.30	None Detected	16.91	NA	NA	16.91	80.39	NA	
	20-Jun-03	97.30	None Detected	16.73	NA	NA	16.73	80.57	NA	
	18-Jul-03	97.30	None Detected	16.92	NA	NA	16.92	80.38	NA	
	22-Aug-03	97.30	None Detected	17.02	NA	NA	17.02	80.28	NA	
	19-Sep-03	97.30	None Detected	17.41	NA	NA	17.41	79.89	NA	
	22-Sep-03	97.30	None Detected	17.42	NA	NA	17.42	79.88	NA	
	21-Oct-03	97.30	None Detected	17.46	NA	NA	17.46	79.84	NA	
	21-Nov-03	97.30	None Detected	17.40	NA	NA	17.40	79.90	NA	
	19-Dec-03	97.30	None Detected	17.11	NA	NA	17.11	80.19	NA	
	9-Jan-04	97.30	None Detected	17.13	NA	NA	17.13	80.17	NA	
	14-Jan-04	97.30	None Detected	17.12	NA	NA	17.12	80.18	NA	
	20-Feb-04	97.30	None Detected	15.70	NA	NA	15.70	81.60	NA	
	19-Mar-04	97.30	None Detected	16.97	NA	NA	16.97	80.33	NA	
	23-Apr-04	97.30	None Detected	17.17	NA	NA	17.17	80.13	NA	
	25-May-04	97.30	None Detected	16.70	NA	NA	16.70	80.60	NA	
	18-Jun-04	97.30	None Detected	16.56	NA	NA	16.56	80.74	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-307	11-Jan-01	99.63	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	99.63	None Detected	18.74	NA	NA	18.74	80.89	NA	
	1-Feb-01	99.63	None Detected	18.43	NA	NA	18.43	81.20	NA	
	3-Apr-01	99.63	None Detected	16.35	NA	NA	16.35	83.28	NA	
	22-Aug-01	99.63	17.17	17.25	0.08	0.05	17.18	82.45	NPR	
	4-Sep-01	99.63	17.31	17.37	0.06	0.04	17.32	82.31	NPR	
	27-Sep-01	99.63	None Detected	17.09	NA	NA	17.09	82.54	NA	Sheen on Probe
	9-Oct-01	99.63	17.32	17.34	0.02	0.01	17.32	82.31	NPR	
	26-Oct-01	99.63	None Detected	17.38	NA	NA	17.38	82.25	NA	
	8-Nov-01	99.63	None Detected	17.38	NA	NA	17.38	82.25	NA	
	20-Nov-01	99.63	17.72	17.73	0.01	0.01	17.72	81.91	NPR	
	7-Dec-01	99.63	17.80	17.81	0.01	0.01	17.80	81.83	NPR	
	21-Dec-01	99.63	Not Measured	Not Measured						
	4-Jan-02	99.63	None Detected	17.94	NA	NA	17.94	81.69	NA	No product detected
	16-Jan-02	99.63	None Detected	18.22	NA	NA	18.22	81.41	NA	0.01 ft of product in skimmer
	30-Jan-02	99.63	None Detected	18.06	NA	NA	18.06	81.57	NA	0.02 ft of product in skimmer
	14-Feb-02	99.63	None Detected	17.76	NA	NA	17.76	81.87	NA	No product detected in skimmer
	1-Mar-02	99.63	None Detected	18.40	NA	NA	18.40	81.23	NA	
	15-Mar-02	99.63	None Detected	17.45	NA	NA	17.45	82.18	NA	No product detected in skimmer
	27-Mar-02	99.63	None Detected	17.59	NA	NA	17.59	82.04	NA	No product detected in skimmer
	12-Apr-02	99.63	None Detected	17.92	NA	NA	17.92	81.71	NA	
	26-Apr-02	99.63	None Detected	17.60	NA	NA	17.60	82.03	NA	
	10-May-02	99.63	None Detected	17.72	Sheen	NA	17.72	81.91	NA	
	24-May-02	99.63	None Detected	17.12	NA	NA	17.12	82.51	NA	
	7-Jun-02	99.63	None Detected	17.67	NA	NA	17.67	81.96	NA	
	21-Jun-02	99.63	None Detected	17.74	NA	NA	17.74	81.89	NA	
	3-Jul-02	99.63	None Detected	17.58	NA	NA	17.58	82.05	NA	
	18-Jul-02	99.63	None Detected	17.94	NA	NA	17.94	81.69	NA	
	31-Jul-02	99.63	None Detected	18.03	NA	NA	18.03	81.60	NA	
	14-Aug-02	99.63	None Detected	17.03	NA	NA	17.03	82.60	NA	
	28-Aug-02	99.63	None Detected	16.85	NA	NA	16.85	82.78	NA	
	11-Sep-02	99.63	None Detected	15.87	NA	NA	15.87	83.76	NA	
	3-Oct-02	99.63	None Detected	17.19	NA	NA	17.19	82.44	NA	
	18-Oct-02	99.63	None Detected	16.57	NA	NA	16.57	83.06	NA	
	31-Oct-02	99.63	None Detected	16.38	NA	NA	16.38	83.25	NA	
	14-Nov-02	99.63	None Detected	16.72	NA	NA	16.72	82.91	NA	
	27-Nov-02	99.63	None Detected	16.44	NA	NA	16.44	83.19	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD ^{2})	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD ^{2})	Volume Water/Product Removed (gal)	NOTES
MW-307 (cont)	11-Dec-02	99.63	16.50	16.51	0.01	0.01	16.50	83.13	trace	Hand bailed
	24-Dec-02	99.63	16.49	16.51	0.02	0.01	16.49	83.14	NPR	
	30-Dec-02	99.63	16.55	16.59	0.04	0.02	16.55	83.08	trace	Hand bailed
	13-Jan-03	99.63	16.05	16.12	0.07	0.04	16.06	83.57	trace	Hand bailed
	27-Jan-03	99.63	16.63	16.73	0.10	0.06	16.64	82.99	trace	Hand bailed
	18-Apr-03	99.63	17.27	17.37	0.10	0.06	17.28	82.35	trace	Bailed 8 ounces +/-
	19-May-03	99.63	17.75	18.02	0.27	0.16	17.78	81.85	trace	Bailed 8 ounces +/-
	13-Jun-03	99.63	None Detected	16.62	NA	NA	16.62	83.01		
	20-Jun-03	99.63	16.42	16.50	0.08	0.05	16.43	83.20	0.50	Bailed 0.5 gallon +/-
	18-Jul-03	99.63	18.38	18.69	0.31	0.18	18.41	81.22	0.25	Bailed 0.25 gallons
	22-Aug-03	99.63	17.34	17.52	0.18	0.11	17.36	82.27	trace	Bailed trace amount
	19-Sep-03	99.63	17.99	18.25	0.26	0.15	18.02	81.61	0.5	Used perstaltic pump to pump 0.5 gallon
	22-Sep-03	99.63	18.00	18.26	0.26	0.15	18.03	81.60	0.03	Bailed 4 oz
	21-Oct-03	99.63	17.93	18.00	0.07	0.04	17.94	81.69	trace	Bailed trace amount.
	21-Nov-03	99.63	None Detected	17.79	NA	NA	17.79	81.84	0.25	Replaced spent Soakease (TM) with new one.
	19-Dec-03	99.63	None Detected	17.40	NA	NA	17.40	82.23	trace	Soakease inspected and placed back in well.
	9-Jan-04	99.63	None Detected	17.37	NA	NA	17.37	82.26	NA	
	14-Jan-04	99.63	None Detected	17.46	NA	NA	17.46	82.17	NA	
	20-Feb-04	99.63	None Detected	17.10	NA	NA	17.10	82.53	NA	
	19-Mar-04	99.63	None Detected	17.48	NA	NA	17.48	82.15	NA	
	23-Apr-04	99.63	17.37	17.38	0.01	0.01	17.37	82.26	trace	bailed trace amount
	25-May-04	99.63	17.05	17.08	0.03	0.02	17.05	82.58	trace	bailed trace amount
	18-Jun-04	99.63	17.26	17.26	sheen	sheen	17.26	82.37	trace	bailed trace amount
MW-401	12-Jan-01	99.23	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	99.23	None Detected	10.69	NA	NA	10.69	88.54	NA	
	3-Apr-01	99.23	None Detected	9.74	NA	NA	9.74	89.49	NA	
	27-Sep-01	99.23	None Detected	10.30	NA	NA	10.30	88.93	NA	
	9-Oct-01	99.23	None Detected	10.51	NA	NA	10.51	88.72	NA	
	26-Oct-01	99.23	None Detected	10.78	NA	NA	10.78	88.45	NA	
	8-Nov-01	99.23	None Detected	10.99	NA	NA	10.99	88.24	NA	
	20-Nov-01	99.23	None Detected	11.17	NA	NA	11.17	88.06	NA	
	7-Dec-01	99.23	None Detected	11.28	NA	NA	11.28	87.95	NA	
	21-Dec-01	99.23	None Detected	11.20	NA	NA	11.20	88.03	NA	
	4-Jan-02	99.23	None Detected	11.32	NA	NA	11.32	87.91	NA	
	16-Jan-02	99.23	None Detected	11.32	NA	NA	11.32	87.91	NA	
	30-Jan-02	99.23	None Detected	11.21	NA	NA	11.21	88.02	NA	
	14-Feb-02	99.23	None Detected	11.35	NA	NA	11.35	87.88	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-401	1-Mar-02	99.23	None Detected	11.40	NA	NA	11.40	87.83	NA	
(cont)	15-Mar-02	99.23	None Detected	11.13	NA	NA	11.13	88.10	NA	
	27-Mar-02	99.23	None Detected	10.69	NA	NA	10.69	88.54	NA	
	12-Apr-02	99.23	None Detected	10.71	NA	NA	10.71	88.52	NA	
	26-Apr-02	99.23	None Detected	10.88	NA	NA	10.88	88.35	NA	
	10-May-02	99.23	None Detected	10.47	NA	NA	10.47	88.76	NA	
	24-May-02	99.23	None Detected	10.37	NA	NA	10.37	88.86	NA	
	7-Jun-02	99.23	None Detected	10.25	NA	NA	10.25	88.98	NA	
	21-Jun-02	99.23	None Detected	10.37	NA	NA	10.37	88.86	NA	
	3-Jul-02	99.23	None Detected	10.49	NA	NA	10.49	88.74	NA	
	18-Jul-02	99.23	None Detected	10.68	NA	NA	10.68	88.55	NA	
	31-Jul-02	99.23	None Detected	10.73	NA	NA	10.73	88.50	NA	
	14-Aug-02	99.23	None Detected	10.96	NA	NA	10.96	88.27	NA	
	28-Aug-02	99.23	None Detected	11.02	NA	NA	11.02	88.21	NA	
	11-Sep-02	99.23	None Detected	10.11	NA	NA	10.11	89.12	NA	
	3-Oct-02	99.23	None Detected	10.16	NA	NA	10.16	89.07	NA	
	18-Oct-02	99.23	None Detected	9.84	NA	NA	9.84	89.39	NA	
	31-Oct-02	99.23	None Detected	9.99	NA	NA	9.99	89.24	NA	
	14-Nov-02	99.23	None Detected	10.02	NA	NA	10.02	89.21	NA	
	27-Nov-02	99.23	None Detected	10.05	NA	NA	10.05	89.18	NA	
	11-Dec-02	99.23	None Detected	10.15	NA	NA	10.15	89.08	NA	
	24-Dec-02	99.23	None Detected	10.00	NA	NA	10.00	89.23	NA	
	30-Dec-02	99.23	None Detected	9.91	NA	NA	9.91	89.32	NA	
	13-Jan-03	99.23	None Detected	10.01	NA	NA	10.01	89.22	NA	
	27-Jan-03	99.23	None Detected	10.30	NA	NA	10.30	88.93	NA	
	18-Apr-03	99.23	None Detected	9.97	NA	NA	9.97	89.26	NA	
	19-May-03	99.23	None Detected	11.13	NA	NA	11.13	88.10	NA	
	13-Jun-03	99.23	None Detected	9.92	NA	NA	9.92	89.31	NA	
	20-Jun-03	99.23	None Detected	9.75	NA	NA	9.75	89.48	NA	
	18-Jul-03	99.23	None Detected	10.20	NA	NA	10.20	89.03	NA	
	22-Aug-03	99.23	None Detected	10.22	NA	NA	10.22	89.01	NA	
	19-Sep-03	99.23	None Detected	10.50	NA	NA	10.50	88.73	NA	
	22-Sep-03	99.23	None Detected	10.51	NA	NA	10.51	88.72	NA	
	21-Oct-03	99.23	Not Monitored	10.20	NA	NA	10.20	89.03	NA	
	21-Nov-03	99.23	None Detected	10.18	NA	NA	10.18	89.05	NA	
	19-Dec-03	99.23	None Detected	9.97	NA	NA	9.97	89.26	NA	
	9-Jan-04	99.23	10.22	10.22	sheen	NA	10.22	89.01	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-401 (cont)	14-Jan-04	99.23	None Detected	10.17	NA	NA	10.17	89.06	NA	
	20-Feb-04	99.23	None Detected	10.27	NA	NA	10.27	88.96	NA	
	19-Mar-04	99.23	None Detected	10.32	NA	NA	10.32	88.91	NA	
	23-Apr-04	99.23	None Detected	10.09	NA	NA	10.09	89.14	NA	
	25-May-04	99.23	None Detected	10.18	NA	NA	10.18	89.05	NA	
	18-Jun-04	99.23	None Detected	10.70	NA	NA	10.70	88.53	NA	
MW-402	12-Jan-01	98.44	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	98.44	None Detected	10.12	NA	NA	10.12	88.32	NA	
	9-Feb-01	98.44	None Detected	9.77	NA	NA	9.77	88.67	NA	
	3-Apr-01	98.44	None Detected	9.28	NA	NA	9.28	89.16	NA	
	27-Sep-01	98.44	None Detected	9.85	NA	NA	9.85	88.59	NA	
	9-Oct-01	98.44	None Detected	10.02	NA	NA	10.02	88.42	NA	
	26-Oct-01	98.44	None Detected	10.24	NA	NA	10.24	88.20	NA	
	8-Nov-01	98.44	None Detected	10.42	NA	NA	10.42	88.02	NA	
	20-Nov-01	98.44	None Detected	10.55	NA	NA	10.55	87.89	NA	
	7-Dec-01	98.44	None Detected	10.70	NA	NA	10.70	87.74	NA	
	21-Dec-01	98.44	None Detected	11.05	NA	NA	11.05	87.39	NA	
	4-Jan-02	98.44	None Detected	10.80	NA	NA	10.80	87.64	NA	
	16-Jan-02	98.44	None Detected	10.73	NA	NA	10.73	87.71	NA	
	30-Jan-02	98.44	None Detected	10.69	NA	NA	10.69	87.75	NA	
	14-Feb-02	98.44	None Detected	10.78	NA	NA	10.78	87.66	NA	
	1-Mar-02	98.44	None Detected	10.70	NA	NA	10.70	87.74	NA	
	15-Mar-02	98.44	None Detected	10.59	NA	NA	10.59	87.85	NA	
	27-Mar-02	98.44	None Detected	10.24	NA	NA	10.24	88.20	NA	
	12-Apr-02	98.44	None Detected	10.23	NA	NA	10.23	88.21	NA	
	26-Apr-02	98.44	None Detected	10.35	NA	NA	10.35	88.09	NA	
	10-May-02	98.44	None Detected	10.01	NA	NA	10.01	88.43	NA	
	24-May-02	98.44	None Detected	9.93	NA	NA	9.93	88.51	NA	
	7-Jun-02	98.44	None Detected	10.00	NA	NA	10.00	88.44	NA	
	21-Jun-02	98.44	None Detected	9.92	NA	NA	9.92	88.52	NA	
	3-Jul-02	98.44	None Detected	10.06	NA	NA	10.06	88.38	NA	
	18-Jul-02	98.44	None Detected	10.21	NA	NA	10.21	88.23	NA	
	31-Jul-02	98.44	None Detected	10.24	NA	NA	10.24	88.20	NA	
	14-Aug-02	98.44	None Detected	10.45	NA	NA	10.45	87.99	NA	
	28-Aug-02	98.44	None Detected	10.47	NA	NA	10.47	87.97	NA	
	11-Sep-02	98.44	None Detected	9.72	NA	NA	9.72	88.72	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-402 (cont)	3-Oct-02	98.44	None Detected	9.71	NA	NA	9.71	88.73	NA	
	18-Oct-02	98.44	None Detected	9.37	NA	NA	9.37	89.07	NA	
	31-Oct-02	98.44	None Detected	9.52	NA	NA	9.52	88.92	NA	
	14-Nov-02	98.44	None Detected	9.61	NA	NA	9.61	88.83	NA	
	27-Nov-02	98.44	None Detected	9.57	NA	NA	9.57	88.87	NA	
	11-Dec-02	98.44	None Detected	9.73	NA	NA	9.73	88.71	NA	
	24-Dec-02	98.44	None Detected	9.53	NA	NA	9.53	88.91	NA	
	30-Dec-02	98.44	None Detected	9.46	NA	NA	9.46	88.98	NA	
	13-Jan-03	98.44	None Detected	9.55	NA	NA	9.55	88.89	NA	
	27-Jan-03	98.44	None Detected	9.81	NA	NA	9.81	88.63	NA	
	18-Apr-03	98.44	None Detected	9.49	NA	NA	9.49	88.95	NA	
	19-May-03	98.44	None Detected	10.98	NA	NA	10.98	87.46	NA	
	13-Jun-03	98.44	None Detected	9.38	NA	NA	9.38	89.06	NA	
	20-Jun-03	98.44	None Detected	9.24	NA	NA	9.24	89.20	NA	
	18-Jul-03	98.44	None Detected	9.69	NA	NA	9.69	88.75	NA	
	22-Aug-03	98.44	None Detected	9.71	NA	NA	9.71	88.73	NA	
	19-Sep-03	98.44	None Detected	9.97	NA	NA	9.97	88.47	NA	
	22-Sep-03	98.44	None Detected	10.00	NA	NA	10.00	88.44	NA	
	21-Oct-03	98.44	Not Monitored	9.69	NA	NA	9.69	88.75	NA	
	21-Nov-03	98.44	None Detected	9.78	NA	NA	9.78	88.66	NA	
	19-Dec-03	98.44	None Detected	9.48	NA	NA	9.48	88.96	NA	
	9-Jan-04	98.44	None Detected	9.69	NA	NA	9.69	88.75	NA	
	14-Jan-04	98.44	Not Monitored	9.65	NA	NA	9.65	88.79	NA	
	20-Feb-04	98.44	None Detected	9.78	NA	NA	9.78	88.66	NA	
	19-Mar-04	98.44	None Detected	10.01	NA	NA	10.01	88.43	NA	
	23-Apr-04	98.44	None Detected	9.58	NA	NA	9.58	88.86	NA	
	25-May-04	98.44	None Detected	9.67	NA	NA	9.67	88.77	NA	
	18-Jun-04	98.44	None Detected	9.77	NA	NA	9.77	88.67	NA	
MW-403	11-Jan-01	99.68	NM	NM	NA	NA	NA	NA	NA	Well Constructed
	15-Jan-01	99.68	None Detected	19.06	NA	NA	19.06	80.62	NA	
	1-Feb-01	99.68	None Detected	18.87	NA	NA	18.87	80.81	NA	
	3-Apr-01	99.68	None Detected	16.70	NA	NA	16.70	82.98	NA	
	6-Jun-01	99.68	None Detected	14.98	NA	NA	14.98	84.70	NA	
	20-Jun-01	99.68	None Detected	14.95	NA	NA	14.95	84.73	NA	
	28-Jun-01	99.68	None Detected	14.95	NA	NA	14.95	84.73	NA	
	2-Aug-01	99.68	None Detected	16.96	NA	NA	16.96	82.72	NA	
	22-Aug-01	99.68	None Detected	17.22	NA	NA	17.22	82.46	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-403	4-Sep-01	99.68	None Detected	17.29	NA	NA	17.29	82.39	NA	
(cont)	27-Sep-01	99.68	None Detected	17.05	NA	NA	17.05	82.63	NA	
	9-Oct-01	99.68	None Detected	17.39	NA	NA	17.39	82.29	NA	
	26-Oct-01	99.68	17.44	17.45	NA	NA	17.45	82.23	NA	Placed Soakease in well
	8-Nov-01	99.68	None Detected	17.75	NA	NA	17.75	81.93	NA	
	20-Nov-01	99.68	None Detected	17.66	NA	NA	17.66	82.02	NA	
	7-Dec-01	99.68	17.88	17.89	NA	NA	17.89	81.79	NA	
	21-Dec-01	99.68	None Detected	18.00	NA	NA	18.00	81.68	NA	
	4-Jan-02	99.68	None Detected	18.02	NA	NA	18.02	81.66	NA	
	16-Jan-02	99.68	None Detected	17.96	NA	NA	17.96	81.72	NA	
	30-Jan-02	99.68	None Detected	17.84	NA	NA	17.84	81.84	NA	
	14-Feb-02	99.68	None Detected	17.89	NA	NA	17.89	81.79	NA	
	1-Mar-02	99.68	None Detected	18.10	NA	NA	18.10	81.58	NA	
	15-Mar-02	99.68	None Detected	17.62	NA	NA	17.62	82.06	NA	
	27-Mar-02	99.68	None Detected	16.99	NA	NA	16.99	82.69	NA	
	12-Apr-02	99.68	None Detected	17.59	NA	NA	17.59	82.09	NA	
	26-Apr-02	99.68	None Detected	17.60	NA	NA	17.60	82.08	NA	
	10-May-02	99.68	None Detected	17.29	NA	NA	17.29	82.39	NA	
	24-May-02	99.68	None Detected	16.95	NA	NA	16.95	82.73	NA	
	7-Jun-02	99.68	None Detected	16.86	NA	NA	16.86	82.82	NA	
	21-Jun-02	99.68	17.42	17.43	NA	NA	17.43	82.25	NA	
	3-Jul-02	99.68	None Detected	17.44	NA	NA	17.44	82.24	NA	
	18-Jul-02	99.68	None Detected	17.75	NA	NA	17.75	81.93	NA	
	31-Jul-02	99.68	None Detected	17.77	NA	NA	17.77	81.91	NA	
	14-Aug-02	99.68	None Detected	16.69	NA	NA	16.69	82.99	NA	
	28-Aug-02	99.68	None Detected	16.79	NA	NA	16.79	82.89	NA	
	11-Sep-02	99.68	None Detected	15.53	NA	NA	15.53	84.15	NA	
	3-Oct-02	99.68	None Detected	16.95	NA	NA	16.95	82.73	NA	
	18-Oct-02	99.68	None Detected	16.35	NA	NA	16.35	83.33	NA	
	31-Oct-02	99.68	None Detected	16.50	NA	NA	16.50	83.18	NA	
	14-Nov-02	99.68	None Detected	16.88	NA	NA	16.88	82.80	NA	
	27-Nov-02	99.68	None Detected	15.55	NA	NA	15.55	84.13	NA	
	11-Dec-02	99.68	None Detected	17.08	NA	NA	17.08	82.60	NA	
	24-Dec-02	99.68	None Detected	16.82	NA	NA	16.82	82.86	NA	
	30-Dec-02	99.68	NM	NM	NA	NA	NM	#N/A	NA	
	13-Jan-03	99.68	None Detected	16.54	NA	NA	16.54	83.14	NA	
	27-Jan-03	99.68	None Detected	17.04	NA	NA	17.04	82.64	NA	

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES
MW-403	18-Apr-03	99.68	None Detected	17.75	NA	NA	17.75	81.93	NA	
(cont)	19-May-03	99.68	None Detected	18.14	NA	NA	18.14	81.54	NA	
	18-Apr-03	99.68	None Detected	17.75	NA	NA	17.75	81.93	NA	
	19-May-03	99.68	None Detected	18.14	NA	NA	18.14	81.54	NA	
	13-Jun-03	99.68	None Detected	13.90	NA	NA	13.90	85.78	NA	
	20-Jun-03	99.68	None Detected	17.61	NA	NA	17.61	82.07	NA	
	18-Jul-03	99.68	None Detected	17.64	NA	NA	17.64	82.04	NA	
	22-Aug-03	99.68	None Detected	17.55	NA	NA	17.55	82.13	NA	
	19-Sep-03	99.68	Not Monitored	Not Monitored	NA	NA	Not Monitored	#VALUE!	NA	Not monitored, well head under water.
	22-Sep-03	99.68	18.23	18.26	NA	NA	18.26	81.42	NA	
	21-Oct-03	99.68	None Detected	18.12	NA	NA	18.12	81.56	NA	
	21-Nov-03	99.68	None Detected	16.61	NA	NA	16.61	83.07	NA	
	19-Dec-03	99.68	16.67	16.82	NA	NA	16.82	82.86	5	VEFR Conducted.
	9-Jan-04	99.68	17.35	17.81	0.46	0.27	17.40	82.28	1.5	VEFR Conducted. Volume estimated from total (14 gal).
	14-Jan-04	99.68	17.47	17.61	0.14	0.08	17.48	82.20	-	No VEFR Conducted. Wells monitored for pre-Flood Test.
	20-Feb-04	99.68	17.61	18.35	0.74	0.44	17.69	81.99	7.5	VEFR Conducted. Volume estimated from total (30 gals)
	19-Mar-04	99.68	17.54	18.07	0.53	0.31	17.60	82.08	36	VEFR Conducted. Volume estimated from total (180 gals)
	23-Apr-04	99.68	17.17	17.20	0.03	0.02	17.17	82.51	25	VEFR Conducted. Volume estimated from total (100 gal).
	25-May-04	99.68	16.93	17.01	0.08	0.05	16.94	82.74	6	VEFR Conducted. Volume estimated from total (18 gal).
	18-Jun-04	99.68	17.15	17.33	0.18	0.11	17.17	82.51	9	VEFR Conducted.
IW-1	22-Oct-03	99.78	NA	NA	NA	NA	NA	NA	NA	6-Inch Diameter Injection Well Installed
	21-Nov-03	99.78	None Detected	17.90	NA	NA	17.90	81.88	NA	
	19-Dec-03	99.78	None Detected	17.53	NA	NA	17.53	82.25	NA	
	9-Jan-04	99.78	None Detected	17.90	NA	NA	17.90	81.88	9.5	VEFR Conducted (for additional well development)
	14-Jan-04	99.78	None Detected	17.75	NA	NA	17.75	82.03	NA	
	20-Feb-04	99.78	None Detected	16.85	NA	NA	16.85	82.93	NA	
	19-Mar-04	99.78	None Detected	4.89	NA	NA	4.89	94.89	NA	
	23-Apr-04	99.78	None Detected	10.37	NA	NA	10.37	89.41	NA	
	25-May-04	99.78	Nonc Detected	10.57	NA	NA	10.57	89.21	NA	
	18-Jun-04	99.78	None Detected	4.19	NA	NA	4.19	95.59	NA	

ESTIMATED VOLUME OF PRODUCT REMOVED TO DATE = 2196

Table 1-9

Product and Groundwater Level Measurements
Consolidated Edison of New York: Former Maspeth Substation

Well	Date	Measuring Point Elevation (ft AD [2])	Measured Depth To Product (ft TOPVC) [1]	Measured Depth To Water (ft TOPVC) [1]	Measured Product Thickness (feet)	Corrected Product Thickness (feet)	Corrected Depth to Water (ft TOPVC)	Corrected Groundwater Elevation (feet AD [2])	Volume Water/Product Removed (gal)	NOTES

NA = Not Applicable
NM = Product detected but not measured, no interface probe
NPR = No Product Recovered
* = Indicates a sheen but no measurable product
[1] Top of PVC riser pipe
[2] Assumed Datum: Paint spot on facilty assumed to be 100.00 feet
[3] May represent water level in sump of well screen, not groundwater elevation
[4] Broken skimmer at bottom of well, removed and replaced this monitoring episode
[5] Product encountered to bottom of well

Corrected Product Thickness = (Measured Product Thickness) x (Actual/measured thickness)
Actual/measured thickness = 0.59 (see Table 2)

Corrected Depth to Water = Measured Depth to Product + [(Product Thickness) * (1 - Specific Gravity)]

Specific Gravity:

Gasoline	0.72 to 0.76 60° F
Diesel	0.80
No. 2 diesel	0.78 to 0.82 60° F
Motor oil	0.84

Field Tests Indicated Specific Gravity of Product = 0.89 to 0.90

Table 1-10
Free-Product Laboratory Analyses
Former Maspeth Substation

Product Fingerprint

Sample Date Sample Location **Product Fingerprint (Method 310.14 & Mod. 8100) Analyte**	4/1/1999 MW-103	4/26/1999 MW-201	4/26/1999 MW-203	11/2/2000 MW-302
Gasoline	ND	ND	ND	ND
Lubricating Oils	ND	ND	ND	ND
Kerosene Jet Fuel	ND	ND	ND	ND
#2 Fuel Oil Diesel	ND	ND	ND	ND
#4 Fuel Oil	ND	ND	ND	ND
#6 Fuel Oil	ND	ND	ND	ND
Dielectric Fluid	ND	ND	ND	ND
THC By Mod. 8100	ND	ND	ND	100%

PCBs
All units are parts per million (ppm)

Sample Date Sample Location **PCBs (Method 8081&8082) Analyte**	4/1/1999 MW-103	4/26/1999 MW-201	4/26/1999 MW-203	11/2/2000 MW-302
PCB 1016	< 0.0064	< 0.003	< 0.003	< 2.20
PCB 1221	< 0.0088	< 0.003	< 0.003	< 0.82
PCB 1232	< 0.0067	< 0.003	< 0.003	< 3.02
PCB 1242	< 0.0058	< 0.003	< 0.003	< 0.55
PCB 1248	< 0.0021	< 0.003	< 0.003	< 2.47
PCB 1254	< 0.0049	< 0.003	< 0.003	< 1.10
PCB 1260	328	1.1	163	214

Dielectric Fluids

Sample Date Sample Location **Dielectric Fluids Analyte**	11/2/2000 MW-302
Chevron 100	ND
Chevron 500	ND
Silicon Base TR	ND
High Vis. Cable	ND
Low Vis. Cable	ND
Sun#2 Base TR.O	ND
Sun#4 Cable Oil	100%
Sun#6 Cable Oil	ND
Sun#8 II Base T	ND
10C Transformer	ND

TABLE 3-1
HAZARDOUS WASTE CHARACTERISTICS: IDW SOILS
POTENTIAL EXCAVATED SOILS AT FORMER CON EDISON MASPETH SUBSTATION

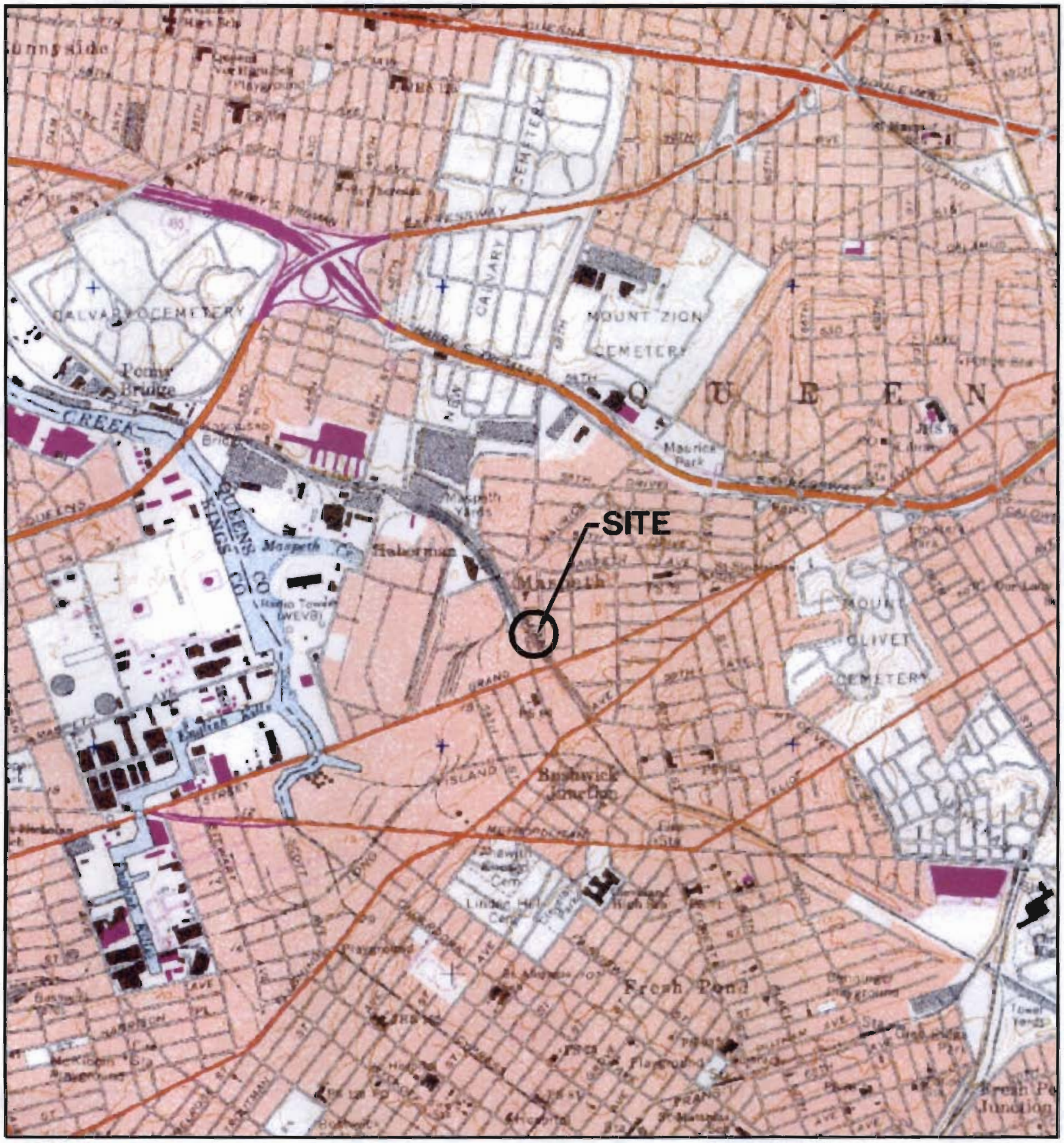
		Anlaytical Results (IDW soil cuttings - 1999 borings)	RCRA HW Limit
Flash Point		> 212 deg F	< 140 deg F
Corrosivity	(pH)	9.40	< 2 or > 12.5
Reactivity		Negative	positive
Reactivity	Releasable Cyanide	< 0.10 ppm	positive
Reactivity	Releasable H2 Sulfide	< 0.0100 ppm	positive
Toxicity			
	Arsenic	< MDL	5.0 ppm
	Barium	< MDL	100.0 ppm
	Benzene	< MDL	0.5 ppm
	Cadmium	< MDL	1.0 ppm
	Carbon tetrachloride	< MDL	0.5 ppm
	Chlordane		0.03 ppm
	Chlorobenzene	< MDL	100.0 ppm
	Chloroform	< MDL	6.0 ppm
	Chromium	< MDL	5.0 ppm
	o-Cresol		200.0 [1] ppm
	m-Cresol		200.0 [1] ppm
	p-Cresol		200.0 [1] ppm
	Cresol		200.0 [1] ppm
	2,4-D	< MDL	10.0 ppm
	1,4-Dichlorobenzene	< MDL	7.5 ppm
	1,2-Dichloroethane	< MDL	0.5 ppm
	1,1-Dichloroethylene	< MDL	0.7 ppm
	2,4-Dinitrotoluene	< MDL	0.13 [2] ppm
	Endrin		0.02 ppm
	Heptachlor (and its hydroxide)	< MDL	0.008 ppm
	Hexachlorobenzene	< MDL	0.13 [2] ppm
	Hexachloro-1,3-butadiene	< MDL	0.5 ppm
	Hexachloroethane	< MDL	3.0 ppm
	Lead	< MDL	5.0 ppm
	Lindane		0.4 ppm
	Mercury	< MDL	0.2 ppm
	Methoxychlor		10.0 ppm
	Methyl ethyl ketone		200.0 ppm
	Nitrobenzene	< MDL	2.0 ppm
	Pentachlorophenol	< MDL	100 ppm
	Pyridine		5.0 [2] ppm
	Selenium	0.16	1.0 ppm
	Silver	< MDL	5.0 ppm
	Tetrachloroethylene	< MDL	0.7 ppm
	Toxaphene		0.5 ppm
	Trichloroethylene	< MDL	0.5 ppm
	2,4,5-Trichlorophenol	< MDL	400.0 ppm
	2,4,6-Trichlorophenol	< MDL	2.0 ppm
	2,4,5-TP (Silvex)		1.0 ppm
	Vinyl chloride	< MDL	0.2 ppm
	PCB 1260	0.471	NRL ppm

1 -- If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/L.

2 -- Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

NRL = No Regulatory Limit specified.

Figures



MAP SOURCE: UNITED STATES GEOLOGICAL SURVEY TOPOGRAPHIC MAP

BROOKLYN, NEW YORK

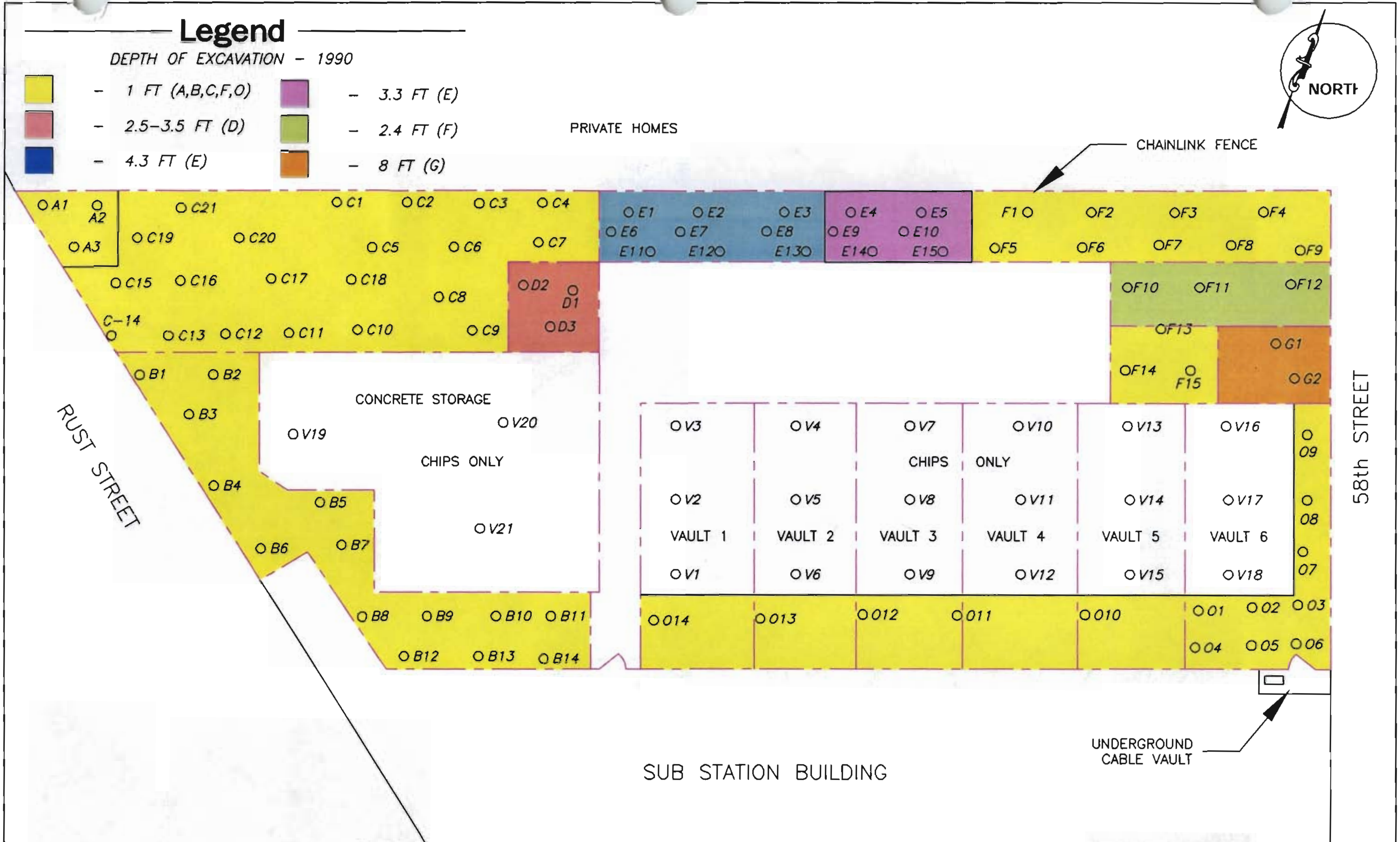
NORTH

2000 0 2000

Scale in feet

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION:					DRAWING TITLE:
PORTSMOUTH, NEW HAMPSHIRE					SITE LOCATION MAP CON EDISON MASPETH SUBSTATION
DATE PREPARED: 4-20-00	DESIGNED BY: LDS	DRAWN BY: LDS	CHECKED BY: BSB	REVIEWED BY: DAA	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	
PROJECT NAME/FILE NAME: MASPETH/LOCUS1		PROJECT NUMBER/PHASE: NHP96280/129		SCALE: 1:24000	PREPARED FOR: CON EDISON OF NY — FIGURE NO. 1



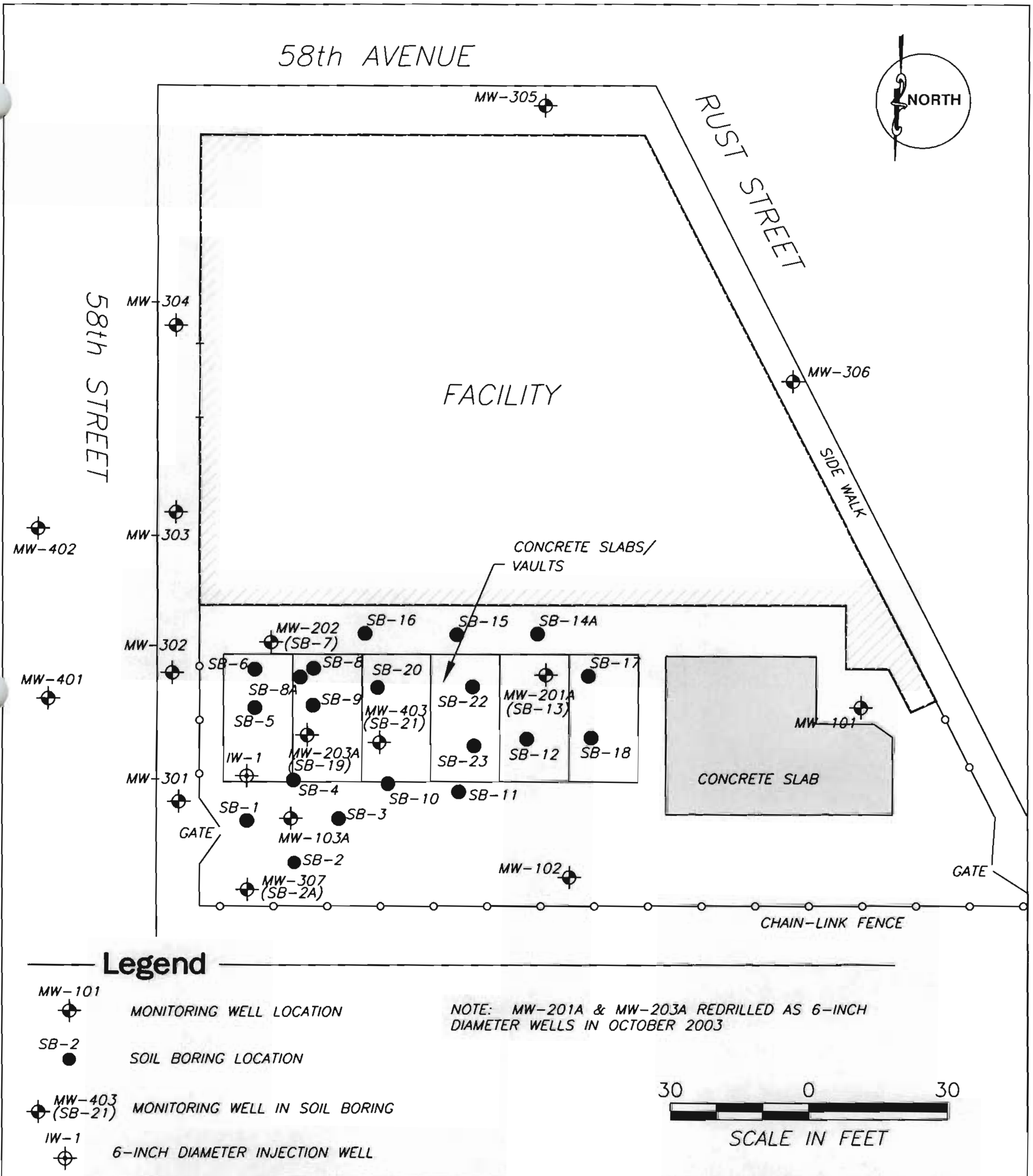
20 0 20

SCALE IN FEET

Jacques Whitford Company, Inc

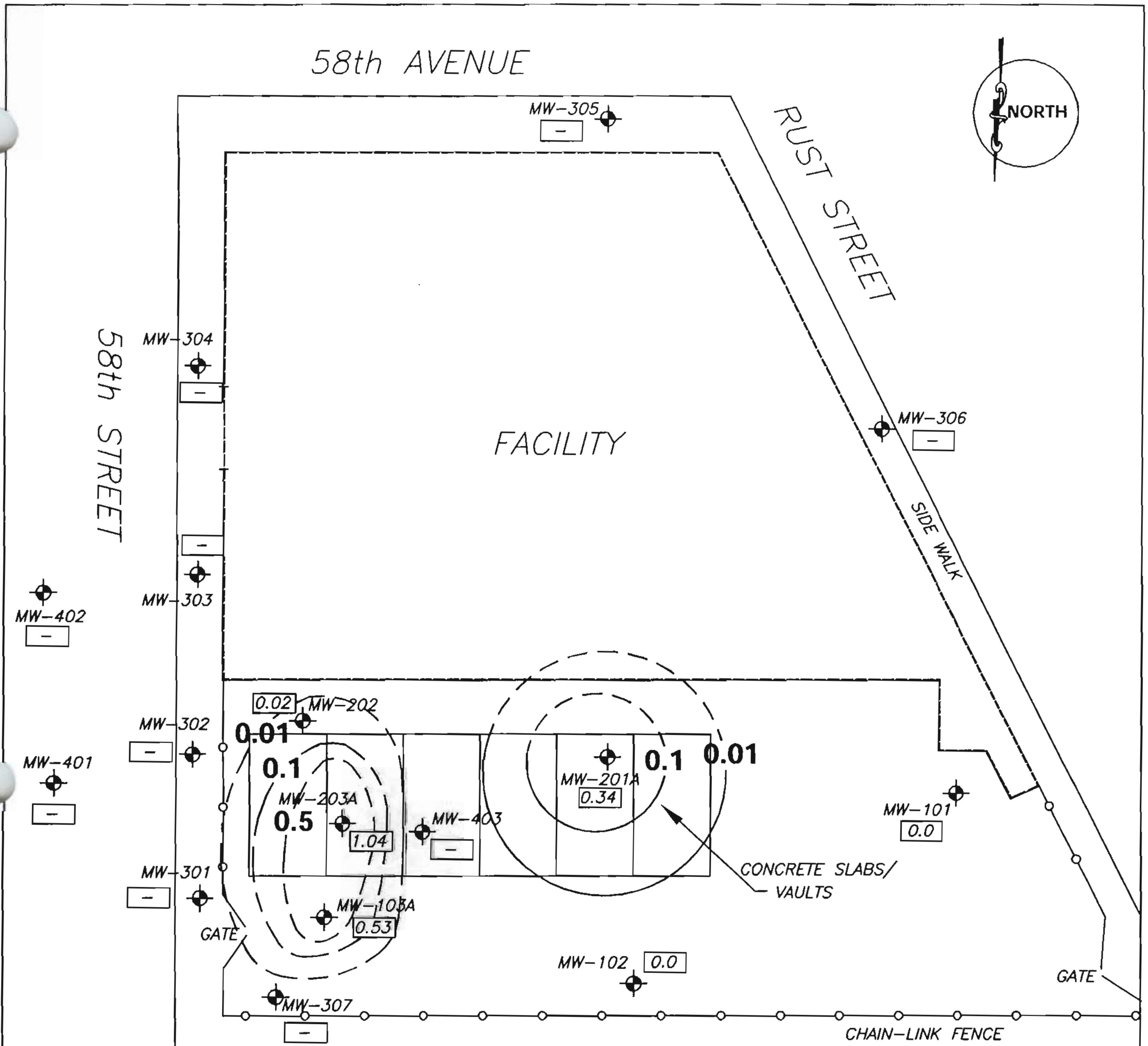
JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE					DRAWING TITLE: SITE PLAN MASPETH SUBSTATION - -
DATE PREPARED: 9-17-02	DESIGNED BY: DFM	DRAWN BY: PD	CHECKED BY: DH	REVIEWED BY: DH	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	
PROJECT NAME/FILE NAME: CONED MAS/SITELAYOUT		PROJECT NUMBER/PHASE: NHP96280/****		SCALE: 1"=20'	PREPARED FOR: CONSOLIDATED EDISON

FIGURE NO. 2



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION:					DRAWING TITLE:
PORTSMOUTH, NEW HAMPSHIRE					SITE PLAN WITH MONITORING WELLS AND SOIL BORINGS FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
DATE PREPARED: 8-6-04	DESIGNED BY: DFM	DRAWN BY: LDS	CHECKED BY: BSB	REVIEWED BY: DFM	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	
PROJECT NAME/FILE NAME: CON EDISON/ACADSITE		PROJECT NUMBER/PHASE: NHP03321/*		SCALE: 1"=30'	PREPARED FOR: CON EDISON — FIGURE NO. 3



NOTES:
1. 300 & 400 SERIES WELLS NOT DRILLED IN APRIL 1999.

30 0 30

SCALE IN FEET

Legend

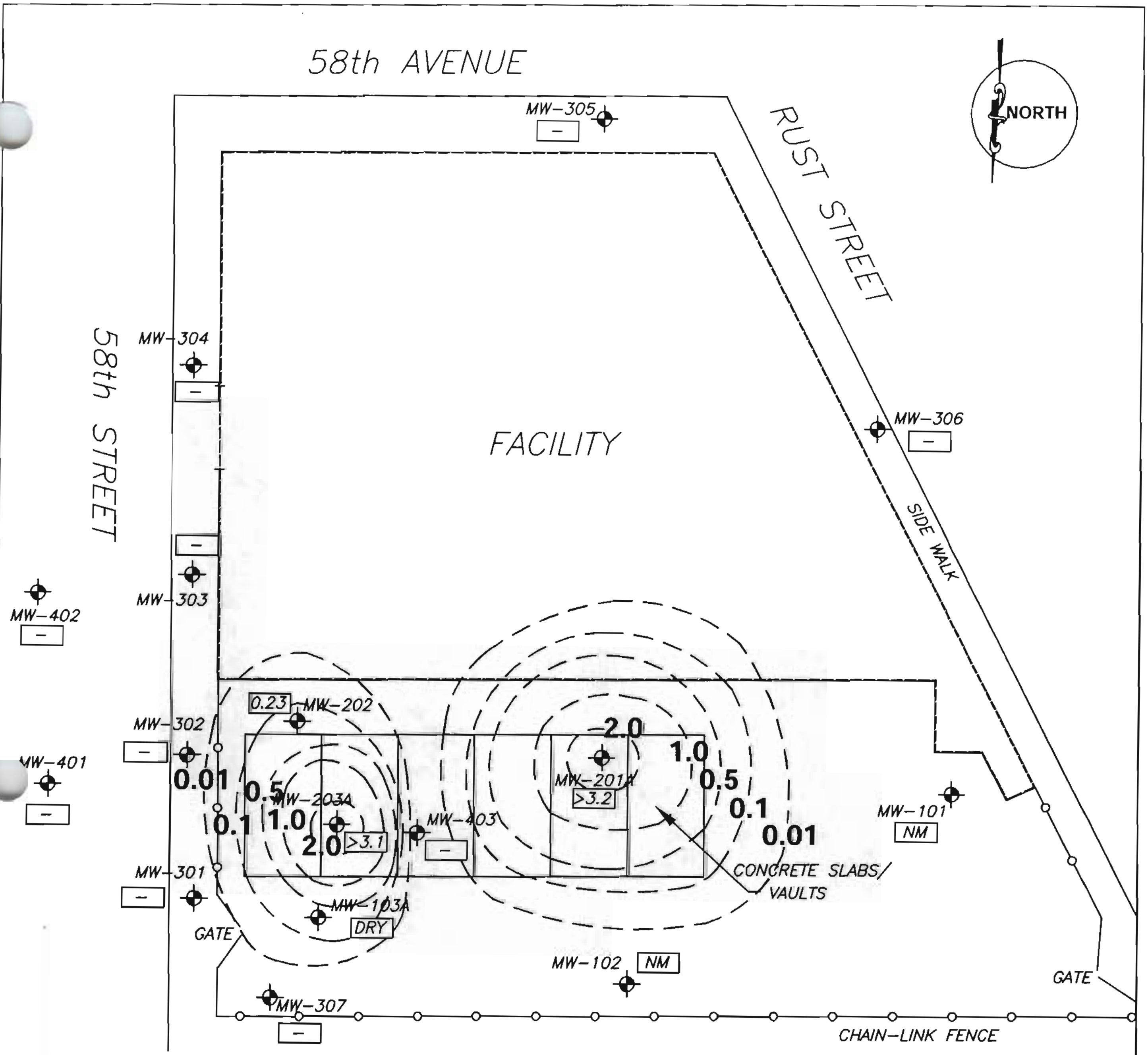
1.48 — MONITORING WELL WITH CORRECTED PRODUCT THICKNESS (IN FEET)

1 — LINES OF EQUAL FREE PRODUCT THICKNESS (FT) (DASHED WHERE INFERRED)

PRODUCT LEVELS MEASURED APRIL 26, 1999

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION:					DRAWING TITLE:
PORTSMOUTH, NEW HAMPSHIRE					**FREE PRODUCT ISOPACH MAP** FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
DATE PREPARED: 9-11-03	DESIGNED BY: DM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DM	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	FIGURE NO. **4a**
PROJECT NAME/FILE NAME: CON EDISON/SITE		PROJECT NUMBER/PHASE: NHP03321/*		SCALE: 1"=30'	PREPARED FOR: CON EDISON



NOTES:
1. 300 & 400 SERIES WELLS NOT DRILLED IN APRIL 2000.
2. NM = NOT MEASURED

30 0 30
SCALE IN FEET

Legend

1.48 — MONITORING WELL WITH CORRECTED PRODUCT THICKNESS (IN FEET)

1 — LINES OF EQUAL FREE PRODUCT THICKNESS (FT) (DASHED WHERE INFERRED)

PRODUCT LEVELS MEASURED APRIL 25, 2000

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE

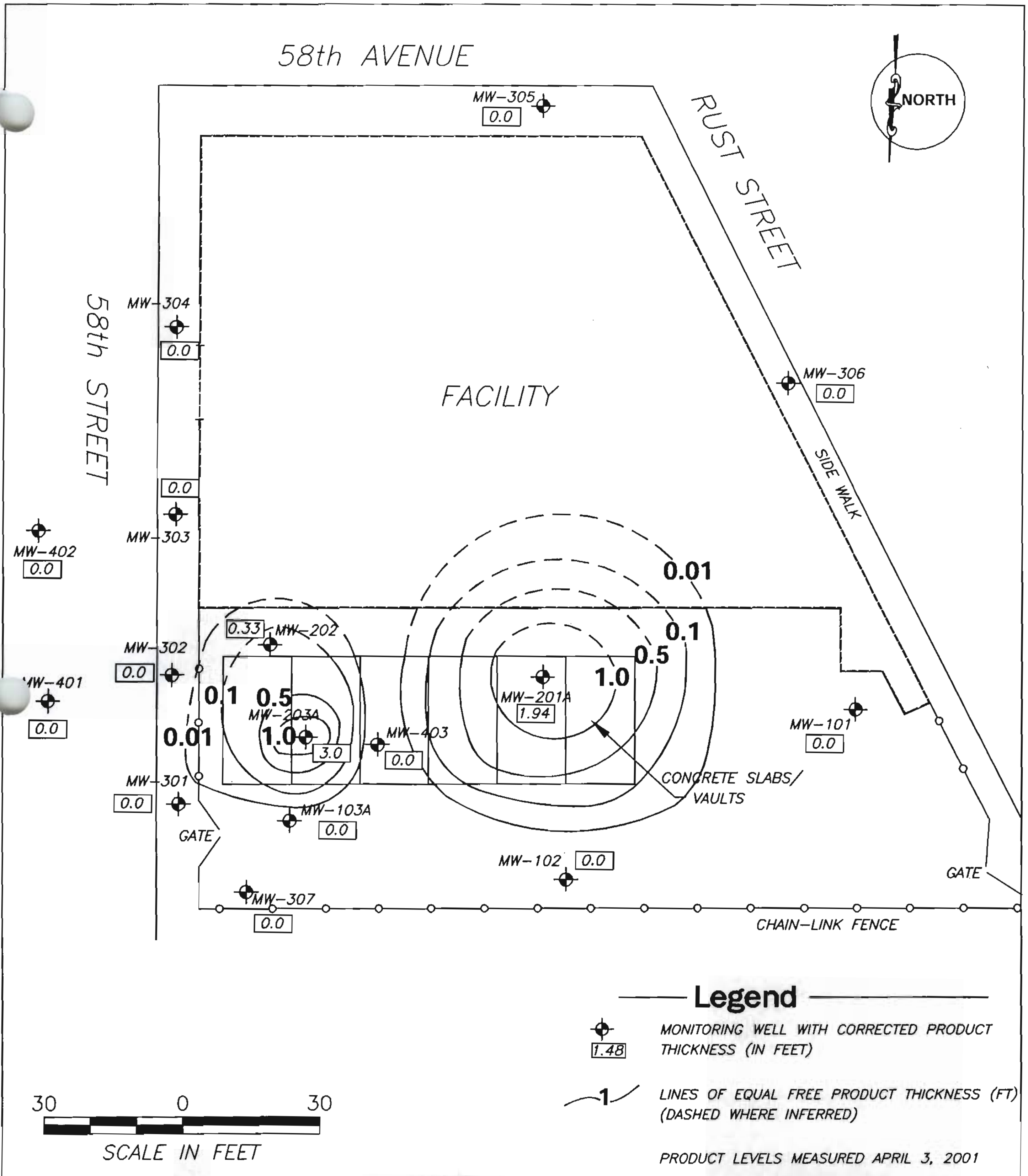
DATE PREPARED:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
9-11-03	DM	TS	BSB	DM
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:

PROJECT NAME/FILE NAME:	PROJECT NUMBER/PHASE:	SCALE:
CON EDISON/SITE	NHP03321/*	1"=30'

DRAWING TITLE:
FREE PRODUCT ISOPACH MAP
FORMER MASPETH SUBSTATION
57-77 RUST STREET
MASPETH, QUEENS, NEW YORK

PREPARED FOR: CON EDISON

FIGURE NO. 4b



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE

DATE PREPARED:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
9-11-03	DM	TS	BSB	DM
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:

PROJECT NAME/FILE NAME:	PROJECT NUMBER/PHASE:	SCALE:
CON EDISON/SITE	NHP03321/*	1"=30'

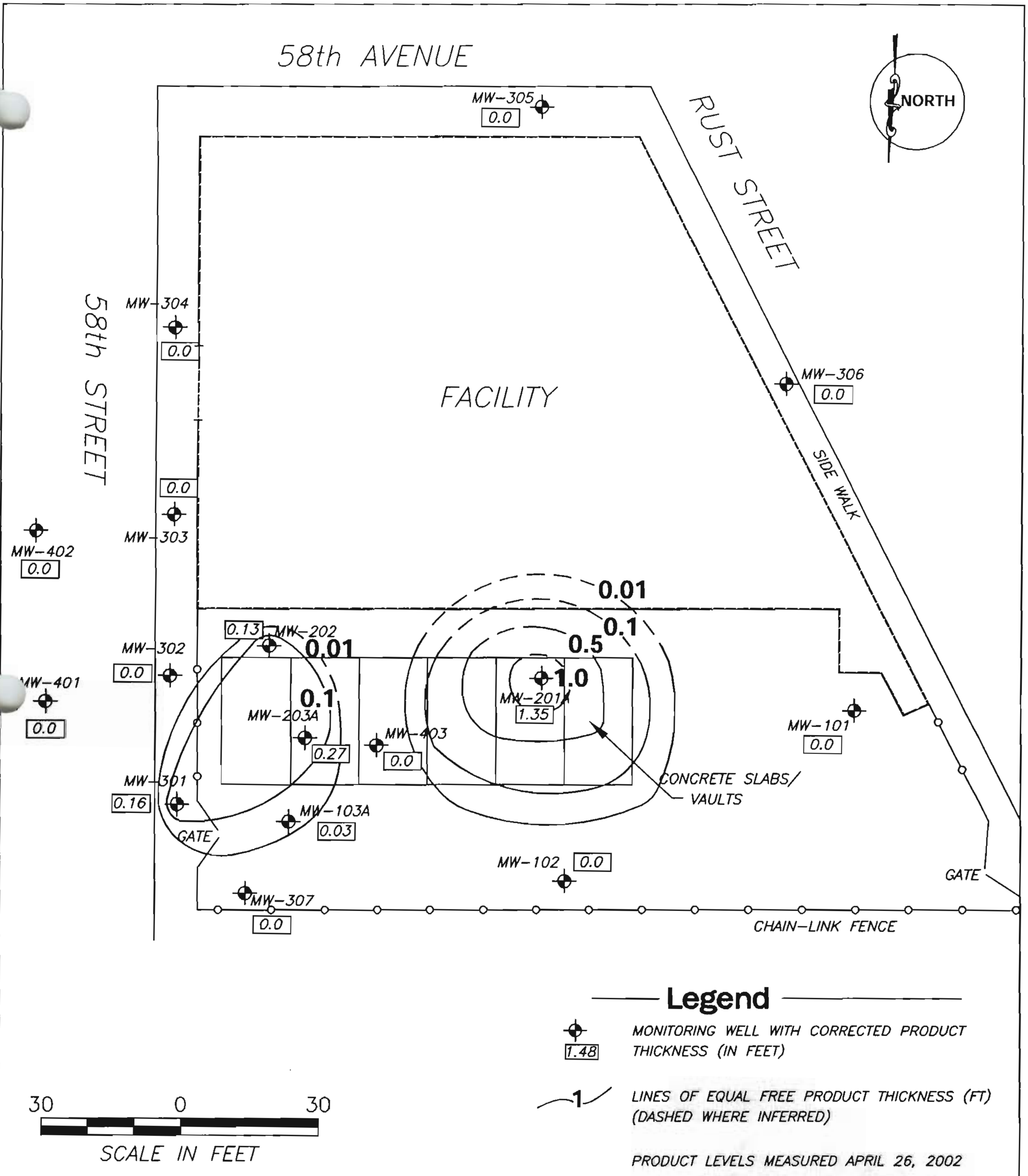
DRAWING TITLE:

FREE PRODUCT ISOPACH MAP

FORMER MASPETH SUBSTATION
57-77 RUST STREET
MASPETH, QUEENS, NEW YORK

FIGURE NO. **4c**

PREPARED FOR: CON EDISON



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE				
DATE PREPARED: 9-11-03	DESIGNED BY: DM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DM
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
PROJECT NAME/FILE NAME: CON EDISON/SITE		PROJECT NUMBER/PHASE: NHP03321/*	SCALE: 1"=30'	

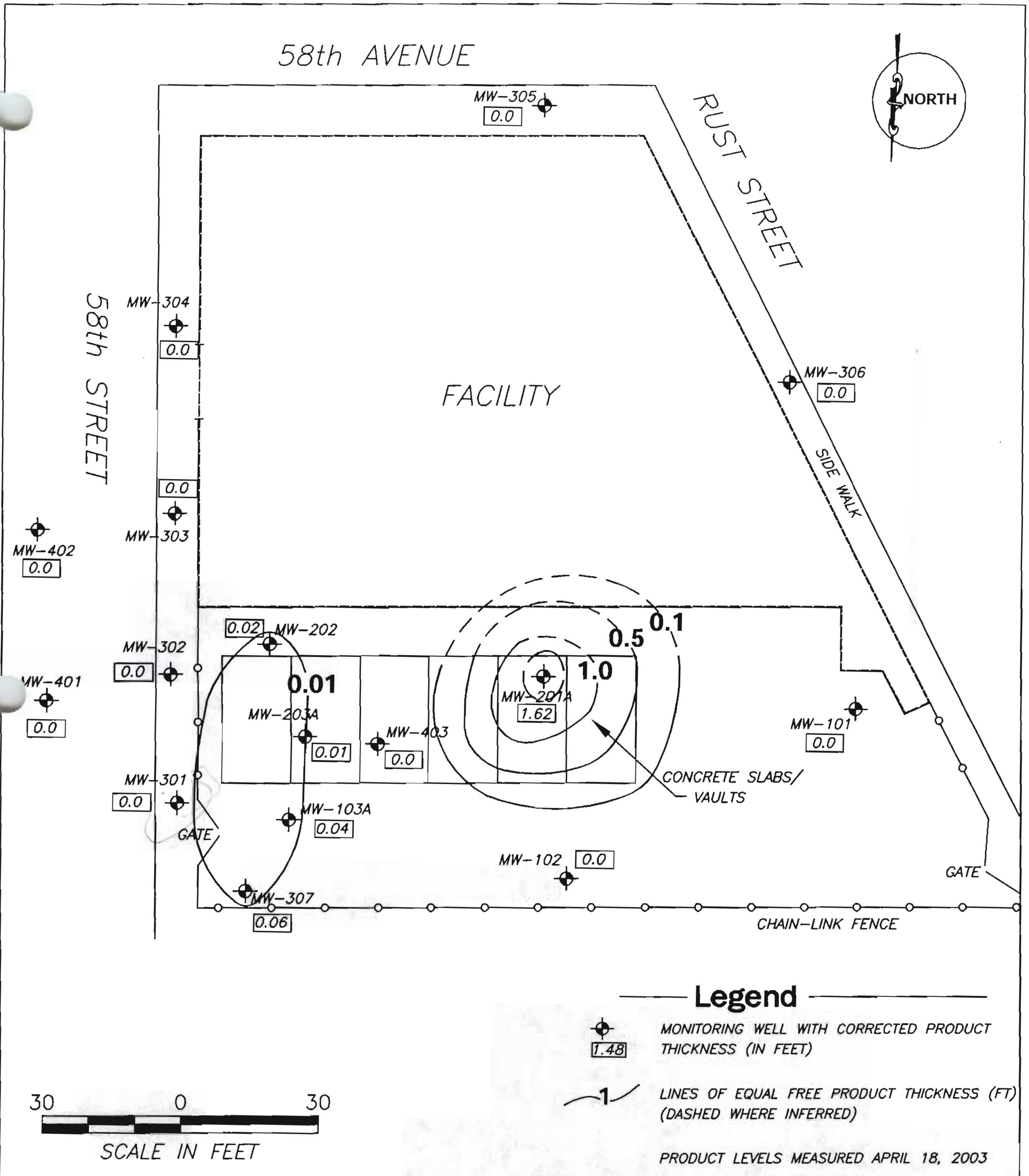
DRAWING TITLE:

FREE PRODUCT ISOPACH MAP

FORMER MASPETH SUBSTATION
57-77 RUST STREET
MASPETH, QUEENS, NEW YORK

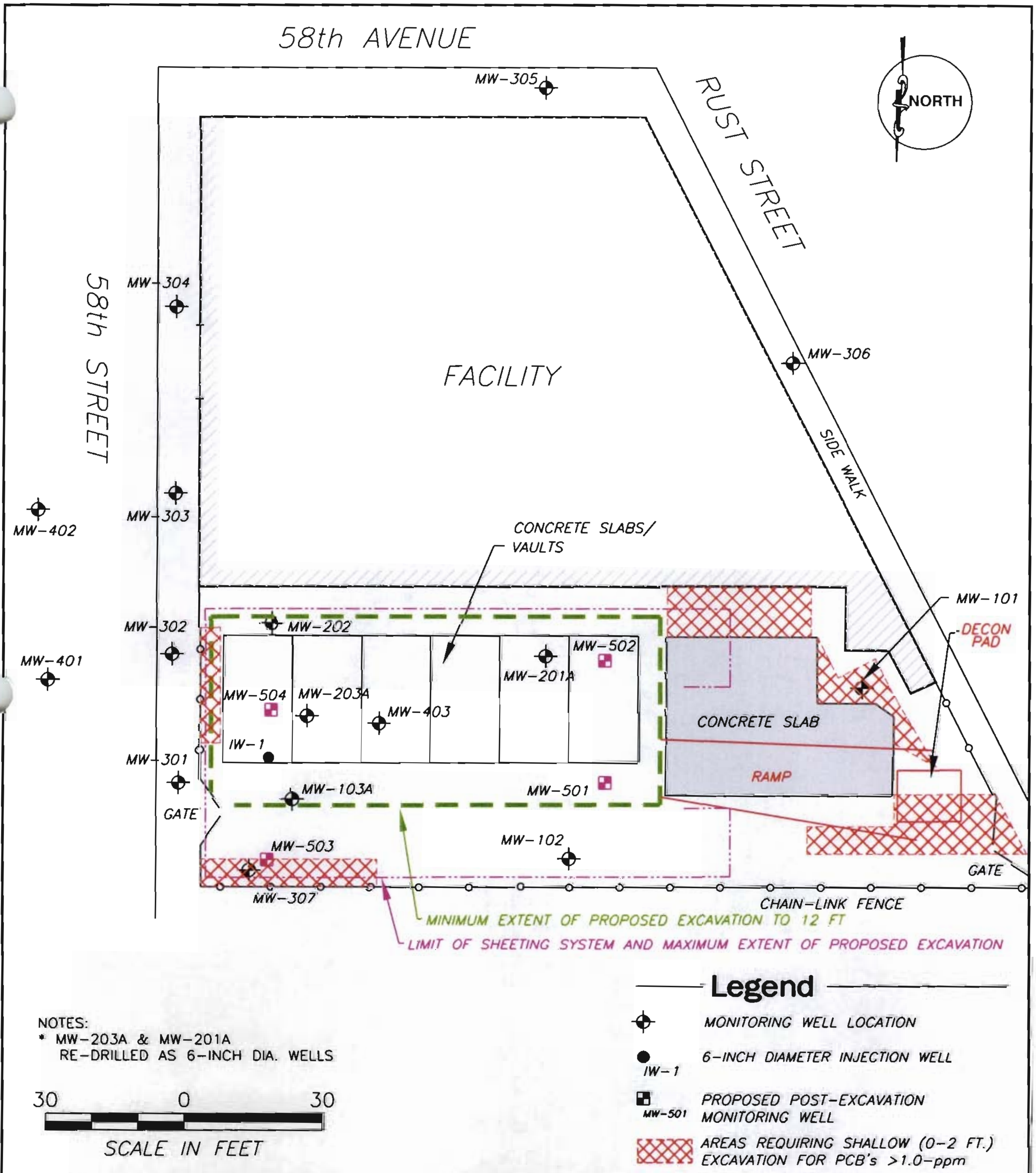
PREPARED FOR: CON EDISON

FIGURE NO. **4d**



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE					DRAWING TITLE: **FREE PRODUCT ISOPACH MAP** FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
DATE PREPARED: 9-11-03	DESIGNED BY: DM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DM	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	FIGURE NO. **4e**
PROJECT NAME/FILE NAME: CON EDISON/SITE		PROJECT NUMBER/PHASE: NHP03321/*		SCALE: 1"=30'	PREPARED FOR: CON EDISON



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION:					DRAWING TITLE:
PORTSMOUTH, NEW HAMPSHIRE					**PROPOSED EXTENT OF SOIL EXCAVATION** FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
DATE PREPARED: 7-16-04	DESIGNED BY: DFM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DFM	
REVISION DATE: 8-23-04	REVISION NO: 1	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DH	
PROJECT NAME/FILE NAME: CON EDISON MASPETH/RAWP		PROJECT NUMBER/PHASE: NHP03321/*		SCALE: 1"=30'	PREPARED FOR: CON EDISON — FIGURE NO. 5

Appendix A

IDW Soil TCLP Laboratory Analytical Results

Con Edison Company of N.Y.

The Company you know. The people you trust.

environment health & safety e³

Environment, Health and Safety - Remediation
31-01 20th Ave, Bldg 138
Long Island City, New York 11101
Fax: (718)932-2687

Facsimile Transmittal Sheet

To: David Hill	**Company:** TWC
Fax: 603-431-5982	**Pages:**
Phone:	**Date:**
Re:	**CC:**

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Per Request

Comments:

David

As you requested ~~the~~ attached are the results for purge water & soil cuttings

Bon

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

Custody Document I9814
Received: 4/8/99 15:45
Sampled by: Bruce Bline

Project: Con Ed - Maspeth
57-77 Rust Street
Maspeth, Queens,
NY

Manager: Bharat Mukhi

Respectfully submitted,
Environmental Testing Laboratories,Inc.

Assistant Laboratory Director

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
VA Cert. # 108
CA Cert. # 2253
NH Cert. # 252592-BA
MA Cert. # NY061
RI Cert. # 161
PA Cert. # 68-535

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - TCLP EPA 8260

Sample: I9814-1

Client Sample ID: Maspeth Cuttings
Collected: 4/8/99 11.40
Matrix: Soil
Type: Composite
% Solids: 84.0%
Remarks: See case narrative

Analyzed: 4/20/99
Units: ppm

CAS No	Analyte	MDL	Concentration	Q
75-71-8	Dichlorodifluoromethane	0.0050	0.0050	U
74-87-3	Chloromethane	0.0036	0.0036	U
75-01-4	Vinyl Chloride	0.0035	0.0035	U
74-83-9	Bromomethane	0.0025	0.0025	U
75-00-3	Chloroethane	0.0033	0.0033	U
75-69-4	Trichlorofluoromethane	0.0028	0.0028	U
75-35-4	1,1-Dichloroethene	0.0021	0.0021	U
75-09-2	Methylene Chloride	0.0020	**0.012**	
156-60-5	t-1,2-Dichloroethene	0.0027	0.0027	U
75-34-3	1,1-Dichloroethane	0.0014	0.0014	U
590-20-7	2,2-Dichloropropane	0.0028	0.0028	U
156-59-2	c-1,2-Dichloroethene	0.0019	0.0019	U
67-66-3	Chloroform	0.0013	0.0013	U
74-97-5	Bromochloromethane	0.0014	0.0014	U
71-55-6	1,1,1-Trichloroethane	0.0011	0.0011	U
563-58-6	1,1-Dichloropropene	0.0050	0.0050	U
56-23-5	Carbon Tetrachloride	0.0018	0.0018	U
107-06-2	1,2-Dichloroethane	0.0016	0.0016	U
71-43-2	Benzene	0.0014	0.0014	U
79-01-6	Trichloroethene	0.0017	0.0017	U
78-87-5	1,2-Dichloropropane	0.0016	0.0016	U
75-27-4	Bromodichloromethane	0.0018	0.0018	U
74-95-3	Dibromomethane	0.0021	0.0021	U
10061-01-5	c-1,3-Dichloropropene	0.0018	0.0018	U
108-88-3	Toluene	0.0016	**0.040**	
10061-02-6	t-1,3-Dichloropropene	0.0018	0.0018	U
79-00-5	1,1,2-Trichloroethane	0.0031	0.0031	U
142-28-9	1,3-Dichloropropane	0.0021	0.0021	U
127-18-4	Tetrachloroethene	0.00080	0.00080	U
124-48-1	Dibromochloromethane	0.00080	0.00080	U
106-93-4	1,2-Dibromoethane	0.0015	0.0015	U
108-90-7	Chlorobenzene	0.00070	0.00070	U
630-20-6	1,1,1,2-Tetrachloroethane	0.0014	0.0014	U
100-41-4	Ethylbenzene	0.0017	**0.0051**	
108-38-3	m,p-xylene	0.0017	**0.023**	
95-47-6	o-xylene	0.00080	**0.0100**	
100-42-5	Styrene	0.00080	0.00080	U
98-82-8	Isopropylbenzene	0.0010	0.0010	U
75-25-2	Bromoform	0.0012	0.0012	U

Environmental Testing Laboratories, Inc.

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4/26/99

ANALYSIS REPORT - TCLP EPA 8260

Sample: I9814-1-continue

Client Sample ID: Maspeth Cuttings | Collected: 4/8/99 11.40
Matrix: Soil | Type: Composite | % Solids: 84.0%
Remarks: See case narrative

Analyzed: 4/20/99 | Units: ppm

CAS No	Analyte	MDL	Concentration	Q
79-34-5	1,1,2,2-Tetrachloroethane	0.0013	0.0013	U
96-18-4	1,2,3-Trichloropropane	0.0044	0.0044	U
103-65-1	n-Propylbenzene	0.0014	0.0014	U
108-86-1	Bromobenzene	0.0010	0.0010	U
108-67-8	1,3,5-Trimethylbenzene	0.0012	0.0012	U
95-49-8	2-Chlorotoluene	0.0017	0.0017	U
106-43-4	4-Chlorotoluene	0.0016	0.0016	U
99-87-6	4-Isopropyltoluene	0.0010	0.0010	U
95-63-6	1,2,4-Trimethylbenzene	0.0013	0.0061	
135-98-8	sec-Butylbenzene	0.00040	0.00040	U
98-06-6	tert-Butylbenzene	0.0013	0.0013	U
541-73-1	1,3-Dichlorobenzene	0.0010	0.0010	U
106-46-7	1,4-Dichlorobenzene	0.0015	0.0015	U
104-51-8	n-Butylbenzene	0.0014	0.0014	U
95-50-1	1,2-Dichlorobenzene	0.0013	0.0013	U
96-12-8	1,2-Dibromo-3-chloropropane	0.0050	0.0050	U
120-82-1	1,2,4-Trichlorobenzene	0.0025	0.0025	U
87-68-3	Hexachlorobutadiene	0.0024	0.0024	U
91-20-3	Naphthalene	0.0027	0.0083	
87-61-6	1,2,3-Trichlorobenzene	0.0038	0.0038	U

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4/26/99

ANALYSIS REPORT - EPA 8270

Sample: I9814-2
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks:

Analyzed: 4/16/99 Units: ppb

CAS No	Analyte	MDL	Concentration	Q
108-95-2	Phenol	0.24	0.24	U
111-44-4	bis(2-Chloroethyl)ether	1.08	1.08	U
95-57-8	2-Chlorophenol	1.08	1.08	U
541-73-1	1,3-Dichlorobenzene	1.37	1.37	U
106-46-7	1,4-Dichlorobenzene	1.45	1.45	U
100-51-6	Benzyl alcohol	1.43	1.43	U
95-50-1	1,2-Dichlorobenzene	1.10	1.10	U
95-48-7	2-Methylphenol	1.16	1.16	U
108-60-1	bis(2-Chloroisopropyl)ether	0.66	0.66	U
106-44-5	3,4-Methylphenol	1.23	1.23	U
621-64-7	N-Nitroso-di-n-propylamine	0.74	0.74	U
67-72-1	Hexachloroethane	1.66	1.66	U
98-95-3	Nitrobenzene	0.70	0.70	U
78-59-1	Isophorone	0.64	0.64	U
88-75-5	2-Nitrophenol	1.06	1.06	U
105-67-9	2,4-Dimethylphenol	1.57	1.57	U
65-85-0	Benzoic acid	3.15	10.8	
111-91-1	bis(2-Chloroethoxy)methane	0.92	0.92	U
120-83-2	2,4-Dichlorophenol	0.73	0.73	U
120-82-1	1,2,4-Trichlorobenzene	1.19	1.19	U
91-20-3	Naphthalene	0.98	0.98	U
106-47-8	4-Chloroaniline	0.37	0.37	U
87-68-3	Hexachlorobutadiene	1.32	1.32	U
59-50-7	4-Chloro-3-methylphenol	0.55	0.55	U
91-57-6	2-Methylnaphthalene	1.11	1.11	U
77-47-4	Hexachlorocyclopentadiene	3.55	3.55	U
88-06-2	2,4,6-Trichlorophenol	0.99	0.99	U
95-95-4	2,4,5-Trichlorophenol	0.50	0.50	U
91-58-7	2-Chloronaphthalene	0.79	0.79	U
88-74-4	2-Nitroaniline	0.63	0.63	U
131-11-3	Dimethyl phthalate	2.43	2.43	U
208-96-8	Acenaphthylene	0.82	0.82	U
606-20-2	2,6-Dinitrotoluene	0.71	0.71	U
99-09-2	3-Nitroaniline	0.67	0.67	U
83-32-9	Acenaphthene	0.97	0.97	U
51-28-5	2,4-Dinitrophenol	3.81	3.81	U
100-02-7	4-Nitrophenol	1.88	1.88	U
132-64-9	Dibenzofuran	0.77	0.77	U
121-14-2	2,4-Dinitrotoluene	0.75	0.75	U

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - EPA 8270

Sample: I9814-2-continue
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks:

Analyzed: 4/16/99 Units: ppb

CAS No	Analyte	MDL	Concentration	Q
84-66-2	Diethylphthalate	3.28	3.28	U
7005-72-3	4-Chlorophenyl-phenyl ether	0.60	0.60	U
86-73-7	Fluorene	0.64	0.64	U
100-01-6	4-Nitroaniline	0.88	0.88	U
534-52-1	4,6-Dinitro-2-methylphenol	3.19	3.19	U
86-30-6	N-nitrosodiphenylamine	0.73	0.73	U
101-55-3	4-Bromophenyl-phenylether	0.52	0.52	U
118-74-1	Hexachlorobenzene	0.43	0.43	U
87-86-5	Pentachlorophenol	3.02	3.02	U
85-01-8	Phenanthrene	0.67	0.67	U
120-12-7	Anthracene	0.59	0.59	U
84-74-2	Di-n-butylphthalate	2.94	2.94	U
206-44-0	Fluoranthene	0.53	0.53	U
129-00-0	Pyrene	0.61	0.61	U
85-68-7	Butylbenzylphthalate	2.91	2.91	U
91-94-1	3,3'-Dichlorobenzidine	0.49	0.49	U
56-55-3	Benzo(a)anthracene	1.04	1.04	U
218-01-9	Chrysene	0.71	0.71	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.98	13.0	B
117-84-0	Di-n-octylphthalate	1.05	1.05	U
205-99-2	Benzo(b)fluoranthene	1.38	1.38	U
207-08-9	Benzo(k)fluoranthene	1.79	1.79	U
50-32-8	Benzo(a)pyrene	0.71	0.71	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.64	0.64	U
53-70-3	Dibenzo(a,h)anthracene	0.60	0.60	U
191-24-2	Benzo(g,h,i)perylene	0.63	0.63	U

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - TCLP EPA 8270 BNA

Sample: I9814-1
Client Sample ID: Maspeth Cuttings
Collected: 4/8/99 11.40
Matrix: Soil
Type: Composite
% Solids: 84.0%
Remarks:

Analyzed: 4/16/99
Units: ppm

CAS No	Analyte	MDL	Concentration	Q
108-95-2	Phenol	0.0024	0.0024	U
111-44-4	bis(2-Chloroethyl)ether	0.011	0.011	U
95-57-8	2-Chlorophenol	0.011	0.011	U
541-73-1	1,3-Dichlorobenzene	0.014	0.014	U
106-46-7	1,4-Dichlorobenzene	0.014	0.014	U
100-51-6	Benzyl alcohol	0.014	0.014	U
95-50-1	1,2-Dichlorobenzene	0.011	0.011	U
95-48-7	2-Methylphenol	0.012	0.012	U
108-60-1	bis(2-Chloroisopropyl)ether	0.0066	0.0066	U
106-44-5	3,4-Methylphenol	0.012	0.012	U
621-64-7	N-Nitroso-di-n-propylamine	0.0074	0.0074	U
67-72-1	Hexachloroethane	0.017	0.017	U
98-95-3	Nitrobenzene	0.0070	0.0070	U
78-59-1	Isophorone	0.0064	0.0064	U
88-75-5	2-Nitrophenol	0.011	0.011	U
105-67-9	2,4-Dimethylphenol	0.016	0.016	U
65-85-0	Benzoic acid	0.032	0.032	U
111-91-1	bis(2-Chloroethoxy)methane	0.0092	0.0092	U
120-83-2	2,4-Dichlorophenol	0.0073	0.0073	U
120-82-1	1,2,4-Trichlorobenzene	0.012	0.012	U
91-20-3	Naphthalene	0.0098	0.0098	U
106-47-8	4-Chloroaniline	0.0037	0.0037	U
87-68-3	Hexachlorobutadiene	0.013	0.013	U
59-50-7	4-Chloro-3-methylphenol	0.0055	0.0055	U
91-57-6	2-Methylnaphthalene	0.011	0.011	U
77-47-4	Hexachlorocyclopentadiene	0.036	0.036	U
88-06-2	2,4,6-Trichlorophenol	0.0099	0.0099	U
95-95-4	2,4,5-Trichlorophenol	0.0050	0.0050	U
91-58-7	2-Chloronaphthalene	0.0079	0.0079	U
88-74-4	2-Nitroaniline	0.0063	0.0063	U
131-11-3	Dimethyl phthalate	0.024	0.024	U
208-96-8	Acenaphthylene	0.0082	0.0082	U
606-20-2	2,6-Dinitrotoluene	0.0071	0.0071	U
99-09-2	3-Nitroaniline	0.0067	0.0067	U
83-32-9	Acenaphthene	0.0097	0.0097	U
51-28-5	2,4-Dinitrophenol	0.038	0.038	U
100-02-7	4-Nitrophenol	0.019	0.019	U
132-64-9	Dibenzofuran	0.0077	0.0077	U
121-14-2	2,4-Dinitrotoluene	0.0075	0.0075	U

Environmental Testing Laboratories, Inc.

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4/26/99

ANALYSIS REPORT - TCLP EPA 8270 BNA

Sample: I9814-1-continue

Client Sample ID: Maspeth Cuttings | Collected: 4/8/99 11.40

Matrix: Soil | Type: Composite | % Solids: 84.0%

Remarks:

Analyzed: 4/16/99 | Units: ppm

CAS No	Analyte	MDL	Concentration	Q
84-66-2	Diethylphthalate	0.033	0.033	U
7005-72-3	4-Chlorophenyl-phenylether	0.0060	0.0060	U
86-73-7	Fluorene	0.0064	0.0064	U
100-01-6	4-Nitroaniline	0.0088	0.0088	U
534-52-1	4,6-Dinitro-2-methylphenol	0.032	0.032	U
86-30-6	N-nitrosodiphenylamine	0.0073	0.0073	U
101-55-3	4-Bromophenyl-phenylether	0.0052	0.0052	U
118-74-1	Hexachlorobenzene	0.0043	0.0043	U
87-86-5	Pentachlorophenol	0.030	0.030	U
85-01-8	Phenanthrene	0.0067	0.0067	U
120-12-7	Anthracene	0.0059	0.0059	U
84-74-2	Di-n-butylphthalate	0.029	0.029	U
206-44-0	Fluoranthene	0.0053	0.0053	U
129-00-0	Pyrene	0.0061	0.0061	U
85-68-7	Butylbenzylphthalate	0.029	0.029	U
91-94-1	3,3'-Dichlorobenzidine	0.0049	0.0049	U
56-55-3	Benzo(a)anthracene	0.0100	0.0100	U
218-01-9	Chrysene	0.0071	0.0071	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.0098	0.0098	U
117-84-0	Di-n-octylphthalate	0.0100	0.0100	U
205-99-2	Benzo(b)fluoranthene	0.014	0.014	U
207-08-9	Benzo(k)fluoranthene	0.018	0.018	U
50-32-8	Benzo(a)pyrene	0.0071	0.0071	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.0064	0.0064	U
53-70-3	Dibenzo(a,h)anthracene	0.0060	0.0060	U
191-24-2	Benzo(g,h,i)perylene	0.0063	0.0063	U

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - PCB's EPA METHOD 8081/608

Sample: I9814-1
Client Sample ID: Maspeth Cuttings
Matrix: Soil
Remarks: Extracted 4/9/99

Type: Composite

Collected: 4/8/99 11.40
% Solids: 84.0%

Analyzed: 4/12/99

Units: ppb

CAS No	Analyte	MDL	Concentration	Q
12674-11-2	PCB 1016	11.8	11.8	U
11104-28-2	PCB 1221	23.9	23.9	U
11141-16-5	PCB 1232	1.07	1.07	U
53469-21-9	PCB 1242	11.8	11.8	U
12672-29-6	PCB 1248	11.8	11.8	U
11097-69-1	PCB 1254	11.8	11.8	U
11096-82-5	PCB 1260	11.8	471	

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4/26/99

ANALYSIS REPORT - Polychlorinated Biphenyls

Sample: I9814-2
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks: Extracted on 4/12/99

Analyzed: 4/13/99 Units: ppt

CAS No	Analyte	MDL	Concentration	Q
12674-11-2	PCB 1016	10.0	10.0	U
11104-28-2	PCB 1221	20.0	20.0	U
11141-16-5	PCB 1232	10.0	10.0	U
53469-21-9	PCB 1242	10.0	10.0	U
12672-29-6	PCB 1248	10.0	10.0	U
11097-69-1	PCB 1254	10.0	10.0	U
11096-82-5	PCB 1260	10.0	143	

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4/26/99

ANALYSIS REPORT - Pet Product ID - 310.13

Sample: I9814-2
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks: see case narrative

Analyzed: 4/19/99 Units: ppm

CAS No	Analyte	MDL	Concentration	Q
	Gasoline	NA	ND	
	Lubricating Oils	NA	ND	
	Kerosene/Jet Fuel	NA	ND	
	#2 Fuel Oil/Diesel	NA	ND	
	#4 Fuel Oil	NA	ND	
	#6 Fuel Oil	NA	ND	

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4/26/99

ANALYSIS REPORT - Metals-Cd,Cu,Pb,Hg,Ni,Zn

Sample: I9814-2

Client Sample ID: Maspeth Purge

Collected: 4/8/99 12.25

Matrix: Liquid

Type: Grab

Remarks:

Analyzed: 4/9/99

Units: ppm

CAS No	Analyte	MDL	Concentration	Q
7440-43-9	Cadmium	0.0033	0.0033	U
7440-50-8	Copper	0.017	0.011	J
7439-92-1	Lead	0.0022	0.012	
7439-97-6	Mercury	0.000050	0.000080	
7440-02-0	Nickel	0.028	0.028	U
7440-66-6	Zinc	0.017	0.12	

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - TCLP - Metals

Sample: I9814-1

Client Sample ID: Maspeth Cuttings

Collected: 4/8/99 11.40

Matrix: Soil

Type: Composite

% Solids: 84.0%

Remarks:

Analyzed: 4/14/99

Units: ppm

CAS No	Analyte	MDL	Concentration	Q
7440-38-2	Arsenic	0.050	0.050	U
7440-39-3	Barium	1.00	1.00	U
7440-43-9	Cadmium	0.030	0.030	U
7440-47-3	Chromium	0.080	0.080	U
7439-92-1	Lead	0.020	0.020	U
7439-97-6	Mercury	0.000050	0.000050	U
7782-49-2	Selenium	0.030	0.16	
7440-22-4	Silver	0.080	0.080	U

Environmental Testing Laboratories, Inc.
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4/26/99

ANALYSIS REPORT - BTEX by EPA 602/8021

Sample: I9814-2
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks:

Analyzed: 4/13/99 Units: ppb

CAS No	Analyte	MDL	Concentration	Q
71-43-2	Benzene	0.14	0.14	U
108-88-3	Toluene	0.080	0.080	U
100-41-4	Ethylbenzene	0.060	0.060	U
1330-20-7	Xylenes(Total)	0.12	0.66	U

Sample: I9814-3
Client Sample ID: Trip Blank Collected: 4/8/99
Matrix: Liquid Type: Blank
Remarks:

Analyzed: 4/12/99 Units: ppb

CAS No	Analyte	MDL	Concentration	Q
71-43-2	Benzene	0.070	0.070	U
108-88-3	Toluene	0.040	0.040	U
100-41-4	Ethylbenzene	0.030	0.030	U
1330-20-7	Xylenes(Total)	0.060	0.33	U

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

ANALYSIS REPORT - ANALYSIS REPORT - WET LAB

Sample: I9814-1
Client Sample ID: Maspeth Cuttings Collected: 4/8/99 11.40
Matrix: Soil Type: Composite % Solids: 84.0%
Remarks:

Analyzed	Parameter	MDL	Result	Q	Units
4/9/99	Total Rec.Petr. Hydrocarbons	4.54	**281**		ppm
4/12/99	Flash Point	1.00	**>100**		deg C
4/9/99	pH over-aged	NA	**9.40**		
4/9/99	Temperature	NA	**20.8**		C
4/14/99	Releasable Cyanide	0.10	0.10	U	ppm
4/14/99	Releasable H2 Sulfide	0.0100	0.0100	U	ppm
4/14/99	Reactivity	NA	Negative		

Sample: I9814-2
Client Sample ID: Maspeth Purge Collected: 4/8/99 12.25
Matrix: Liquid Type: Grab
Remarks:

Analyzed	Parameter	MDL	Result	Q	Units
4/12/99	Amenable Cyanide	0.0100	0.0100	U	ppm
4/9/99	Chromium +6	0.0100	0.0100	U	ppm
4/12/99	Cyanide	0.0060	0.0060	U	ppm
4/13/99	Oil & Grease	3.21	**15.4**		ppm
4/9/99	pH-over-aged	NA	**7.16**		
4/9/99	Temperature	NA	**19.1**		C
4/20/99	Phenols	0.0055	**0.011**		ppm
4/12/99	Total Dissolved Solids	20.0	**516**		mg/l
4/9/99	Total Suspended Solids	NA	**168**		mg/L

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

Case Narrative

PETPRODUCT

Sample I9814-2 showed some foaming activity, a lower dilution was not possible.

The sample contains organic compounds,but they do not belong to any of the target pet products.

TCLP8260
The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl,2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 10, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

Reviewed by: ____________________

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735 - Phone 516-249 -1456 Fax - 516-249-8344

4/26/99

1.ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is a non-detect.

J - Indicates an estimated value. The concentration was detected lower than the Contract Required Detection Limit, but greater than the Method Detection Limit.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag identifies all compounds identified in an analysis at a secondary dilution.

2.INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - entered when the analyte was analyzed for, but not detected.

Q - qualifier specific entries and their meanings are as follows:

E - the reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
NR - when the analyte is not required to be analyzed.
P - ICP
T - Titrimetric

ETL
Environmental Testing Laboratories, Inc.

Con Edison of NY
31-01 20th Ave, Bldg 136
Long Island City, NY 11105

516-249-[illegible]456
516-249-3150
FAX 516-249-8344

208 Route 109 • Farmingdale • New York 11735

NY NH MA VT
NJ RI DE ME
CT PA MD VA

SOIL, WATER & AIR ANALYSIS • ORGANIC/INORGANIC • PETRO CHEMICAL

CHAIN OF CUSTODY DOCUMENT

I 9814

Project Name: MASPETH
Project Manager: Bharat Mukhi
Sampler (Signature): [signature] (Print): BRUCE P BLINE
Project Address: 57-77 RUST ST., MASPETH, QUEENS, NY
Bill to: CON ED / Bharat JN:
☐ Rush by / /

SAMPLE INFO — Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. * Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	601/8010	602/8020	BTX/BTEX	MTBE	624/8240/8260	625/8270/BN	(PCB)/Pesticides	Pet. Prods. 310.13	TCLP Metals	RCRA Metals	Reactivity	pH - Corrosivity	Ignitability	418.1-TRPH	TCLP BNAs	TCLP VOCs	OIL + GREASE	TCL BNs	Cr+6
1	4/8/99	1140	C	S	MASPETH CUTTINGS							✓		✓		✓	✓	✓	✓	✓	✓			
2	4/8/99	1225	G	L	MASPETH PURGE			✓				✓	✓				✓					✓	✓	✓
3			G	L	TRIP BLANK			✓																
4																								
5																								
6																								
7					MASPETH PURGE HAS DETERGENT IN SAMPLE																			
8																								
9																								
10					Send Copy of Report to:																			
11					David Hill / Jacques Whitford Company, Inc.																			
12					Box 4696																			
13					PORTSMOUTH, NH 03802																			

Relinquished by (Signature): [signature]	Date 4/8/99 Time 1340	Printed Name & Agent: BRUCE P BLINE / JWC	Received by (Signature):	Date Time	Printed Name & Agent:
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Comments & Special Instructions: MASPETH PURGE DETECTION LIMIT FOR PCBs = 0.065 ppb		Disposal Facility:
Received for lab by (Signature): [signature]	Date 4-8-99 Time 340	Printed Name: C. Capetti	Number & Type of Containers:		Preservatives:

ADDITIONAL PARAMETERS FOR MASPETH PURGE: TOTAL CYANIDE, AMENABLE CYANIDE, TOTAL PHENOLS, CADMIUM, [illegible]

OFFICE COPY

MAY 26 '00 07:27AM EA REMEDIATION P.2

Results of 1996 Post-Closure Sampling

(See RAWP Figure 2 for Sample Locations)

POST CLEAN UP SAMPLE RESULTS FROM AREA "A"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)
A1	3/12/96	12 "	<1
A2	3/12/96	12 "	<1
A3	3/12/96	12 "	<1

POST CLEAN UP SAMPLE RESULTS FROM AREA "B"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)	SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS
B1	3/12/96	12"	<1				
B2	3/12/96	12"	<1				
B3	3/12/96	12"	1.3				
B4	3/12/96	12"	<1				
B5	3/12/96	12"	2.6				
B6	3/12/96	12"	21	B6A*	3/15/96	24"	<1
B7	3/12/96	12"	7.6				
B8	3/12/96	12"	11	B8A*	3/15/96	24"	<1
B9	3/12/96	12"	2.9				
B10	3/12/96	12"	19	B10A*	3/15/96	24"	<1
B11	3/12/96	12"	5.4				
B12	3/12/96	12"	<1				
B13	3/12/96	12"	2.6				
B14	3/12/96	12"	1.4				

* Resampled due to > 10ppm result.

POST CLEAN UP SAMPLE RESULTS FROM AREA "C"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)
C1	3/10/96	12"	<1
C2	3/10/96	12"	<1
C3	3/10/96	12"	<1
C4	3/10/96	12"	<1
C5	3/10/96	12"	<1
C6	3/10/96	12"	<1
C7	3/10/96	12"	<1
C8	3/10/96	12"	<1
C9	3/10/96	12"	<1
C10	3/10/96	12"	<1
C11	3/10/96	12"	<1
C12	3/10/96	12"	1.5
C13	3/10/96	12"	2.1
C14	3/10/96	12"	<1
C15	3/10/96	12"	1.7
C16	3/10/96	12"	<1
C17	3/10/96	12"	<1
C18	3/10/96	12"	3.7
C19	3/10/96	12"	<1
C20	3/10/96	12"	<1
C21	3/10/96	12"	<1

POST CLEAN UP SAMPLE RESULTS FROM AREA "D"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)	SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS
D1	3/12/96	30"	1.1				
D2	3/12/96	30"	<1				
D3	3/12/96	30"	21	D3A*	3/15/96	42"	2.8

* Resampled due to > 10ppm result.

POST CLEAN UP SAMPLE RESULTS FROM AREA "E"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)	SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS
E1	3/8/96	40"	<10**	E1A	3/10/96	52"	<1
E2	3/8/96	40"	<1	E2A	3/10/96	52"	<1
E3	3/7/96	40"	<100**	E3A	3/18/96	52"	<1
E4	3/7/96	40"	<1				
E5	3/7/96	40"	<1				
E6	3/8/96	40"	31	E6A*	3/13/96	52"	<1
E7	3/8/96	40"	<1	E7A	3/10/96	52"	<1
E8	3/8/96	40"	4.7	E8A	3/10/96	52"	7.7
E9	3/7/96	40"	<1				
E10	3/7/96	40"	<1				
E11	3/8/96	40"	<10**	E11A	3/10/96	52"	<1
E12	3/8/96	40"	<1	E12A	3/10/96	52"	<1
E13	3/8/96	40"	<10**	E13A	3/10/96	52"	<1
E14	3/7/96	40"	<1				
E15	3/7/96	40"	1.9				

* Resampled due to > 10ppm result.
** Retested as interfering compound prevented quantification to lower detection limit.

POST CLEAN UP SAMPLE RESULTS FROM AREA "F"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)	SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS
F1	3/7/96	12"	<1				
F2	3/7/96	12"	3.2				
F3	3/4/96	12"	1.8				
F4	3/4/96	12"	2				
F5	3/7/96	12"	<1				
F6	3/7/96	12"	<1				
F7	3/4/96	12"	<1				
F8	3/4/96	12"	<1				
F9	3/4/96	12"	<1				
F10	3/7/96	12"	1	F10A	3/11/96	24"	<1
F11	3/4/96	12"	35	F11A*	3/11/96	24"	45
				F11B*	3/13/96	36"	<1
F12	3/4/96	12"	35	F12A*	3/11/96	24"	84
				F12B*	3/13/96	36"	14
				F12C*	3/15/96	48"	<1
F13	3/5/96	12"	8.9				
F14	3/5/96	12"	1				
F15	3/5/96	12"	<1				

* Resampled due to > 10ppm result.

POST CLEAN UP SAMPLE RESULTS FROM AREA "G"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)
G1	3/4/96	40"	5.2
G1	3/6/96	Water Sample	0.1
G1	3/5/96	7'	<1
G1	3/5/96	8'	<1
G2	3/4/96	40"	8.8
G2	3/6/96	Water Sample	0.98
G2	3/5/96	7'	1.8
G2	3/5/96	8'	<1
G1-G2 (COMPOSITE	3/5/96		1.8

POST CLEAN UP SAMPLE RESULTS FROM AREA "O"

SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS (ppm)	SAMPLE LOCATION	DATE	DEPTH	PCB RESULTS	
O1	3/4/96	18"	25	O1A*	3/11/96	30"	4.4	>2'
O2	3/4/96	18"	12	O2A*	3/11/96	30"	3.4	>2'
O3	3/4/96	18"	6	O3A*	3/11/96	30"	<1	>2'
O4	3/4/96	18"	30	O4A*	3/11/96	30"	1.5	>2'
O5	3/4/96	18"	11	O5A*	3/11/96	30"	3.2	>2'
O6	3/4/96	18"	24	O6A*	3/11/96	30"	1.2	>2'
O7	3/6/96	18"	6.6					
O8	3/6/96	18"	7.9					
O9	3/6/96	18"	4.8					
O10	3/6/96	18"	<1					
O11	3/6/96	18"	<1					
O12	3/6/96	18"	<1					
O13	3/6/96	18"	<1					
O14	3/6/96	18"	<1					

* Resampled due to > 10ppm result.

WIPE SAMPLE RESULTS FROM PAD AREA "V"

SAMPLE LOCATION	DATE	PCB RESULTS ug/100cm2
V1	3/15/96	1.6
V2	3/15/96	2.5
V3	3/15/96	<1
V4	3/15/96	1.5
V5	3/15/96	1.9
V6	3/15/96	1
V7	3/15/96	2.3
V8	3/15/96	2.8
V9	3/15/96	0.8
V10	3/15/96	3.9
V11	3/15/96	2.3
V12	3/15/96	2.4
V13	3/15/96	1.3
V14	3/15/96	1.1
V15	3/15/96	0.6
V16	3/15/96	3.1
V17	3/15/96	2.8
V18	3/15/96	1.8
V19	3/15/96	<1
V20	3/15/96	0.6
V21	3/15/96	<1

Appendix B

Environmental Health and Safety Plan
EHASP

ENVIRONMENTAL, HEALTH AND SAFETY PLAN

JACQUES WHITFORD COMPANY, INC.

PROJECT IDENTIFICATION

Project Name:	CON ED- MASPETH
Jobsite Address:	Consolidated Edison Maspeth Substation, 57-77 Rust Street, Queens, New York
Jacques Whitford Project Number:	NHP03321
Con Edison Order No.	615464-005
Client:	Consolidated Edison Company of New York, Inc.
Date Prepared:	May 29, 1998 Revised: March 18, 1999, November 1, 1999, July 31, 2000, September 16, 2002, October 1, 2003, October 14, 2004
Anticipated Date of Work Start-Up:	Fall 2004

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INTRODUCTION

This Environmental, Health and Safety Plan (EH&SP) establishes guidelines and requirements for safety of on- and off-site personnel as well as visitors to the site during the conduct of field activities associated with the referenced project. All employees of JACQUES WHITFORD COMPANY, INC. (Jacques Whitford) involved in field activities of this project are required to abide by the provisions of this plan. They are required to read the plan and sign the attached Compliance Agreement. Subcontractors involved in field activities of this project will be advised of all risks that may be present while working on the site. Subcontractors are strongly encouraged to adopt this or a similar plan for the protection of their employees. The subcontractor has the responsibility of implementing environmental, health and safety precautions for their employees based on health hazard information provided by Jacques Whitford.

The environmental, health and safety guidelines and requirements presented herein are based on a review of available information and an evaluation of potential hazards. This plan outlines the environmental, health and safety procedures and equipment required for activities at this site to minimize the potential for exposure to hazardous situations by field investigative personnel.

PERSONNEL TRAINING AND CERTIFICATIONS

All personnel (Jacques Whitford and subcontractors) involved in field activities must have taken the 40-hour hazardous waste training program and respirator fit testing as specified by the Occupational Safety and Health Administration (OSHA) regulations codified at 29 CFR 1920.120. Additionally, all yearly 8-hour updates must be completed and documented. Those personnel acting as site supervisors shall have also completed the one-time 8-hour supervisor training program. Certifications will be provided to Con Ed if requested.

All Jacques Whitford site workers shall be regularly monitored as part of corporate medical surveillance program. Subcontractors must show their compliance with an equivalent program. All on-site personnel must read the plan, understand it, agree to comply with all of its provisions, and acknowledge by signing the Environmental, Health and Safety Compliance Agreement attached herein.

ABBREVIATIONS

The following abbreviations will be used throughout the remainder of this EH&SP:

PPL -	Personal Protection Level
SCBA -	Self-contained Breathing Apparatus
APR -	Air Purifying Respirator
PEL -	Permissible Exposure Limit
TLV -	Threshold Limit Value
LEL -	Lower Explosive Limit
SHSO -	Site Health and Safety Officer
REZ -	Radiation Exclusion Zone
MSDS -	Material Safety Data Sheet
STEL -	Short Term Exposure Limit
PPM -	Parts Per Million

SITE DESCRIPTION

The Maspeth Substation is located in the Borough of Queens at 57-77 Rust Street. The location of the site is shown on Figure 1.

The site contains one building and a fenced and gated outdoor parking lot area. Within the parking lot area are several concrete structures. The total area of the site is just over 0.5 acres. The parking lot area encompasses ap[proximately 0.2 acres.

SITE HISTORY

The Maspeth site was an active electrical substation from 1925 to 1985. In 1996, Site remediation activities were conducted by Con Edison during which PCB-contaminated soils, that contained >10 parts per million (ppm) PCBs, were excavated and disposed of accordingly. In December 1996, three monitoring wells were drilled and installed in order to obtain confirmatory groundwater samples. In the course of that investigation, PCB containing oil was found in one of the monitoring wells. In March 1999 Jacques Whitford completed subsurface investigations to assess the extent of PCB-contaminated oils at the site. Results are presented in the report Interim Report for the former Consolidated Edison of NY, Inc. Maspeth Substation, Queens, NY (Jacques Whitford, June 1999). In 2000 and 2001 Jacques Whitford completed additional subsurface investigations to evaluate the horizontal and vertical extent of PCB-contaminated oils at the site. Results are presented in the report Supplemental Remedial Investigation Report For The Former Consolidated Edison Company of NY, Inc. Maspeth Substation, Queens, NY (Jacques Whitford, May 2002). Surface and subsurface soil samples collected during these investigations were laboratory analyzed for PCBs, VOCs, SVOCs, and metals. The data indicate the soils do not contain levels of these parameters above regulatory standards. The data further suggested that a source of the free product was not evident. Additional work has been conducted by Jacques Whitford since the RIR, including a pumping test evaluation and a Qualitative Human Health Exposure Assessment, that were designed to evaluate remedial options. Finally, in February 2004, a pilot test was conducted to determine the applicability of using Pressure Pulse Technology as a cleanup option. Results of the pilot test indicated that the Site was unsuitable for this type of remediation. Based upon the collected data and discussion with the NYSDEC, Con Edison has chosen to use an excavation/disposal approach to the remediation of the Site.

PROJECT OVERVIEW

Task 1: Monitoring Well Abandonment

Eight existing monitoring wells within the proposed limits of excavation noted in the Site Plan (presented herein as Figure 2) will be over-drilled using Hollow Stem Auger (HSA) techniques. These wells include MW-102, MW-103A, MW-201A, MW-202, MW-203A, MW-307, MW-403, and IW-1. The casings will then be pulled and the wells will be grouted to 12 feet below land surface following NYSDEC well abandonment guidelines found in Groundwater Monitoring Well Decommissioning Procedures, April 2003. The remaining open-hole section in each well will be allowed to cave with native materials. Air monitoring procedures to be performed during this task are detailed in the Community Air Monitoring Plan [CAMP] issued under separate cover.

Task 2: Breakup and Disposal of Existing Concrete Structures

Prior to the beginning of excavation, all on-site concrete structures will be broken up and disposed of off-site. The selected remediation Contractor will outlined the precise sequence of these activities in a Site Management Plan (SMP) i.e. removal of entire slabs or break-up and removal. During the removal process, air-monitoring procedures will be performed as described in the CAMP.

Task 3: Soil & Product Excavation/Disposal

Soil and product excavation will proceed as outlined in the Jacques Whitford Remedial Action Workplan (RAWP), dated October 2004. The purpose of the proposed excavation is to remediate the site to a level that is protective of public health and the environment, to remove documented free product to the extent possible, to remove PCB contaminated soils to the required limit (1.0-ppm PCBs in surface soils and 10.0-ppm PCBs in subsurface soils), and to control the migration of free product.

Prior to mobilization to the site, an underground utility mark-out will be performed. Soils and product will be removed from the site via excavator and placed directly into trucks or roll-off containers for off-site transport and disposal. The trucks and/or roll-offs will be lined, bottom and top, with polyethylene sheeting to prevent dust or other debris from blowing out. A decontamination pad will be constructed on-site where all vehicles will be cleaned of all debris prior to leaving the site. Rust Street will be inspected twice daily for debris that will be removed immediately, if detected. During the soil excavation process, it will be the responsibility of Jacques Whitford personnel to verify that the Contractor follows all appropriate items detailed in the RAWP. In addition to the air monitoring noted above, Jacques Whitford will monitor the excavation area with a photoionization detector (PID) in accordance with the CAMP, and will document on-site activities by maintaining a detailed field log book and by taking extensive digital photos.

Task 4: Soil Sampling

At intervals specified in the RAWP, Jacques Whitford personnel will collect soil samples from the sidewalls and bottom of the excavation. Samples will be collected with stainless steel utensils and placed in stainless steel bowl. These composite samples will then be screened with an on-site immunoassay field kit for the presence/absence of PCBs. Based on the field screening results, additional composite soil samples will then be collected and analyzed by a New York State certified laboratory for PCBs (via EPA Method 8082). The laboratory analyses will be performed on a 24-hour turn-around-time.

Task 5: Backfilling

Upon completion of the excavation, the excavation will be backfilled in accordance with the RAWP. The backfill material will be comprised of clean stabilization and structural fill from a known, documented source and compacted on-site.

Task 6: Monitoring Well Installation

Once the excavation has been back-filled, four new monitoring wells will be installed within the excavated area (see Site Plan for proposed monitoring well locations) using a truck mounted drill rig with hollow stem augers. Monitoring wells will be constructed of 4-inch diameter polyvinyl chloride (PVC) well materials, will be screened (0.010-inch or 10-slot) from 18 feet bls to 8 feet bls and will be completed with solid riser pipe to grade. Clean filter sand will be used in the annular space from the base of the screen to 1 foot above the top of the screen. A 2-foot bentonite pellet seal will then be installed and the remaining annular space will be filled with a bentonite/cement grout via tremie pipe. Each well will be completed with a flush-mounted, metal, riser that is grouted in place and mounded to promote shedding of surface runoff from the well. Each well will then be secured with a locked PVC cap.

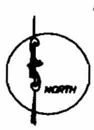
The wells will then be developed to remove any fines from the wells using dedicated polyethylene tubing and low-flow purging techniques. Water from the development process will be containerized in labeled DOT drums for subsequent disposal by Con Edison.

Task 7: Groundwater Sampling

Each of the four new monitoring wells will be purged using low-flow techniques and sampled for PCBs, VOCs, and SVOCs according to the RAWP. Analyses will be completed by a Con Edison contract laboratory for these analytes. Field parameters will include specific conductance, pH, turbidity, water level, and product level (if any).

<u>WASTE MANAGEMENT, CHARACTERIZATION, AND DISPOSAL</u>

All concrete, soils, product, and water removed from the site during the remedial activities will be transported under appropriate manifest to an approved licensed disposal facility. At the present time the disposal facility(s) has not been identified. It will be determined during the Bid selection and provided to the NYSDEC case manager no less than thirty (30) days prior to excavation.



MAP SOURCE: UNITED STATES GEOLOGICAL SURVEY
TOPOGRAPHIC MAP

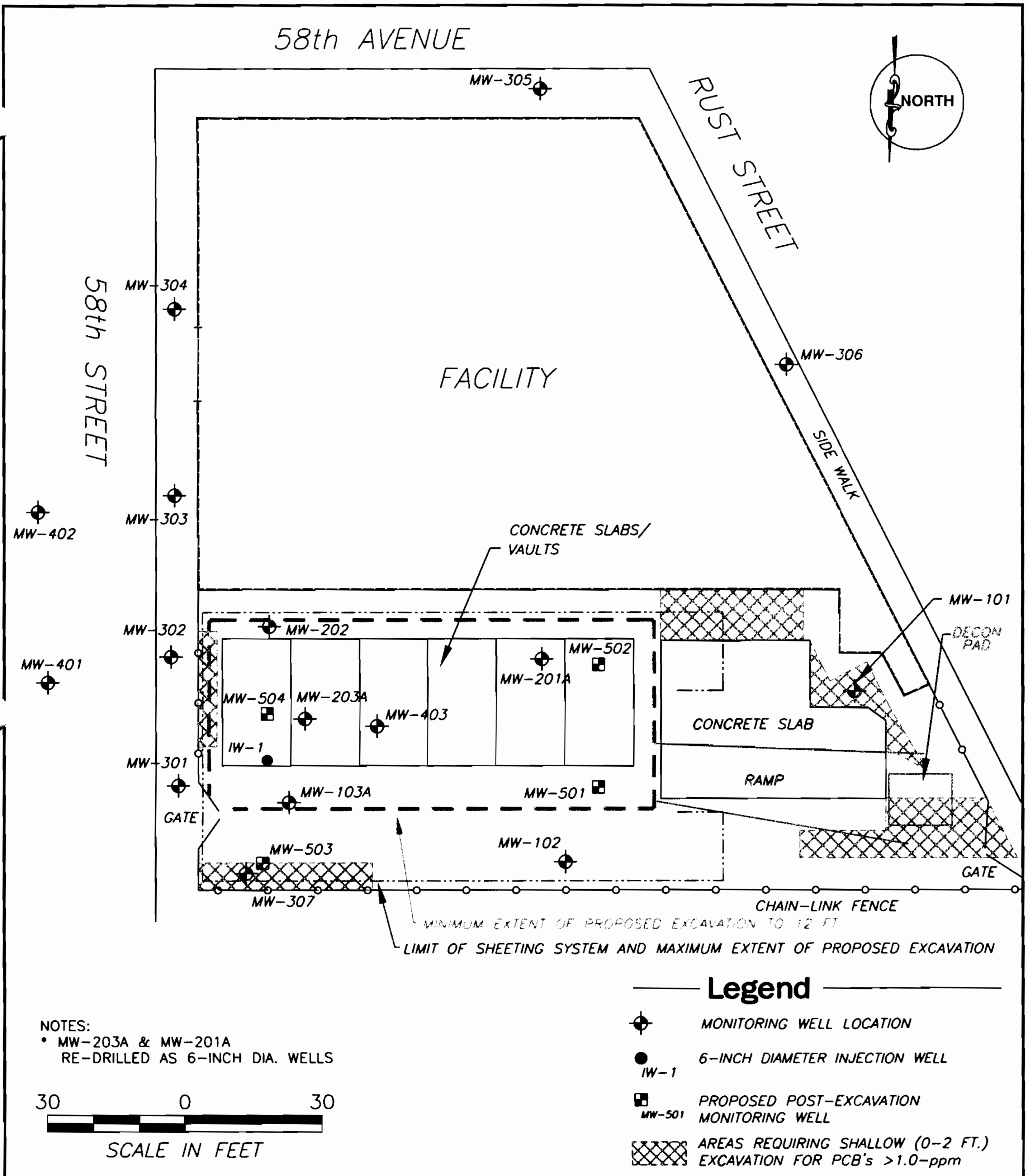
BROOKLYN, NEW YORK

2000 0 2000

Scale in feet

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE					DRAWING TITLE: **SITE LOCATION MAP** CON EDISON MASPETH SUBSTATION
DATE PREPARED: 4-20-00	DESIGNED BY: LDS	DRAWN BY: LDS	CHECKED BY: BSB	REVIEWED BY: DAA	
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	
PROJECT NAME/FILE NAME: MASPETH/LOCUS1		PROJECT NUMBER/PHASE: NHP96280/129		SCALE: 1:24000	PREPARED FOR: CON EDISON OF NY; FIGURE NO. 1



Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE					DRAWING TITLE:
DATE PREPARED: 7-16-04	DESIGNED BY: DFM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DFM	**PROPOSED EXTENT OF SOIL EXCAVATION** FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
REVISION DATE: 8-23-04	REVISION NO: 1	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DH	FIGURE NO. 2
PROJECT NAME/FILE NAME: CON EDISON MASPETH/EHASP	PROJECT NUMBER/PHASE: NHP03321/*	SCALE: 1"=30'			PREPARED FOR: CON EDISON

WORK PLAN Description / Site Location	Type	Primary Level of Protection	For Invasive Tasks, Has Code 53 Been Contacted
1) Monitoring Well Abandonment	(x) Invasive ( ) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No
2) Breakup/Disposal of Existing Concrete Structures	(x) Invasive ( ) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No
3) Soil & Product Excavation/Disposal	(x) Invasive (..) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date If No, is property private? ( ) Yes ( ) No
4) Soil Sampling	(x) Invasive ( ) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No
5) Backfilling	(x) Invasive ( ) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No
6) Monitoring Well Installation	(x) Invasive ( ) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No
7) Groundwater Sampling	( ) Invasive (x) Non-Invasive	( ) A ( ) B ( ) C (x) D (x) Modified	( ) Yes ( ) No By Whom: Date: If No, is property private? ( ) Yes ( ) No

PERSONNEL AND RESPONSIBILITIES (Include Subcontractors)

NAME	FIRM	RESPONSIBILITIES	ON-SITE?
Craig Gendron	Jacques Whitford	Senior Engineer	Task - ( )1 ( )2 ( )3 ( )4 ( )5 ( )6 ( )7 (x)No
Brian D. DesMarais	Jacques Whitford	Corporate Health & Safety Coordinator	Task - ( )1 ( )2 ( )3 ( )4 ( )5 ( )6 ( )7 (x)No
David B. Hill	Jacques Whitford	Project Manager	Task - ( )1 ( )2 ( )3 ( )4 ( )5 ( )6 ( )7 (x)No
Donald Moore	Jacques Whitford	Project Hydrogeologist	Task - (x)1 (x)2 (x)3 (x)4 ( )5 ( )6 ( )7 ( )No
Gary McMcAllister	Jacques Whitford	Geotechnical Engineer	Task - ( )1 ( )2 ( )3 ( )4 ( )5 ( )6 ( )7 (x)No
Michael Aldous	Jacques Whitford	Staff Scientist	Task - ( )1 ( )2 ( )3 ( )4 ( )5 ( )6

			( )7 (x)No
Bruce P. Bline	Jacques Whitford Construction Inspector	Task -	(x)1 (x)2 (x)3 (x)4 (x)5 (x)6 (x)7 ( )No
Chad Pfeiffer	Jacques Whitford Staff Hydrogeologist	Task -	(x)1 (x)2 (x)3 (x)4 (x)5 (x)6 (x)7 ( )No

Jacques Whitford field personnel listed on this page have completed the training, medical, and respiratory program of the Jacques Whitford Health and Safety Program and OSHA standard 29 CFR 1910.120.

CONSOLIDATED EDISON PERSONNEL

Vincent Desiderio	Construction Management Supervisor
Edward Wederkehr	Project Manager

HAZARDOUS MATERIAL SUMMARY

Waste Type (check as many as applicable)

(x) Liquid (x) Solid ( ) Sludge ( ) Gas ( ) Unknown
( ) Other (specify)

Waste Characteristics (check as many as applicable)

( ) Corrosive	(x) Toxic	( ) Inert	(x) Flammable	(x) Volatile
( ) Reactive	( ) Radioactive	( ) Unknown	( ) Other (specify)	

Chemicals	Solids	Sludges	Solvents	Oils
( ) Acids	( ) Flyash/Bottom Ash	( ) Paint Pigments	( ) Halogenated Solvents	( ) Oily Wastes
( ) Pickling Liquors	( ) Asbestos	( ) Metals Sludges	( ) Non-Halogenated Solvents	(x)Other (specify) Oil from transformers
( ) Caustics	( ) Milling/Mine Tailings	( ) POTW Sludge	( ) Other (specify)	
( ) Pesticides	( ) Ferrous Smelter	( ) Aluminum		
( ) Dyes/Inks	( ) Non-Ferrous Smelter	( ) Other (specify)		
( ) Cyanides	(x) Other (specify) Soils containing petroleum			
( ) Phenols				
( ) Halogens				
(x) PCBs				
(x) Metals				
( ) Other (specify)				

Other

( ) Laboratory
( ) Pharmaceutical
( ) Hospital
( ) Radiological
( ) Municipal
( ) Other (specify)

HAZARDS OF CONCERN

( ) Heat Stress (see attached guidelines)

( ) Cold Stress (see attached guidelines)

(x) Explosive/Flammable Substances

( ) Oxygen Deficient Atmosphere

( ) Radiological

( ) Biological

(x) Noise

( ) Inorganic Chemicals

(x) Organic Chemicals

(x) Other (specify)

Electrical hazards associated with power distribution. All vehicles/equipment will follow Con Edison grounding procedures.

TABLE OF CHEMICALS AND SAFETY DATA

Chemical	PEL/REL./TLV	HEALTH HAZARDS
Petroleum hydrocarbons as gasoline	TLV = 300 ppm, 500 ppm STEL PEL = none	Irritate eyes and mucous membrane, dermatitis, headache, blurred vision, dizziness, slurred speech, liver and kidney damage, carcinogen
PCB-1242	REL = 0.001 mg/m^3 PEL = 1 mg/m^3 TLV = 1 mg/m^3	Irritate eyes, chloracne, liver damage, reproductive effects, carcinogen
PCB-1254	REL = 0.001 mg/m^3 PEL = 0.5 mg/m^3 TLV = 0.5 mg/m^3	Irritate eyes, chloracne, liver damage, reproductive effects, carcinogen
Arsenic	REL = 0.002 mg/m^3 PEL = 0.01 mg/m^3 TLV = 0.01 mg/m^3	Ulceration of nasal septum, dermitits, GI disturbances, respiratory irritation, hyperpigmentation of skin, carcinogen
Cadmium	REL = Not promulgated PEL = 0.005 mg/m^3 TLV = 0.002 mg/m^3	Pulmonary edema, chest tightening, headache, chills, nausea, vomiting, diarrhea, mild anemia, carcinogen
Chromium	REL = 0.05 mg/m^3 PEL = 1.0 mg/m^3 TLV = 0.15 mg/m^3	Irritates eyes, skin and lungs
Lead	REL = 0.10 mg/m^3 PEL = 0.05 mg/m^3 TLV = 0.15 mg/m^3	Weakness, insomnia, pallor, constipation, tremors kidney disease, hypotension, irritated eyes
Mercury	REL = 0.1 mg/m^3 PEL = 0.1 mg/m^3 TLV = 0.025 mg/m^3	Irritate eyes and skin, cough, chest pain, tremors, insomnia, irritability, indecision, headache, fatigue, stomatitis
Selenium	REL = 0.2 mg/m^3 PEL = 0.2 mg/m^3 TLV = 0.2 mg/m^3	Irritate eyes, nose and throat, headache, chills, fever, metallic taste, garlic breath, GI disturbances, anemia, spleen damage
Silver	REL = 0.01 mg/m^3 PEL = 0.01 mg/m^3 TLV = 0.1 mg/m^3	Blue-gray eyes, nasal irritation, throat and skin irritation, skin ulceration, GI disturbances
Benzene	REL = 0.10 ppm PEL = 1.0 ppm TLV = 10.0 ppm	Irritates eyes, skin and nose; reepiratory effects, giddiness, headache, nausea, staggered gait, fatigue, carcinogen

Ethylbenzene	REL = 100 ppm PEL = 100 ppm TLV = 100 ppm	Irritate eyes, skin, mucous membranes, headache, dermatitis, narcolepsy, coma
Toluene	REL = 100 ppm PEL = 200 ppm TLV = 50 ppm	Irritate eyes, nose, fatigue, weakness, confusion euphoria, dizziness, headache, dilated pupils, liver and kidney damage
Xylenes	REL = 100 ppm PEL = 100 ppm TLV = 100 ppm	Irritate eyes, skin, nose, throat, dizziness, excitement, drowsiness, staggering gait, nausea, vomiting, dermatitis
Base Neutrals	No exposure data for these compounds	N/A
PEL = OSHA Permissible Exposure Limit REL = NIOSH Recommended Exposure Limit TLV = ACGIH Threshold Limit Value		

OVERALL HAZARD EVALUATION

Tasks 1-7- Monitoring Well Abandonment; Breakup and Disposal of Existing Concrete Structures; Soil & Product Excavation/Disposal; Soil Sampling; Backfilling; Monitoring Well Installation; Groundwater Sampling

( ) High ( ) Medium (x) Low ( ) Unknown

Justification:

High -	Exposure hazard justifies level A or B PPL.
Medium -	Exposure hazard justifies Level C PPL.
Low -	Exposure hazard justifies Level D PPL.
Unknown -	Knowledge of existing hazards insufficient to determine proper level of protection. Use most conservative PPL (A or B) until site reconnaissance completed.

PROTECTIVE CLOTHING

Tasks 1-7- Monitoring Well Abandonment; Breakup and Disposal of Existing Concrete Structures; Soil & Product Excavation/Disposal; Soil Sampling; Backfilling; Monitoring Well Installation; Groundwater Sampling

Protection Level: ( ) A ( ) B ( ) C (x) D (x) Modified

Respiratory: (x) Not needed

- ( ) SCBA, Airline: ____
- ( ) APR: ____
- ( ) Cartridge: ____
- ( ) Escape Mask: ____
- ( ) Other: ____

Protect. Clothing: (x) Not needed

- ( ) Encapsulated Suit: ____
- ( ) Splash Suit: ____
- ( ) Apron: ____
- ( ) Tyvek Coverall
- ( ) Saranex Coverall
- ( ) Coverall: ____
- ( ) Other: ____

Boots: ( ) Not needed

- (x) Boots: steel toe required
- ( ) Overboots: ____
- ( ) Other (specify below)

Head, Eye, and Ear: ( ) Not needed

- (x) Safety Glasses ____
- ( ) Face Shield: ____
- ( ) Goggles: ____
- (x) Ear Plugs: ____
- (x) Hard Hat: color cannot be blue or white
- ( ) Other: ____

Gloves: ( ) Not needed

- ( ) Undergloves: ____
- (x) Gloves: latex surgical
- ( ) Overgloves: PVC preferred
- ( ) Other: ____

Comments:
Work anticipated in Modified Level D (no respiratory protection but dermal and hearing protection required during several Tasks).

MONITORING EQUIPMENT: Specify by task, indicate type as necessary. Attach additional sheets as necessary.

INSTRUMENT	TASK		ACTION LEVELS
Photoionization Detector	( ) 1	(x) 2	Parameter: Total Volatile Organics
	(x) 3	(x) 4	
	(x) 5	(x) 6	
	( ) 7		

Type: HNu/Microtip/Tip1

PPL Level	At Concentration
C	5.0 ppm to 50 ppm above background
B	50 - 500 ppm above background

( ) Not needed

COMMENTS:
Action levels must be sustained for 15 minutes at the breathing zone to justify implementing specific PPL. The above action levels only apply if types of contaminants are unknown. If contaminants are known, contaminant-specific exposure data will be used to determine action levels. Background to TLV for specific compound will justify use of Level D PPL. TLV to compound-specific STEL or 3 x TLV will justify use of Level D PPL for 15 minutes only. If concentrations between TLV and STEL/3 x TLV are maintained for greater than 15 minutes, Level C will be implemented Project manager will be notified of any upgrade of PPL.

	TASK		ACTION LEVELS
Dust Particle Monitor	(x) 1	(x) 2	Parameter: Particulates
	(x) 3	(x) 4	
	(x) 5	(x) 6	
	( ) 7		

Type: MIE pDR-1000AN

PPL Level	At Concentration
D	Background to 150 μg/m^3 (micrograms per cubic meter) above background (see CAMP)
C	> 150 μg/m^3 above background (see CAMP)

( ) Not needed

COMMENTS:
Action levels must be sustained for 15 minutes at the breathing zone to justify implementing specific PPL. The above action levels only apply if types of contaminants are unknown. If contaminants are known, contaminant-specific exposure data will be used to determine action levels. Background to TLV for specific compound will justify use of Level D PPL. TLV to compound-specific STEL or 3 x TLV will justify use of Level D PPL for 15 minutes only. If concentrations between TLV and STEL or 3 x TLV are maintained for greater than 15 minutes, Level C will be implemented. Level B action levels will be determined on a project-specific basis. Project manager will be notified of any upgrade of PPL.

	TASK		Contaminant	TLV	STEL	Tube Type
Detector Tubes	( ) 1	( ) 2				
	( ) 3	( ) 4				

Type: Draeger

(x) Not needed

COMMENTS:

PERSONNEL DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, AND SUPPORT ZONES (x) Not needed

Level C

* Wash overboots and overgloves with detergent (i.e., Alconox) solution.
* Rinse with potable water.
* Remove tape from overboots and wrists.
* Remove overboots, overgloves, and coverall.
* Discard all into plastic bag.
* Remove respirator.
* Remove undergloves and discard into plastic bag.
* Wash face and hands with soap and water.

Modified Level D

* Remove work gloves and disposable coveralls and place into secure drum; label and place drum in designated storage area.
* Remove undergloves and discard into secure drum; label and place drum in designated storage area.
* Wash face and hands with soap and water.

Respirators will be dissembled and rinsed with potable water in the field and allowed to drip dry, then inserted into a plastic bag after each use. They will be cleaned at the end of each day using alcohol wipes. Non-expendable reusable equipment (i.e., outer gloves, boots, hard-hats) will be thoroughly washed at the decontamination location. Decontamination will consist of scrubbing contaminated gloves and boots with an alconox (or equal) detergent followed by a water rinse. Equipment will either be allowed to drip dry or be wiped off with paper towels which will be collected in secure drums. The drums will be labeled and then placed in designated storage area.

( ) Not needed

Containment and Disposal Method (Personnel Protective Equipment)

Disposable protective clothing and non-reusable equipment will be collected in secure drums. The drums will be labeled and then placed in a designated storage area pending final disposal. Reusable protective equipment will be thoroughly washed at the decontamination location. Decontamination will consist of scrubbing contaminated gloves and boots with an alconox (or equal) detergent followed by a water rinse. Equipment will either be allowed to drip dry or be wiped off with paper towels which will be collected in secure drums. The drums will be labeled and then placed in a designated storage area pending final disposal.

EQUIPMENT DECONTAMINATION

Sampling Equipment

All sampling equipment will be decontaminated between each sampling station using the following procedures:

* Wear clean surgical gloves (and outer gloves if task-required).
* Dissemble equipment and place component parts on polyethylene sheeting.
* Clean all component parts with warm detergent solution (i.e., alconox) using a brush to clean inside and outside surfaces.
* Triple rinse surfaces with potable water or deionized water.
* Allow all components to air dry.
* Reassemble equipment.

( ) Not needed

Containment and Disposal Method (Sampling Equipment)

Materials will be containerized (solids and water separately) and labeled with a permanent marker indicating the site, date, and medium (solid or water). Containerized materials will be stored in a secure on-site location until characterized and disposed by Con Edison.

(x) Not needed, all wastes to be handled in accordance with the RAWP

Drilling Equipment

Drilling equipment will be decontaminated by steam cleaning prior to use and between separate boring locations. Steam cleaning will be conducted over a sheet plastic lined decon pit which will capture the decon fluids. The decon area will be located in an approved area of the site before drilling commences.

(x) Not needed, all wastes to be handled in accordance with the RAWP

Containment and Disposal Method (Drilling Equipment)

All fluids that are generated during decon/steam cleaning will be retained by the plastic lined containment area, and then pumped into a 55 gallon drum(s). Wastes generated at the site will be stored in the approved on-site waste storage area pending analyses of the contents of the drums. Upon receipt of analyses, Con Edison will dispose of the wastes in an approved manner.

(x) Not needed, all wastes to be handled in accordance with the RAWP

Construction Equipment

Construction equipment will be decontaminated by water pressure-rinse prior to departure from the Site. During the excavation process, water rinsate will be recovered at the decontamination pad and pumped to the on-site Fluid Treatment System. Particular care will be made to completely clean trucks and roll-offs that are transporting excavated soils from the Site. Excavation equipment will be periodically rinsed in the excavation. Final rinse will occur immediately prior to the equipment leaving the Site

( ) Not needed

Containment and Disposal Method (Construction Equipment)

All fluids that are generated during decon/water cleaning will be pumped to the on-site Fluid Treatment System, for treatment and disposal as described in the RAWP.

( ) Not needed

SITE CONTROL AND COMMUNICATIONS

Site workers should minimize contact of personnel and equipment with contaminated or potentially-contaminated materials. Access to the site for non-project personnel should be limited by the use of barriers such as tape, fencing, etc.

On-site personnel shall be made aware of environmental, health and safety precautions through review of this plan.

Emergency communications shall be facilitated by an on-site mobile phone.

HEAT/COLD STRESS MONITORING AND SAFETY CONSIDERATIONS

The SHSO or Alternate shall monitor ambient temperature and implement the following work/rest regimes accordingly:

* For ambient temperatures between -15^0 and 70^0F, standard rest breaks (i.e., fifteen minutes every four hours should be used).
* For temperatures below -15^0F, work will be done at the discretion of the SHSO or Alternate.
* For temperatures above 70^0F, the following regime shall be followed for workers wearing permeable coveralls:

Adjusted Temperature (a)	Normal Work Ensemble (b)	Impermeable Ensemble
90^0F or above	after 45 min. of work	after 15 min. of work
87.5^0F to 90^0F	after 60 min. of work	after 30 min. of work
82.5^0F to 87.5^0F	after 90 min. of work	after 60 min. of work
77.5^0F to 82.5^0F	after 120 min. of work	after 120 min. of work
77.2^0F to 77.5^0F	after 150 min. of work	after 120 min. of work

a) Calculate the adjusted air temperature (ta adj) by using this equation: ta adj degrees F = ta ^{0}F + 13^0 x sunshine). Measure air temperature (ta) with a standard mercury-in glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun causes shadows. (100 percent sunshine -no cloud cover and a sharp, distinct shadow; 0 percent sunshine - cloudy, no shadows).

b) A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

Workers wearing semi-permeable or impermeable encapsulating protective clothing should be monitored when the temperature in the work area is above 70^0F. To monitor the worker, measure:

1. **Heart Rate** - Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third. If the heart rate exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third. An alternate test is if the heart rate exceeds 140 beats per minute at the end of the work period, and 100 beats per minute at the end of the rest period, shorten the work cycle by one-third or lengthen the rest period by one-third.

2. **Oral Temperature** - Use a clinical thermometer (3 minutes under the tongue or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6 F, shorten the next work cycle by one-third. If oral temperature still exceeds 99.6 ^{0}F at the beginning of the next rest period, shorten the following work cycle by one-third.

Do not permit a worker to wear a semi-permeable or impermeable garment when their temperature exceeds 100.6^{0}F. Workers shall not be required to continue working if they feel any of the symptoms of heart stress. Rest periods should be a minimum of 15 minutes. Length of rest periods should be extended as appropriate or as recommended by the SHSO or Alternate.

EMERGENCY PROCEDURES

PERSONNEL EXPOSURE

General practice exposure emergency actions shall include:

Inhalation Exposure - The following actions should be taken based on the condition of the effected employee.

* If symptoms are present (dizziness, nausea, headache, shortness of breath, burning sensation in mouth, throat, or lungs), the victim should be escorted from the work zone immediately.

* If unconscious, the victim should be removed from the work zone immediately. Rescuers must be wearing proper respiratory and protective equipment before attempting the rescue.

* If the victim is no longer breathing, cardiopulmonary resuscitation (CPR) or some other form of artificial respiration should begin immediately and medical support personnel notified.

Skin Exposure - The skin should be thoroughly washed with copious amounts of soap and water. If clothing is contaminated, it should be removed immediately and the skin washed thoroughly with running water. All contaminated parts of the body, including the hair, should be thoroughly decontaminated. It may be necessary to wash repeatedly.

Ingestion - Medical support should be obtained immediately.

Eyes - If a toxicant should get into the eyes, flush with generous amounts of water. Washing should be continued for at least fifteen minutes and medical attention should be obtained if deemed necessary by the SHSO or Alternate.

PERSONNEL INJURY

The following contingency plan will be enacted in the event of personnel injuries.

1. **Initial alarm and first aid**. Upon observation of an injury, quickly get attention of other nearby workers. Immediately act to protect the injured person from a life-threatening situation. Render appropriate first aid. Warn unsuspecting persons of the potential hazard.

2. **Notify SHSO**. Utilizing freon air horn or other rapid method, notify the SHSO or the SHSO representative of the situation. Identify the injured person, the type of injury and the project site location.

3. **Ambulance and hospital services**. The SHSO or other appropriate personnel will immediately assess the situation and, if necessary, notify the designated ambulance service and hospital of the emergency situation.

4. **Follow-up**. The Site Safety Officer will determine why the injury occurred and will take appropriate steps to prevent a similar recurrence. Events associated with the injury will be recorded in the project safety logbook.

FIRE/EXPLOSION

Upon notification of a fire or explosion on site, the designated emergency signal shall be sounded and all site personnel assembled at the designated access points. The Fire Department shall be alerted and all personnel moved to a safe distance from the involved area. Personnel in the immediate vicinity of a fire shall use fire extinguishers or other immediately available means if this can be done safety and the fire can be immediately controlled or stopped from spreading, but should not attempt to fight major fires or fires involving potential explosives. The Fire Department will be notified regarding site activities and should respond in case of an emergency.

SPILLS

In the event of a liquid/solid spill:

1. **First aid will be administered to injured/contaminated persons.** Any person observing a spill will act immediately to safely remove and protect injured/contaminated persons from any life-threatening situation. First aid and decontamination procedures will be implemented as appropriate.

2. **Warn unsuspecting persons/vehicles of the hazard.** All personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons and by obtaining assistance of other personnel who are familiar with spill control and clean-up techniques.

3. **Stop the spill at the source, if possible.** Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as uprighting a drum, closing a valve or temporarily sealing a hole with a plug. Personnel will not expend more than a brief effort prior to notifying the Project Manager.

4. **Notify the Jacques Whitford and Con Edison Project Managers.** Utilizing available mobile phone communications or other rapid communication procedures, the Con Edison Construction Management Inspector and the Project Managers will be notified of the spill, including information on material spilled, quantity, personnel injuries and immediate life-threatening hazards.

5. **Spill assessment and primary containment.** The SHSO will make a rapid assessment of the spill and direct primary containment measure. Depending upon the nature of the spill, primary containment measures may include, but are not limited to:

   * construction of a temporary containment berm utilizing on-site absorbent material;
   * digging a sump, installing a polyethylene liner and diverting the spill material into the sump;
   * placing drums under the leak to collect the spilling material before it flows over the ground;
   * transferring the material from its original container to another container.

6. **The Project Manager will discuss with and obtain the SHSO's concurrence as to secondary spill containment procedures, if necessary.** He will make a determination regarding the requirements for notifications of backup response personnel, and State and local officials including emergency response teams, and the National Response Center.

7. **Spill clean-up procedures.** The Project Manager will develop spill clean-up procedures taking into consideration associated hazards, quantity of spilled material, disposal methods, and costs.

8. **Spill clean-up.** Personnel will clean up spills following the spill clean-up plan developed by the Project Manager. The Project Manager will supervise the procurement of supplies necessary to clean up a spill. Such items may include, but are not limited to: front end loader, shovels, rakes, clay absorbent, polyethylene, personal safety equipment, steel drums, pumps and miscellaneous hand tools. All material and equipment will be located in the Containment Reduction Zone.

9. **Spill clean-up inspection.** The Project Manager will inspect the spill site to determine that the spill has been cleaned up satisfactorily. If necessary, soil, water or air samples may be taken and analyzed to demonstrate the effectiveness of the spill clean-up effort.

10. **Identify the cause of the spill and remedial action to prevent recurrence.** The Project Manager will determine the cause of the spill and determine remedial steps to ensure that recurrence is prevented. The Project Manager will review the cause of the spill and obtain his concurrence with the remedial action plan.

EMERGENCY PROCEDURES (continued)

EVACUATION PROCEDURES

If at any time, the entire project site needs to be evacuated, the following procedures are to be carried out immediately:

1. The Project Manager or SHSO will initiate the site evacuation.

2. The SHSO will instruct that the evacuation signal will be given. This signal will consist of a repetitive three (3) blasts from the alarm system (air horn).

3. All personnel will immediately halt work and proceed off site by the shortest upwind route.

4. Unless otherwise directed, all site personnel will report to the field office or other staging area.

Following an emergency situation, the SHSO will fill out a Hazardous Waste Incident Report (copy attached) and submit it to the Corporate Health and Safety Officer and Project Manager for review and evaluation.

EMERGENCY EQUIPMENT

The following safety equipment is included in the standard Jacques Whitford Level D or Level C "Ready Bags". This equipment will provide appropriate protection from chemical and noise in most situations encountered. However, for a particular job, certain items which are not included in a standard ready bag may be required. The Project Manager and SHSO will be consulted on what extra or alternate equipment is needed.

Level D	Level C (in addition to Level D equipment)
* Hard hat with winter liner	* Full-face air-purifying respirator
* Latex gloves	* Suitable cartridges
* Neoprene gloves	* Nose-cup insert
* Standard tyvek suit	* Protective lenses
* Polycoated tyvek suit	* Respirator disinfectant (alcohol wipes)
* Tyvek hood	
* Safety glasses and goggles	
* Disposable ear plugs	
* Disposable overboots	
* First aid kit	
* Eyewash kit	
* Fire extinguisher	
* Air horn	
* Duct tape	

EMERGENCY CONTACTS

CONTACTS	NAME	PHONE NUMBER	LOCATION
Jacques Whitford Project Manager	David B. Hill	(603) 431-4899	Portsmouth, NH
Con Edison Project Manager	Edward Weiderkehr	ph: (718) 267-3868	Pager (917)-706-7348
Con Edison Construction Management	Vincent Desiderio	ph (212) 338-4843	Pager (917)-448-3475
Fire Department		(718) 430-0261 or 911	
Police or Sheriff's Department	49th Precinct	(718) 918-2000 or 911	
City Poison Control Center		(212) 764-7667	
State Hazmat Emergency Agency		(800) 457-7362	
State Environmental Agency		(718) 482-4933 x 7114	
National Response Center		(800) 424-8802	Washington, DC
USEPA Environmental Response Team		(201) 321-6660	
Association of American Railroads Response Team		(202) 293-4048	
US Coast Guard Environmental Response Team		(800) 424-8802	
CHEMTREC		(800) 424-9300	

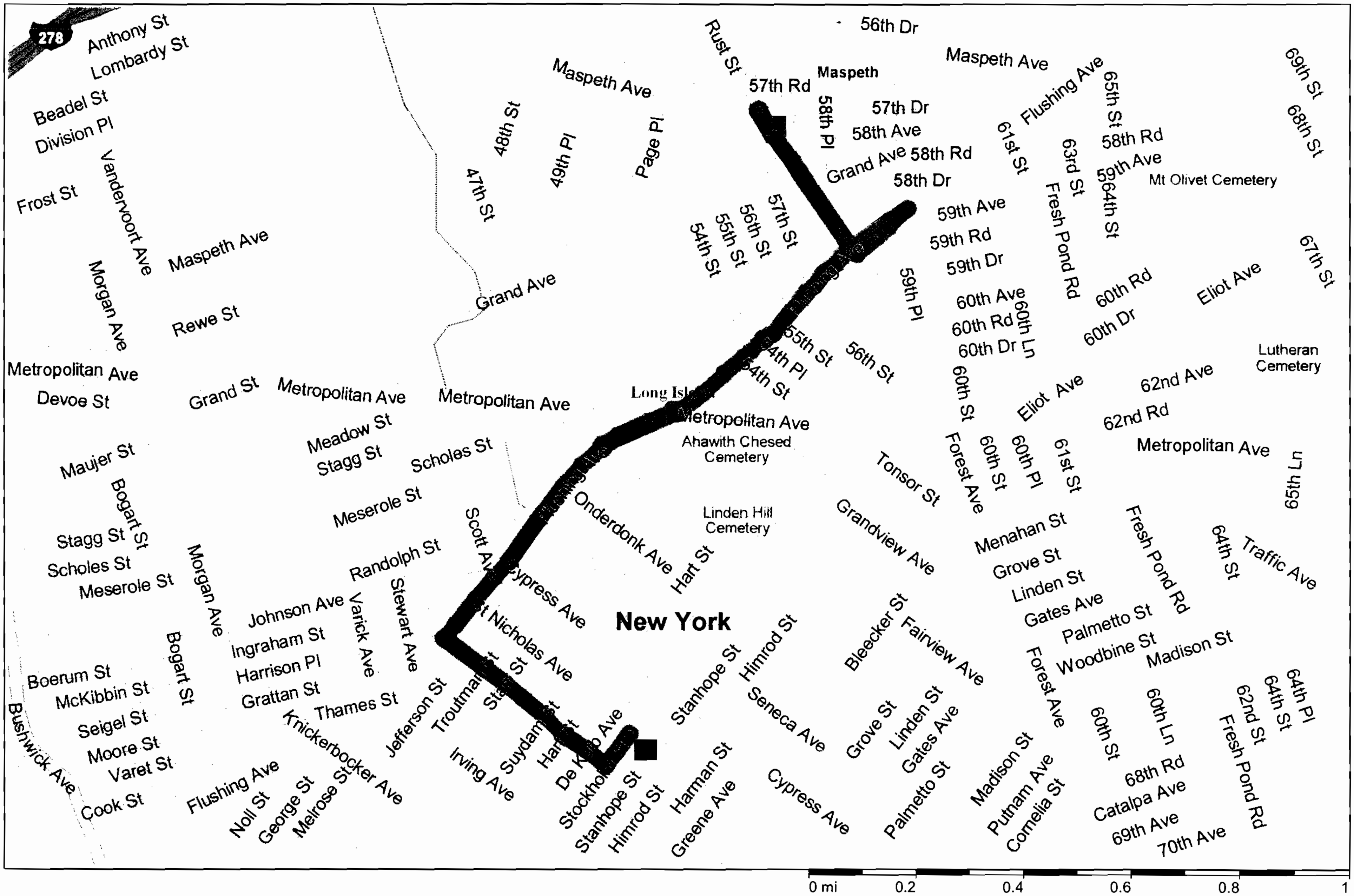
MEDICAL EMERGENCY

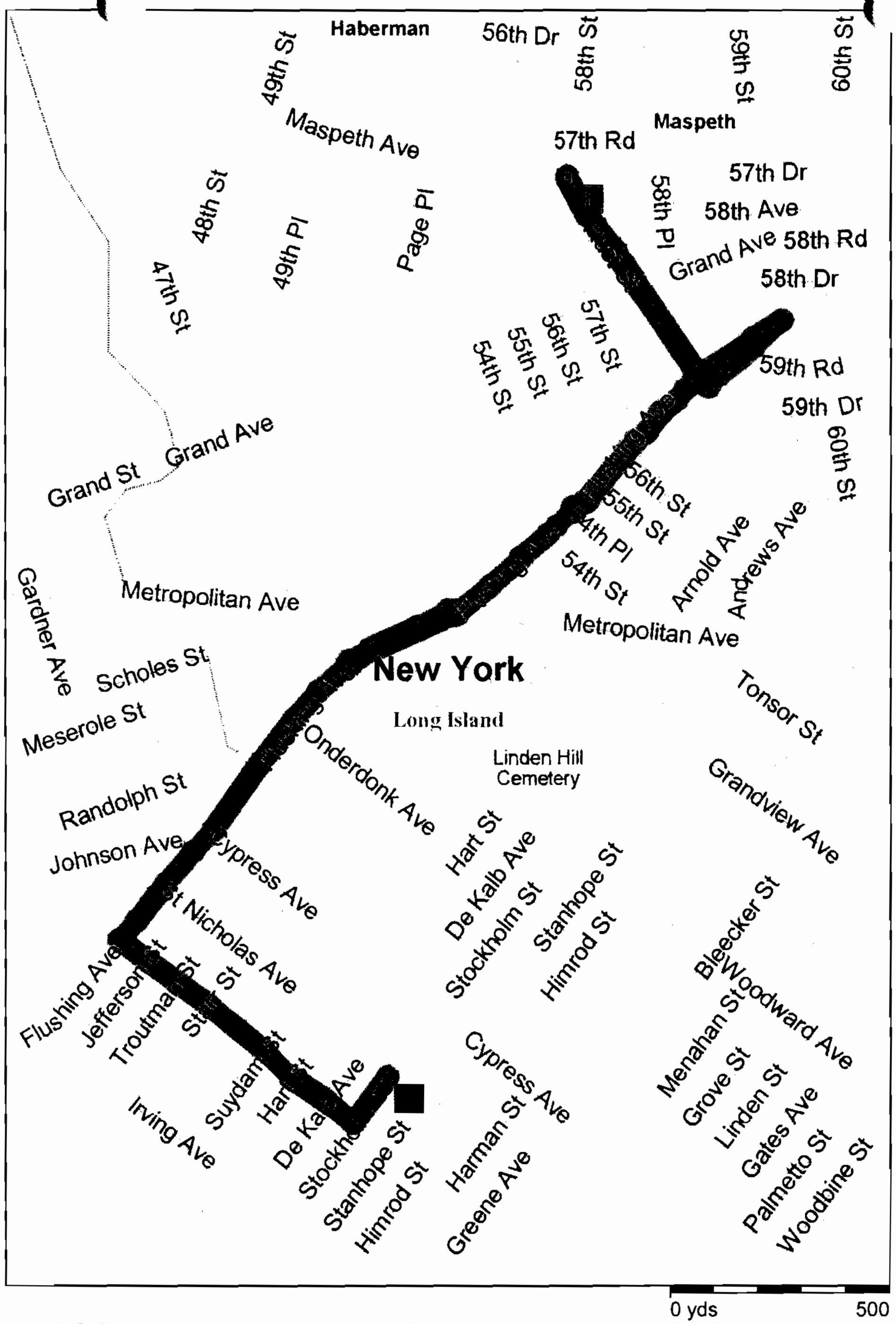
Hospital Name and Telephone Number:	Wyckoff Heights Medical Center (718) 963-7272
Hospital Address:	374 Stockholm Street, Brooklyn, NY
Name of Contact at Hospital:	Emergency Room
Telephone of 24-hour Ambulance:	911
Distance to Hospital:	Approximately 0.5 miles
Route to Hospital:	Go south on Rust Rd to Flushing Rd. Go west on Flushing Rd to Wyckoff Avenue. Turn left onto Wyckoff Ave, turn left onto Stockholm Street, hospital is on right

Map showing route to hospital attached

57 Rust St, Maspeth, NY 11378 to 574 Stockholm St, Brooklyn, NY 11237

2.1 miles; 6 minutes





9:00 AM	0.0 mi	Depart 57 Rust St, Maspeth, NY 11378 o... .ust St (South) for 0.3 mi
9:01 AM	0.3 mi	Turn LEFT (North-East) onto Flushing Ave for 1.3 mi
9:05 AM	1.6 mi	Turn LEFT (South-East) onto Wyckoff Ave for 0.4 mi
9:06 AM	2.0 mi	Turn LEFT (North-East) onto Stockholm St for 131 yds
9:06 AM	2.1 mi	Arrive 374 Stockholm St, Brooklyn, NY 11237

ENVIRONMENTAL, HEALTH AND SAFETY PLAN APPROVALS

Signature:____ Date:________
Jacques Whitford Corporate Health & Safety Coordinator

Signature:____ Date:________
Jacques Whitford Project Manager

ENVIRONMENTAL, HEALTH AND SAFETY PLAN COMPLIANCE AGREEMENT

I (signatory below), have received a copy of the Environmental, Health and Safety Plan for the Con Edison Maspeth Substation site. I have read the plan, understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the safety requirements specified in the plan.

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

Signature/Firm:____ Date:________

ENVIRONMENTAL, HEALTH AND SAFETY PLAN REVISIONS

Date:__________________

SHSO Approval:____

Corporate Health and Safety Officer Approval:____
Revision (describe below)

Date:__________________

SHSO Approval:____

Corporate Health and Safety Officer Approval:____
Revision (describe below)

Date:__________________

SHSO Approval:____

Corporate Health and Safety Officer Approval:____
Revision (describe below)

HAZARDOUS WASTE INCIDENT REPORT

DATE OF INCIDENT_____________________ DATE OF REPORT____________________

DESCRIPTION OF INCIDENT, INCLUDING INJURIES, PROPERTY DAMAGE AND EMERGENCY ACTION TAKEN AND PERSONNEL INVOLVED (use additional sheets if needed):

____

____

____

WITNESS OF INCIDENT:

____

____

____

POSSIBLE OR KNOWN CAUSES:

____

____

____

WHAT ACTIONS ARE NEEDED TO PREVENT A SIMILAR INCIDENT?

____

____

____

OSHA TRAINING CERTIFICATES FOR ON-SITE PERSONNEL

SELECTED CON EDISON
HEALTH & SAFETY
PROCEDURES

CON EDISON
ENVIRONMENT, HEALTH, AND SAFETY
WORK PLAN GUIDE

9.0 – EXCAVATION AND TRENCHING

Overview

Excavation operations are among the first actions taken at a project site. Accidental cave-ins of earth that has been excavated account for a large majority of fatalities each year. In many cases, workers receive no warnings when excavated ground collapses and are suddenly trapped under tons of soil.

Minimum Excavation Requirements

In order to perform work on any Con Edison facility or project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- ALL UTILITIES MUST BE MARKED-OUT BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION.
- A trench is considered an excavation.
- All underground hazards (electric lines, gas/water lines, boulders, etc.) must be de-energized or removed/supported appropriately.
- Hand digging must be conducted near known or suspected underground systems.
- Ramps or runways used as a means of entry/exit for excavations must be designed by a competent person.
- A ladder or other safe means of exit must be used in excavations greater than four feet deep and cannot be greater than 25 feet from all workers in the excavation.
- Entering an excavation during digging is prohibited.
- When the atmosphere in an excavation is/can become hazardous, Proper atmospheric testing must be conducted as required by the Confined Space Program, Section 6 in this manual.
- Daily inspections of the excavation and surrounding areas must be conducted by a competent person before work begins and as needed during the shift.
- Excavations must be shored or braced if nearby structures (buildings, sidewalks, etc.) may become unstable.
- All material, including excavated soil, must be stored at least two feet from the side of the excavation

9.0 – EXCAVATION AND TRENCHING

- Workers may only pass over an excavation on properly constructed walkways/bridges with guardrails in place.
- Adequate physical barriers must be provided around all excavations.
- Adequate protective systems must be used in excavations unless:
  - The excavation is entirely in stable bedrock; or
  - The excavation is less than five feet deep <u>AND</u> has been examined by a competent person who has found no signs of potential cave-ins.
- All excavations greater than five feet deep must be properly sloped, shored, braced, shielded, or protected by a system designed by a professional engineer.
- If a potentially hazardous material is encountered during excavation, all work must stop until the material can be evaluated by an industrial hygienist, or equivalent.

Regulatory Citations

A complete text of the requirements for Excavations can be found in Title 29 Code of Federal Regulations, Part 1926, Subpart P.

Contacts

For additional information regarding Excavation requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378). The OSHA website can be found at www.OSHA.gov.

13.0 - HAZARD COMMUNICATION PROGRAM

Overview

OSHA requires that the hazards associated with all chemicals used or stored at a job site be evaluated. This information must be communicated to employees who may be exposed to these chemicals or use them in their daily jobs. The process for informing employees about the chemicals, their locations, and potential hazards is called a Hazard Communication (HAZCOM) program. In general, this program includes requirements and procedures for container labeling and other forms of warning, procedures for obtaining and retaining material safety data sheets (MSDSs) and employee training.

Minimum HAZCOM Requirements

In order to work in any Con Edison facility or on any project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- If any hazardous material is used or stored at the job site, the contractor's **written** HAZCOM program must be available to all contractor and Con Edison personnel for review upon request.
- The HAZCOM program must include procedures for:
  - Labeling containers and the use of warning forms;
  - Obtaining and retaining MSDSs;
  - Specific worker training requirements;
  - Documentation that these training requirements have been completed by each worker;
  - A list or inventory of hazardous material at the job site.
- The supervisor must inform all workers about the hazardous materials at the job site when they first are first assigned to a project and whenever a new hazardous material is brought to the site.
- Workers must be informed of the location of:
  - The HAZCOM program;
  - The list/inventory of hazardous substances;
  - The locations of MSDSs and the procedures for obtaining a copy of an MSDS;
  - These must all be available for each worker to review during their work period.
- The Con Edison representative must be informed of all chemicals brought to the site.

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- Each contractor must obtain information from the Con Edison representative regarding chemicals that Con Edison uses or stores at the site.
- When more than one contractor is working at a job site, each contractor must inform the other(s) concerning the location of their MSDSs and procedures for labeling and worker protection.
- **THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE HAZCOM PROGRAM ON THE JOB SITE.**
- ALL containers will be labeled.
  - Labels on hazardous material containers will not be defaced or removed.
  - The labels will identify the substance in the container and appropriate warnings about the substance.
  - The material identity will match the material currently in the container, its MSDS, and the overall list/inventory.
- An MSDS must be available at the job site for every chemical that is present at that site.
- A documented training program will be provided to every worker at the job site. This training will include:
  - Information regarding the HAZCOM program;
  - Health and environmental hazards of every chemical used at the job site;
  - Ways to detect the presence of hazardous materials at a job site (including monitoring methods and devices used);
  - How to read and understand the information contained on an MSDS; and
  - How workers can protect themselves from harmful exposure (e.g., safe work practices, personal hygiene, and protective equipment).

Regulatory Citations

A complete text of the requirements for HAZCOM can be found in Title 29 Code of Federal Regulations, Part 1910, Section 1200, and Title 29 Code of Federal Regulations, Part 1926, Section 59.

Contacts

For additional information regarding HAZCOM requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378). The OSHA web site can be found at www.OSHA.gov.

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14.0 - HEARING CONSERVATION

Overview

Noise is defined as unwanted sound. Noise can cause sudden traumatic temporary hearing loss, long-term slowly occurring hearing loss that is irreversible, disruption of communication, and masking of warning devices and alarms. These long-term effects may occur at noise levels lower that are constant and daily.

Minimum Hearing Conservation Requirements

In order to perform work on any Con Edison facility or project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- Workers must not be exposed to noise levels above those stated in the regulations.
- All noise levels must be measured on the A-weighted scale by a trained person.
- When noise exposure includes two or more periods at different noise levels, the combined noise exposure must be calculated.
- When noise levels exceed the permissible limits, worker exposure must be controlled through engineering controls, administrative controls, personal protective equipment (PPE), or a combination of these.
- Engineering controls consist of isolating, enclosing, or insulating equipment or operations or substituting quieter equipment or operations.
- Engineering controls are always preferred over other controls.
- Administrative controls involve rotating workers to jobs having lower noise exposures and reducing the time that each worker is exposed.
- PPE, for example earplugs and earmuffs, must be rated to reduce the noise exposure to within acceptable limits.
- A noise exposure at or above 85 decibels on the A-weighted scale (dBA) averaged over an eight hour time period (with or without PPE) requires a formal written hearing conservation program.
- A hearing conservation program must include:
  - Noise monitoring;

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- Procedures for employee notification;
- Provisions to permit employees to observe monitoring;
- Initial and annual audiometric testing, and an evaluation of the audiogram by a qualified professional;
- A noise training program for all affected workers; and
- Formal record keeping.

- The following table is a guide to common noise levels:

Permissible Duration	dBA	Examples of Noise Sources
No protection or time exposure calculation required.	15	Wooded Forest
	25	Quiet Bedroom
	35	Library
	65	Normal Speaking
	75	General Office Area
Action Level for Hearing Conservation Program	85	Average Machine Shop
8 Hours	90	
6 Hours	92	
4 Hours	95	
3 Hours	97	
2 Hours	100	Air Spray Operation
1.5 Hours	102	
30 Minutes	110	Power Table Saw
15 Minutes	115	
7.5 Minutes	120	
4 Minutes	125	Rock-n-Roll Concert
2 Minutes	130	Aircraft Jet Engine/Ear Pain Threshold
NOT TO EXCEED	140	

- A standard rule-of-thumb for noise states that when standing face-to-face at a distance of 1 to 2 feet, if it is necessary to raise your voice to be heard, the background noise exceeds 85 dBA.

Regulatory Citations

A complete text of the requirements for Hearing Conservation can be found in Title 29 Code of Federal Regulations, Part 1910, Section 95 and Part 1926, Section 52.

Contacts

For additional information regarding Hearing Conservation requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378). The OSHA website can be found at www.OSHA.gov.

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18.0 - MATERIALS HANDLING

Overview

Materials handling can be accomplished in a variety of ways, lifted and moved both manually or using a mechanical means, such as a fork truck or crane. All types of material handling operations require safety planning and practices that are clearly defined.

Minimum Materials Handling Requirements

In order to perform work in any Con Edison facility or on any project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- Whenever possible, objects will be lifted and moved by mechanical devices (cranes, manually operated chain hoists, fork trucks, etc.) rather than by manual effort.
- The mechanical devices will be appropriate for the lifting or moving task and will be operated only by trained and authorized personnel.
- Objects that require special handling or rigging will only be moved under the guidance of a person who has been specifically trained to move such objects.
- Lifting devices will be inspected, certified, and labeled to confirm their weight capacities.
- All devices shall be inspected by a trained and qualified individual at least once a year and will be inspected prior to each use by the user.
- Defective equipment will be taken out of service immediately and repaired or destroyed.
- Personnel will not pass under a raised load, nor will a suspended load be left unattended.
- Personnel will not be carried on lifting equipment, unless it is specifically designed to carry passengers
- The wheels of the truck being loaded or unloaded will be chocked to prevent movement.
- The lift and swing path of a crane will be watched and maintained clear of obstructions.
- Accessible areas within the swing radius of a crane will be guarded or barricaded.
- All reciprocating, rotating, or other moving parts will be guarded at all times.
- Accessible fire extinguishers will be available in all mechanical lifting devices.

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- Lifting devices will never be left near the edge of excavations or unstable areas.
- Mobile lifting equipment, equipped with outriggers will be set before any work is begun.
- Operations near overhead power lines are prohibited unless the power source has been shut off and locked out/tagged out or the appropriate clearance distances are maintained.
- Cranes may only be moved when directed by a signal person.
- Wire ropes will be removed from service when any abrasion, scrubbing, peening, evidences of corrosion, kinking, crushing, bird caging, or other damage exists.
- Unsafe behavior while driving a fork truck is not permitted.
- Each fork truck will be provided with an overhead guard.
- All mobile lifting devices shall be equipped with an audible backup warning device.
- All traffic regulations shall be observed when a lifting device is in operation.
- Only authorized personnel shall refill liquefied petroleum gas (LPG) tanks on fork trucks.
- Employees involved in heavy lifting will be properly trained in lifting procedures and should be physically qualified to protect the person and the material.
- Tiered or stacked material will be stored within acceptable height limits to avoid falling. Only material that will be immediately used may be stored on scaffolds or runways.
- Personnel will be trained in the procedures used for material handling. This training will address the requirements of applicable regulations, for example the training of personnel who operate powered industrial trucks.

Regulatory Citations

A complete text of the requirements for Materials Handling can be found in Title 29 Code of Federal Regulations, Part 1910, Subpart N and Part 1926, Subparts H and O.

Contacts

For additional information regarding Materials Handling requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378), or visit the OSHA web site at: www.OSHA.gov.

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21.0 - NOISE

Overview

Local laws and regulations require that the noise produced during construction/work activities is neither excessive nor intrusive. The contractor must identify the measures that will be taken to assure the noise limits for the area in which they are working will not be exceeded. The noise levels that are acceptable generally depend on the location where the noise is generated and the time of day. In general, most regulations require that facility and commercial operations do not produce unnecessary noise as compared to the surrounding community. For operations within a fixed facility (for example, a generating station), the noise levels measured at the facility perimeter are used to determine impacts on the community. For a discussion of worker protection from excessive noise, refer to the Hearing Conservation EH&S Work Plan Guide.

Prior to working in any Con Edison facility or on any Con Edison project, all contractors must, at a minimum, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

Minimum Noise Requirements

- Local noise ordinances should be reviewed to determine the maximum levels of noise that can be generated at the job site during specific work periods.
- Local noise ordinances should be reviewed to determine whether octave band measurements are required.
- Noise measurements should be obtained by qualified personnel using the guidance of the American National Standards Institute (ANSI) standards and the results should be compared to the applicable ordinances.
- The sampling should be performed by a qualified person who is familiar with the make and type of equipment used in the measurements and experienced in general noise data collection procedures.
- To comply with ordinances, sampling should evaluate the sound levels associated with specific types of noise, for example:

  Impulse noise is short bursts of noise.
  Periodic noise is steady, high-level noise

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- The contractor is responsible for ensuring that all work performed by both his crew and subcontractors complies with applicable noise ordinances.

- Equipment and vehicles need to be maintained in good operating condition, i.e. mufflers, belts and tune-ups.

Regulatory Citations

A complete text of the requirements for noise can be found in the:

- New York City Administrative Code and Charter, Title 24, Chapter 2, Subchapter 6.
- New York City Zoning Resolutions Section 42-21, Article IV.
- Rockland County Health Code, Article IX.
- Westchester County regulations which can be obtained from local townships.

Contacts

For additional information regarding noise requirements or clarification of these requirements, contact the following agencies:

- For projects within the five boroughs, contact the New York City Department of Environmental Protection (NYCDEP) office located at 59-17 Junction Boulevard, 10th Floor, Corona, NY 11368 (718-337-4375 or visit their walk-up One Stop Information and Referral Center at 96-05 Horace Harding Expressway, Corona, NY 11368. NYCEP's web site can be found at www.ci.nyc.ny.us.

- For projects located in Rockland County, contact the Rockland County Department of Health on Sanatorium Road, Pamona, NY 10970 (914-634-2500). Rockland County's web site can be found at www.co.rockland.ny.us.

- For information on standard practices for monitoring noise, contact the American National Standards Institute (ANSI) at 11 West 42nd Street, New York, NY 10036 (212-642-4900). ANSIs web site can be found at www.ansi.org.

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22.0 - OIL AND DIELECTRIC FLUID

Overview

Federal and State laws require that specific procedures are followed to properly handle oil and dielectric fluid to prevent spills. These procedures shall address storing, handling, transferring, and processing these materials. In addition, spills of oils and dielectric fluids must be managed to protect workers, clean up affected areas, and prevent further damage to unaffected areas.

Minimum Oil and Dielectric Fluid Requirements

Prior to working in any Con Edison facility or on any Con Edison project, all contractors must, at a minimum, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- Di-electric fluids are assumed to contain between 50 and 499 ppm PCBs, unless analytical sampling indicated differently. The Contractor Guide for PCBs shall be used.

- Barge operations of 400,000 gals of fluid (a major oil storage facility (MOSF)) requires:
  - Licensed by New York State Department of Environmental Conservation (NYSDEC).
  - Written Spill Prevention Control and Countermeasure (SPCC) Plan and/or Facility Response Plan (FRP) for spill prevention and response.
  - Fully insured to cover the costs associated with a potential spill.
  - Prepare monthly reports of barrels transferred to NYSDEC.

- In Rockland County, temporary oil and/or dielectric fluid storage tank/containers brought on site registered as Petroleum Bulk Storage Facilities must meet the following criteria:
  - The number, type and capacity of temporary tanks/containers brought on site.
  - Describe control measures for the storage of tanks/containers onsite.
  - Store containers in a protected leak-proof, diked, roofed area to prevent damage.
  - Describe handling of rainwater and other contaminated liquids in diked areas.
  - Describe inspection, reporting and cleanup program for temporary containers/tanks.

- For work in New York City, Fire Department (FDNY) permits for combustible liquid/mixture storage is required for storage of tanks/containers of petroleum on-site.

- A temporary oil and/or dielectric fluid tank larger than 660 gallons on site or more than 1,320 gallons of oil and/or dielectric fluid in several tanks, requires an SPCC Plan.

- Comprehensive spills management procedures will available.

22.0 - OIL AND DIELECTRIC FLUID

- Only trained personnel will handle oil/dielectric fluid as required by OSHA HazCom Standard (29CFR 1910.1200) and Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) and the HazCom EH&S Work Plan Guide.

- The contractor will ensure that all oil spills are reported as follows:
  - Report to Con Edison CIG on (212) 684-2030 or (800) 246-8CIG.
  - Report a spill of any size to a waterway to the federal National Response Center.
  - Non-de minimis spills must be reported to the NYS DEC.
  - Spills of 0.5 gallons (10 lbs.) of gasoline, naphtha, mineral spirits, or Stoddard solvents are reportable to the NYC Department of Environmental Protection.

Regulatory Citations

Requirements for management of oil/dielectric fluids less than 50 ppm PCBs can be found in:

- Title 29 Code of Federal Regulations (CFR) Part 1910.
- Title 33 CFR Parts 153 through 155, Title 40 CFR Parts 112 and 280.
- Title 49 CFR Part 194, Title 16 NYCRR Part 258
- Title 6 New York Code of Rules and Regulations (NYCRR), Parts 612 through 614.
- Title 17 NYCRR Parts 30 through 32, Title 27 NYC Administrative Code Chapter 4.
- Title 3 Rules of the City of New York (RCNY) Chapters 7, 8, 20, and 21.
- Title 15 RCNY Chapter 11, Article 22 of the Westchester County Sanitary Code.
- Article 10 of the Sanitary Code of the County of Rockland.

Contacts

For additional information or clarification of these requirements, contact the following agencies:

- For projects within the five boroughs, contact the Region 2 NYSDEC office located at Hunters Point Plaza, 47-40 21st Street, Long Island City, NY 11101 (718-482-4900). For projects in Westchester, Rockland and Dutchess Counties, contact the NYSDEC Region 3 office at 21 South Putt Corners Road, New Paltz, NY 12561 (914-256 3000). Contact the NYCDEP at 59-17 Junction Blvd, 10th Floor, Corona, NY 11368 (718-337-4375).

- Projects located in Westchester County, contact the Westchester County Department of Environmental facilities at 207 North Avenue, New Rochelle, NY 10810 (914-637-3000).

- For projects located in Rockland County, contact the Rockland County Department of Health on Sanatorium Road, Pamona, NY 10970 (914-634-2500).

- Region II office of the Environmental Protection Agency (EPA) is located at 290 Broadway, New York, New York 10007 (212-637-3000).

23.0 - PCB MANAGEMENT

Overview

Federal and State laws require that specific procedures be followed to manage materials containing polychlorinated biphenyls (PCBs). These procedures include those for characterizing, marking, inspecting, labeling, storing, transporting, and disposing of these materials. In addition, spills of PCBs must be cleaned up in such a way as to protect workers, fully clean up affected areas, prevent further damage to unaffected areas from the spilled materials, and document that the clean up was performed properly.

Minimum PCB Requirements

Prior to working in any Con Edison facility or on any Con Edison project, all contractors must, at a minimum, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- Dielectric fluids shall be assumed to contain between 50 and 499 ppm PCBs unless written documentation or current analysis identifies exact concentration
- The EH&S Work Plan Guide are requirements for Oil and Dielectric Fluid.
- Contractor shall identify PCB concentration of fluid contained in equipment and supplies brought on site and mark or label the equipment as required by regulation.
- Contractor will determine concentration of PCBs in material prior to managing the waste.
- Combustible materials must be properly stored away from PCB-containing equipment.
- Cleanup of leaking PCB transformer must begin no later than 48 hours after discovery
- Wastes shall be labeled if 50 ppm or greater PCBs, or less than 50 ppm PCBs but came from a source material that contained 50 ppm or greater PCBs as follows:
  ID as "hazardous waste", contents, location generated, concentration or if unknown. Identify the accumulation start date (the date when waste was first placed in the container, or for equipment, the date when the item was determined to be waste).
  - Place markings on the container/waste article consistent with 40 CFR 761.45.
  - If analytical results are pending, include the words "pending analysis".
- Prior to off-site transport, attach a shipping label showing site name, address, telephone number, USEPA generator ID number; manifest document number, accumulation start date; appropriate waste code for the material, and USDOT description

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23.0 - PCB MANAGEMENT

- If PCB wastes must be stored on-site, the contractor must determine whether they are permitted to use the facility's PCB waste storage area (if one is present at the facility) or maintain their own temporary PCB waste storage area.
  - Wastes can be stored for no more than 30 days in a temporary storage area.
  - The storage area must be marked "hazardous waste".
  - Storage areas must be inspected and logged on a weekly basis,.
  - Containers must be tightly closed during storage to prevent leaks and spills.

- All PCB spills must be reported to a Con Ed representative immediately. Cleanup is managed using approved procedures, trained personnel and appropriate disposal methods.

- When shipping PCB wastes for disposal, the contractor is responsible for completing hazardous waste manifests and land disposal restriction (LDR) forms. Prior to shipping wastes, the contractor must assure that the transporter:
  - signed the transported certification on the manifest, assigned a USEPA ID number.
  - Is carrying a copy of his/her valid current NYSDEC Part 364 transporter number.
  - Is carrying a copy of the latest version of the "Emergency Response Guide".
  - Has marked vehicle sides/rear with the NYS waste transporter permit number.
  - Has marked the vehicle with the PCB label and Class 9 placard, if required.

- The contractor must identify the licensed disposal facility that will be used to dispose of PCB waste, including the facility's USEPA identification (ID) number and the method that will be used to dispose of each PCB waste type.

Regulatory Citations

The requirements for management of PCBs (50 ppm PCBs and greater) can be found in:
- Title 40 Code of Federal Regulations (CFR) Parts 262.31, 262.32, 262.34, and 761.
- Title 49 CFR Part 172.

Contacts

For additional information regarding PCB requirements or clarification of these requirements, contact the following agencies:

- For projects within the five boroughs, also contact the Region 2 NYSDEC office located at Hunters Point Plaza, 47-40 21st Street, Long Island City, NY 11101 (718-482-4900). For projects in Westchester, Rockland and Dutchess Counties, contact the NYSDEC Region 3 office at 21 South Putt Corners Road, New Paltz, NY 12561 (914-256-3000).

- Region II office of the USEPA is located at 290 Broadway, New York, New York 10007 (212-637-3000).

24.0 - PERSONAL PROTECTIVE EQUIPMENT

Overview

For many tasks, personal protective equipment (PPE) is as essential to the job as any tool. OSHA requires that every employer evaluate all tasks associated with a project to determine the hazards associated with these tasks and the appropriate PPE to be worn by each affected employee. This hazard assessment must be documented.

Minimum PPE Requirements

In order to perform work on any Con Edison facility or project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and include a process to meet these requirements.

- All employers must conduct a hazard assessment prior to the start of every project and as conditions change on the project to determine the types of PPE necessary for each task.
- The results of the hazard assessment must be communicated to every employee on the project prior to the start of work and as conditions change.
- All workers must be trained to recognize the need for and types of PPE necessary, the proper use of PPE, the limitations of PPE, and proper care and disposal of PPE.
- All workers must be trained in the procedures for inspecting PPE prior to use to ensure it provides the required protection.
- All PPE used must meet applicable American National Standards Institute (ANSI) standards.
- All PPE must be maintained in a sanitary and reliable condition.
- Where employees supply their own PPE, the employer is responsible for ensuring the adequacy, maintenance, and sanitation of this PPE.
- Hard hats must never be changed or modified in any way and must be appropriate for the type of work being performed. White hard hats are not permitted on any Con Edison site.
- Eye protection must be appropriate for the type of work being performed, and must be equipped with side shields.
- Burning goggles must be equipped with appropriate filtering lenses for the work being performed.

24.0 - PERSONAL PROTECTIVE EQUIPMENT

- Gloves must provide adequate wrist and hand protection based on the tasks being performed, and must be compatible with and resistant to any potential hazard (sharps, chemical, electrical, etc.).
- Safety shoes or boots must be fitted with protective toe guards.
- Additional PPE may be necessary for certain situations, for example overboots or rubber boots should be worn for wet conditions or chemical spills, etc.
- Protective clothing (reusable or disposable) must be appropriate for the type of work being performed.
- Orange reflective vests, approved by the U.S. Department of Transportation, must be worn when working in areas exposed to or adjacent to vehicle traffic.
- Fall protection devices must meet the requirements defined in the Con Edison EHS Work Plan Guide for ***Working at Elevation*** which is in Section 33 of this manual.
- Workers required to wear hearing protection must be allowed to select the type of device they wish to wear from a number of suitable devices.
- Flame resistant garments are required in areas where there is a potential for arc or flash.

Regulatory Citations

A complete text of the requirements for Personal Protective Equipment can be found in Title 29 Code of Federal Regulations, Part 1910, Subpart I, and Part 1926, Section 28 and Subpart E.

Contacts

For additional information regarding Personal Protective Equipment requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378). The OSHA website can be found at www.OSHA.gov.

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26.0 - RESPIRATORY PROTECTION PROGRAM

Overview

Respiratory protection is often necessary to allow employees to work safely in hazardous environments. When an airborne contaminant or oxygen-deficient atmosphere exceeds the regulated exposure limits, an employer must eliminate the hazard through engineering and administrative controls or use of the proper respiratory protective equipment.

Minimum Respiratory Protection Requirements

In order to perform work on any Con Edison facility or project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities. It is the responsibility of each contractor to identify these requirements in the job-specific Environmental, Health and Safety Plan submitted to Con Edison and to include a procedure to meet these requirements.

- Contractor must have available a written Respiratory Protection Program (RPP).
- Perform Exposure Assessments to assess the need for respiratory protection based on limits established by OSHA, American Conference of Governmental Industrial Hygienist, National Institute of Occupational Safety and Health or Con Edison.
- Selection of the proper Air Purifying Respirators (APR) or Supplied Air Respirators (SAR) will depend on the characteristics of the workplace and the level of protection necessary. Characteristics include the concentration of airborne contaminants, immediately dangerous to life or health (IDLH) conditions, oxygen-deficient atmospheres, and the protection factor (PF) of each respirator.
- APR's will not be worn in oxygen-deficient atmospheres, IDLH conditions, when the contaminant exceeds the PF of the respirator, or when cartridges do not exist for a particular contaminant.
- Breathing air quality must meet the Compressed Gas Association's definition of "Grade D" air for all supplied air respirator use. This includes breathing air cylinders and five minute escape cylinders. Compressors shall meet applicable OSHA standards.
- In IDLH atmospheres prior to entry, a rescue plan shall be conveyed to crew members.
- The contractor will follow OSHA regulations regarding maintenance, inspection, proper use of cylinders, fittings, hoses, manifolds, etc., and recordkeeping.
- Self-Contained Breathing Apparatus (SCBA) shall be used in situations where the contaminant or concentration of a contaminant is unknown

26.0 - RESPIRATORY PROTECTION PROGRAM

- Respirator use requires training with the properly selected respirator, medical evaluation to wear the respirator, and proper fit-testing of the respirator.

- Respirators shall be inspected, maintained, cleaned, disinfected, and stored according to the manufacturers' directions and applicable OSHA guidelines..

- Emergency equipment shall be inspected monthly and all records will be kept on file.

- The RPP administrator shall maintain results of periodic program review, and shall identify, based on the results of the review, any necessary changes which may need to be made to the respiratory program. Records shall identify the name of the person conducting the review, the date, and any observations made during the review.

- Based on the RPP outlined in this work plan guide, the program manager shall maintain the following records at all times:

  - Hazard Assessments.
  - Employee Training.
  - Fit-Testing.
  - Medical Surveillance.
  - Respirator and Fit-Test Equipment Maintenance and Repair.

Regulatory Citations

A complete text of the requirements for Respiratory Protection can be found in Title 29 Code of Federal Regulations, Part 1910, Section 134.

Contacts

For additional information regarding Confined Space requirements or clarification of these requirements, contact the New York regional OSHA office located at 201 Varick Street, Room 670, New York, New York 10014 (212-337-2378), or visit the OSHA web site at: www.OSHA.gov.

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29.0 - WASTE MANAGEMENT

Overview

Federal and State laws require that wastes be properly classified and managed as hazardous waste, solid waste, or universal waste. Waste classification will define the requirements for managing the materials. In general, waste management includes characterization, labeling, storage, transportation, disposal, personnel training, and reporting and recordkeeping.

Minimum Waste Management Requirements

Prior to working in any Con Edison facility or on any Con Edison project, all contractors must, at a minimum, meet the following requirements. Please note that additional requirements may be necessary based on job specific activities. It is the responsibility of each contractor to identify these requirements in the job specific Environmental, Health and Safety Plan submitted to Con Edison, and include a process to meet these requirements.

- Contractors take title to all wastes generated if so stated in the specifications; however, CON EDISON RESERVES THE RIGHT TO TAKE TITLE TO ALL WASTES GENERATED BY THE CONTRACTOR'S ACTIVITIES AT CON EDISON FACILITIES AND WORK SITES.

- Contractor must have an active EPA waste generator identification for waste disposal.

- Contractor will comply with all applicable requirements for hazardous wastes generated, including:

  - Characterizing the waste, managing accumulated and stored waste.
  - Labeling of containers, storing the waste, inspecting the storage areas.
  - Filling out manifests and Land Disposal Restriction (LDR) forms.
  - Training of personnel concerning the proper procedures to use.
  - Ensuring that waste is disposed at a permitted facility.
  - Ensuring that reports and records are maintained.

- Contractor shall identify the procedures to classify wastes generated at the job site.

- Wastes shall be segregated when stored to prevent mixing of waste types.

- Storing of solid waste dumpsters will be properly maintained, able to store 150% of expected generation, and covered (with lids, doors, and/or tarps).

- Security measures will avoid non authorized personnel from tampering with wastes.

- Contractor must evaluate the waste generated for recycling, instead of disposing of waste

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WORK PLAN GUIDE

29.0 - WASTE MANAGEMENT

- Contractor must identify the transportation/disposal firms and their permit numbers to manage and transport Con Edison waste. Only permitted treatment/disposal facilities may be used to receive solid and hazardous wastes generated from a Con Edison job site.
- Department of Transportation (DOT) requirements will be adhered to for waste packaging, shipping, and transport, including container selection and vehicle placards.
- All hazardous and solid waste transporters must have the appropriate permits and certifications prior to hauling waste.
- The contractor shall provide copies of all shipping papers and certificates of disposal that are obtained and prepared for wastes generated at the job site.

Regulatory Citations

A complete text of the requirements for waste management can be found in:

- Title 40 CFR, US EPA, Parts 172, 173, 260 through 262, 264, 265, and 268;
- Title 6 NYCRR, Parts 360, 364, 367, 370 through 374, and 376;
- Title 6 Rules of the City of New York (RCNY) Chapter 2; Title 16 RCNY Chapter 1;
- Westchester County, Chapter 825 and Westchester County Local Law No. 14-1992;
- Dutchess County Local Law No. 4 of 1990

Contacts For additional information contact the following agencies:

- In five boroughs, contact the NYC Department of Sanitation at 125 Worth Street, NYC, NY 10013 (212-219-8090) www.ci.nyc.ny.us and Region 2 NYSDEC at 47-40 21st Street, Long Island City, NY 11101 (718-482-4900) "www.dec.state.ny.us".
- Projects in Westchester, Rockland and Dutchess Counties, contact the Region 3 NYSDEC office at 21 South Putt Corners Road, New Paltz, NY 12561 (914-256-3000). Projects in Westchester County, contact the local municipality. Projects in Rockland County, contact the Rockland County Department of Health on Sanatorium Road, Pamona, NY 10970 (914-634-2500) "www.co.rockland.ny.us". Projects in Dutchess County, contact the Dutchess County Health Department, Division of Environmental Health Services in Poughkeepsie, NY 12601 (914-486-3404) "www.dutchessny.gov".

Appendix C

Community Air Monitoring Plan
CAMP

COMMUNITY AIR MONITORING PLAN
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

Prepared for
Consolidated Edison Company of New York, Inc.
Long Island City, New York

Prepared by:
JACQUES WHITFORD COMPANY, INC.
Portsmouth, New Hampshire

November 2004

COMMUNITY AIR MONITORING PLAN
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

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COMMUNITY AIR MONITORING PLAN

FOR THE FORMER
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
MASPETH SUBSTATION
QUEENS, NY

1.0 PURPOSE

The purpose of this Community Air Monitoring Plan (CAMP) is to provide an additional margin of safety to residents and/or businesses located in the vicinity of the former Maspeth Substation (Site) located at 57-77 Rust Street in Maspeth, New York with respect to dust and volatile compounds and odors that may be generated during proposed remedial work activities at the site. This CAMP describes the air monitoring and odor and vapor control procedures that will be implemented during proposed remedial activities at this site. The location of the site is shown on Figure 1. This CAMP is designed to conform to New York State Department of Health's Generic Community Air Monitoring Plan (revised 1/6/00).

The compounds of concern at the Site are soils impacted with dielectric fluids containing PCBs and, to a limited extent, volatile organic compounds (VOCs). Soil samples collected and submitted for laboratory analyses during previous investigation work had reported levels of PCBs ranging primarily from 0.5 ppm to 2.0 ppm. One soil sample (out of a total of 50) had a reported PCB concentration of 10.2 ppm, slightly greater than the regulatory criteria of 10.0 ppm. Total VOCs in soils were reported at levels ranging from 0.01 ppm to 0.7 ppm. The potential impact to nearby residents and/or businesses would come from fugitive dust (potentially containing PCBs) becoming airborne as a result of the remedial work activities noted below. In addition, nuisance odors maybe generated during the remediation activities proposed but are not anticipated.

The proposed remedial activities depicted on Figure 2 are briefly described below.

- Abandoning eight existing monitoring wells. This will entail overdrilling each well with hollow stem augers, containing the drill cuttings in properly labeled 55-gallon drums or similar vessel (prior to off-site disposal at a properly licensed facility), pulling the well screen and casing, and filling the subsequent annulus with a cement/bentonite gout via tremie pipe.
- Removing and properly disposing off-site concrete structures. These structures include 6 concrete vaults (approximately 150 cubic yards) and one Concrete Storage Area slab (approximately 100 cubic yards).
- Excavating and properly disposing off-site surface and subsurface soils and free product. The total proposed excavation is approximately 100 feet long by 50 feet wide by 18 feet deep (approximately 3,300 cubic yards). At the present time the disposal facility has not been identified. It will be determined during the Bid selection and provided to the NYSDEC case manager no less than thirty (30) days prior to excavation.

- Backfilling and compacting the excavation with clean fill.
- Installing four new monitoring wells within the backfilled area for post-remediation monitoring.

A site-specific Environmental Health and Safety Plan (EHASP) and a Quality Assurance/Quality Control Plan (QA/QCP) have also been developed to address the proposed activities listed above. The EHASP outlines the guidelines and requirements for the safety of on- and off-site personnel and visitors to the site involved in the proposed remedial field activities. The QA/QCP details the quality assurance measures to be implemented during this project, including a description of instrument calibration procedures and quality assurance sampling requirements. The EHASP and QA/QCP are presented as Appendix B and Appendix D, respectively, of the Remedial Action Work Plan.

2.0 MONITORING PLAN

This section describes air monitoring, action levels, and responses for the CAMP at the perimeter of the site and off-site neighborhood monitoring. Air monitoring for the Site and the surrounding neighborhood will occur during all proposed remediation activities. CAMP results for odor, vapor, dust, and control measures will be submitted to the NYSDEC and NYSDOH on a daily basis as described in Section 3.2.5 of the RAWP.

The community air-monitoring network will consist of photoionization detectors (PIDs) for monitoring total VOCs and particulate/dust monitors. One PID meter and one dust monitor will be placed at a permanent station along the northern fence line between the site and the abutting residential properties. A second PID meter will be used to record the background or upwind VOC levels prior to beginning each day's work and then placed at the downwind perimeter of the work areas for real-time recording throughout the work day. Two additional dust monitors will be placed one upwind and one at the downwind perimeter of the work area for continuous monitoring. The upwind or background CAMP station will be determined each day based on the prevailing wind direction. The downwind perimeter will be considered just beyond the immediate work areas (i.e. just beyond the drill rig while abandoning each boring, just beyond each concrete structure, and just beyond the proposed excavation). Odor monitoring will also be performed during these remediation activities.

2.1 Continuous VOC Monitoring

Total VOC concentrations will be monitored at the permanent CAMP station and at the downwind perimeter of the work areas on a continuous basis during activities at the Site each day. Prior to the start of work each day, an upwind background CAMP station will be determined and VOC concentrations will be collected with the PID meter. This information will be recorded daily and documented in the on-site field logbook. The PID meters (Photovac Micro-tip or equivalent) located at the permanent CAMP station and at the downwind CAMP station will be operated daily, beginning each morning prior to the start-up of work activities and ending each afternoon following the completion of the day's work. Readings will be collected continuously with the PID meters and electronically stored by the instruments. Fifteen-minute averages will also be collected and calculated. All readings will be recorded and downloaded at the end of each day onto a laptop computer. An action level of 5 ppm (parts per million) above the background or upwind reading has been specified in the NYSDOH's community air monitoring plan and will be utilized by Jacques Whitford at this site.

The Jacques Whitford on-site hydrogeologist will review the data from the permanent CAMP station and the downwind perimeter station PID meters every 15 minutes. The data will be evaluated for the following:

A) If the VOC concentrations at the permanent CAMP station and/or the downwind perimeter of the work area do not exceed 5 ppm above background then remedial work activities will continue unabated.

B) If the VOC concentrations at the permanent CAMP station and/or the downwind perimeter of the work area exceed 5 ppm above background, for a 15-minute interval, remedial work activities will be stopped and monitoring continued as described below:

- If the organic vapor levels decrease at the permanent CAMP station and/or the downwind perimeter of the work area, per instantaneous readings, to below 5 ppm above background, remedial work activities will resume.

- If the organic vapor levels at the permanent CAMP station and/or the downwind perimeter of the work area, per instantaneous readings, remain greater than 5 ppm over background but less than 25 ppm over background, remedial work activities can resume provided:

    - The NYSDEC and NYSDOH are notified promptly.

    - The source of organic vapors is identified and corrective actions are taken to abate the emissions (see below).

    - The organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background for the 15-minute interval.

C) If the concentration at the downwind perimeter of the work area, for a fifteen-minute average reading, exceeds 25 ppm above background, remedial work activities will be shut down and corrective actions taken to abate the emissions (see below).

Abatement measures are identified below.

<u>During Well Abandonment</u>

- All soil cuttings at each well head will be placed in 55-gallon drums, and moved to a secure on-site location. The drums will then be properly disposed of off-site.

- If the boring is near the proposed finished depth and the screen and riser has yet to be pulled, the boring will be continued to the finished depth (24 to 25 ft below ground), the well materials pulled, and the annulus grouted as quickly as possible.

- If the boring is not near the proposed completion depth, all exposed soil cuttings will be placed in 55-gallon drums, and moved to the secure on-site location. Drilling will cease, the hollow stem augers will be removed, the borehole will be plugged with bentonite pellets and clean backfill, and the downwind perimeter will be monitored for 30 minutes. If the downwind VOC levels drop to less than 5 ppm above background, drilling will re-commence. If the downwind VOC levels do not drop to less than 5 ppm above background, the ground surface will be sealed with concrete, and the work stopped for the day and/or until the issue is mitigated

Based on previous work at this facility, including the initial drilling and construction of the seven monitoring wells, and the known compounds of concern (soils impacted with dielectric fluids containing PCBs), VOC concentrations are anticipated to be at a low concentration and not exceed the 5 ppm above background action level. However, the above-mentioned action items will be implemented if the readings exceed the 5-ppm action level.

<u>During Removal of Concrete Structures</u>

Previous investigative testing and sampling of the various concrete structures on the site, resulted in no reportable concentrations of volatile organic compounds. Therefore, the potential for airborne dust containing VOCs is not anticipated to be an issue and VOC monitoring during this remedial activity will not be necessary.

<u>During Soil Excavation</u>

- All soils removed from the excavation will be placed directly into trucks or roll-off containers for proper off-site disposal. Each truck or roll-off container will be lined, bottom and top, with polyethylene sheeting to prevent soils from blowing out or liquids leaking from the container. As mentioned previously, the disposal facility has not been identified. It will be determined during the Bid selection and provided to the NYSDEC case manager no less than thirty (30) days prior to excavation.

- If the excavation is near the proposed finished depth it will be continued to the finished depth (18 ft below ground) and covered with a layer of clean backfill as quickly as practical.

- If the excavation is not near the proposed completion depth, exposed soils within the excavation will be covered with a layer of clean backfill. Work will cease and the downwind perimeter will be monitored for 30 minutes. If the downwind VOC levels drop to less than 5 ppm above background, work will re-commence. If the downwind VOC levels do not drop to less than 5 ppm above background, the exposed soils within the excavation will be covered with an additional layer of clean backfill and work will be stopped for the day.

As mentioned above, previous subsurface work conducted at this facility has shown levels of VOCs that did not exceed the 5-ppm above background action level detected with the PID. However, the above-mentioned action items will be put into effect if the levels exceed the 5-ppm action level.

2.2 Continuous Dust Monitoring

Each respirable dust monitor (MIE Brand, pDR-1000AN Modelor) will be operated daily, beginning each morning with the start-up of drilling activities and ending each afternoon following the completion of the days work. Readings will be collected continuously by the dust monitor and electronically stored by the instrument. Fifteen-minute averages will also be collected. All readings will be recorded and downloaded at the end of each day. Action levels of 100 and 150 $\mu g/m^3$ (micrograms per cubic meter) above background or upwind has been specified in the NYSDOH's community air monitoring plan and will be utilized by Jacques Whitford at this site.

The Jacques Whitford on-site hydrogeologist will review the data from the permanent CAMP station and downwind perimeter dust meter every 15 minutes. The data will be evaluated for the following:

A) If the permanent CAMP station and/or the downwind perimeter particulate level does not exceed 100 $\mu g/m^3$ above background, for a 15-minute interval, then remedial work activities will continue unabated.

B) If the permanent CAMP station and/or the downwind perimeter particulate level is 100 $\mu g/m^3$ greater than the upwind location, for a 15-minute interval, then dust suppression activities will be undertaken (see below) and the NYSDEC and NYSDOH will be notified promptly. Work will continue with dust suppression provided that the downwind particulate levels do not exceed 150 $\mu g/m^3$ greater than the upwind location and provided that no visible dust is migrating from the work area.

C) If, after re-starting work and dust suppression activities, the permanent CAMP station and/or the downwind perimeter particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, the NYSDEC and NYSDOH will be notified promptly, work will be stopped for the day and corrective actions taken to abate the emissions.

Dust suppression techniques are identified below.

<u>During Well Abandonment</u>

- Jacques Whitford will mist the auger flights and soil cuttings with potable water using a portable 3 to 5-gallon garden sprayer to decrease the airborne dust production.

- Jacques Whitford will continue to evaluate the data from each dust monitor. Misting will continue until the dust levels falls beneath the allowable levels.

During Removal of Concrete Structures

- Jacques Whitford will mist the removal equipment and concrete structures with potable water using a portable 3 to 5-gallon garden sprayer to decrease the airborne dust production and continue to evaluate the data from each dust monitor. Misting will continue until the dust levels falls beneath the allowable levels.

- If a larger volume of water is required to "knockdown" the dust, a garden hose will be used to direct potable water onto the concrete structures to keep the dust below the allowable levels. The potable water will be from either an on-site tank or from the facility.

During Soil Excavation

- Jacques Whitford will spray exposed soils within the excavation and within the trucks or roll-off containers with potable water using a garden hose to decrease the airborne dust production and continue to review the data from each dust monitor.

- The potable water will be from either an on-site tank or from the facility. Water will be applied until the dust levels falls beneath the allowable levels.

2.3 Work Area and Off-Site Odor and Vapor Monitoring

During the remediation activities on-site (i.e., concrete removal, well abandonment, excavation of soils, etc.), the Jacques Whitford on-site representative will conduct odor and vapor monitoring at the site. All on-site workers will also communicate with the Jacques Whitford on-site representative if odors are encountered during these activities.

Odor and vapor monitoring (with a PID meter) will include routine work area odor and vapor monitoring and off-site neighborhood odor and vapor surveys, and if necessary confirmatory laboratory analysis of ambient air in the event of an off-site odor or vapor occurrence. The monitoring results, including the neighborhood surveys, will be kept in a logbook and used to initiate additional dust, odor, and vapor control measures as necessary. All records will be maintained on site for inspection by the NYSDEC or the NYSDOH.

A Jacques Whitford on-site representative will walk the perimeter of the site and in a 1-block circumference away from the site to determine if odors and vapors are emanating from the on-site remediation activities. The frequency of these perimeter surveys will be continuously at start-up of work until the success of odor controlling measures (see below) has been established and then the perimeter surveys will be less frequently based on field observations and measurements (PID and Dust Monitoring described above) but will occur no less than four times per day.

Work Area Odor Monitoring

Odor and vapor determinations will be made by the on-site Jacques Whitford representative within the work area. If there are no exceedances of the CAMP thresholds or any detection of perimeter or off-site odors then the work may continue. If odors are detected within the work area during invasive remediation activities the NYSDEC and NYSDOH will be notified promptly.

Neighborhood Odor and Vapor Monitoring

A Jacques Whitford representative who has not generally been working in work area (to minimize any olfactory fatigue bias) will perform neighborhood odor and vapor and volatile organic vapor surveys. The person performing these surveys will be relieved by another qualified person if they are exposed to odors or vapors for a prolonged period of time. The survey will focus on, but not be limited to, downwind locations and utilize a photoionization detector (PID), as well as olfactory observations. As mentioned above, the frequency of these surveys will be continuously at start-up of work until the success of odor control measures has been established and then the surveys will be less frequently based on field observations and measurements, but will occur no less than four times per day.

If the results of this monitoring indicate the presence of odors or vapors or elevated PID readings as determined by the qualified scientist or engineer then the following will occur:

- Invasive activities will temporarily cease.
- The NYSDEC and NYSDOH will be notified promptly.
- The source will be identified and corrective actions will be taken to abate odor or vapor emissions so that odor or vapors are not detected at the work perimeter in accordance with the Odor and Vapor Control Measures section below.
- Work will not start up until the VOCs levels are below 5 ppm, the particulate levels are below 100 µg/m3, no off-site odors are detected, and the NYSDEC and NYSDOH approve the start up.

3.0 ODOR AND VAPOR CONTROL MEASURES

If invasive Site work leads to ambient air concentrations of organic vapors exceeding 5 ppm above background for a 15-minute time weighted running average or if the exposed soil exhibits any objectionable odor or vapor at the perimeter of the work area, odor and vapor control contingencies shall be implemented. Odor and vapor control practices will be implemented, monitored and maintained until such time as the vapors or odors from the area have dissipated or have otherwise been adequately addressed.

3.1 Odor and Vapor Controlling Work Practices

Work practices to control odors and vapors include limiting the size and number of excavations, limiting the time that excavations will be open, and minimizing double handling of soil will be implemented at all times.

Size and Number of Excavations

The size and number of excavations will be limited to the maximum extent practicable. Approaches to achieving this objective will include completing the full depth of soil removal in as quickly a time as possible.

Prompt Excavation, Transport, and Disposal

Results of previous investigations have been evaluated to implement a "load and go" approach as described in the RAWP. Soils will be excavated and placed directly into lined trucks for off-site disposal. All trucks exiting the Site will be washed (tires, undercarraige, etc.) to prevent any soil or other debris from being tracked off-site. Each truck will be inspected and all loads covered and secured for proper off-site transportation.

Prompt Backfilling

The amount of time excavations will remain open (i.e. not backfilled) will be minimized to the maximum extent practicable. Approaches to achieving this objective will include:

- appropriate volumes of approved off-site clean backfill material will be available,
- expedited backfilling of remedial excavations.

3.2 Foams, Odor Neutralizing Agents, Long Term Encapsulants, and Tarps

Active odor and vapor suppression and neutralization techniques will be conducted to control odors and vapors at all times during odor or vapor causing invasive activities including the use of foams, neutralizing agents, encapsulants, and tarps as described below:

Short Term Invasive Activities

A biodegradable, synthetic-based foam concentrate will be applied with an appropriate foaming unit over the exposed soils to a thickness of at least three inches to control fugitive odors and vapors. If the area of excavation is a dimension that is too large for the sufficient foam coverage using on-site equipment, a larger unit (or addition smaller foaming units) will be used to apply the foaming agent. If necessary, odor-neutralizing agents will be applied either to the air or directly onto the soil.

Long Term Encapsulants and Tarps

Long term encapsulants and tarps will be used when exposed soil are not being actively moved or disturbed. The long-term encapsulant will be non-hazardous and nonflammable and will cure to form a hard surface with the ability to control odors for approximately two weeks. Another long-term control is tarpaulins. An appropriate tarpaulin will be placed against the base and any exposed sidewalls to fully cover the exposed soils. The tarpaulin will be continuously anchored along the edges with imported soil approved for backfill at the site.

3.3 Odor and Vapor Control Contingency

If the work practices, foams, odor-neutralizing agents, long-term encapsulants, and tarps described above are not effective in adequately controlling odors and vapors as defined by this plan, invasive soil movement or disturbance will temporarily cease; the NYSDEC and NYSDOH will be notified, and Con Edison will reevaluate the field conditions and implement alternative work practices and control measures before restarting work. An alternative work practice could include the use of containment structures or enclosures. The type and size of potential containment structures would be selected based upon project need. If containment structures are necessary, the final design will be approved by NYSDEC/DOH prior to implementation.

FIGURES

(CAMP.doc)

Appendix D

Quality Assurance/Quality control Plan
QA/QCP

QUALITY ASSURANCE/QUALITY CONTROL PLAN
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
Long Island City, New York

Prepared by:

JACQUES WHITFORD COMPANY, INC.
Portsmouth, New Hampshire

October 2004

QUALITY ASSURANCE/QUALITY CONTROL PLAN
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

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FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan (QA/QCP) was developed by the Jacques Whitford Company, Inc. (Jacques Whitford) on behalf of the Consolidated Edison Company of New York, Inc. (Con Edison). This QA/QCP details the protocols and procedures that will be implemented during Site Remediation activities performed at the former Maspeth Electrical Substation located in Maspeth, Queens County, New York. Proposed Site Remediation activities include the abandonment of monitoring wells, removal of several concrete structures, and the excavation of soil and the removal of free product. In addition, dewatering of the groundwater in the bottom two to three feet of the proposed excavation will occur to minimize the moisture content of the excavated soil for disposal purposes. Sheet piling will also be necessary to brace the sidewalls of the proposed excavation. Following excavation, transport, and disposal activities, the excavation will be backfilled with clean fill. Once backfilled, groundwater-monitoring wells will be installed for periodic groundwater monitoring and sampling.

The former Maspeth Substation is surrounded by a mixed residential and commercial area. The Site is located at 57-77 Rust Street in Maspeth, Queens County, New York. The Site, approximately 0.5 acres, is bounded by 58th Street to the east, 57th Drive and residences to the north, Rust Street to the west, and 58th Avenue to the south (see Figures 1 and 2).

The primary objectives of the QA/QCP are to provide quality assurance (QA) and maintain quality control (QC) during sampling and testing activities that will be conducted as part of the Site Remediation and monitoring activities. Implementation of the QA/QCP will ensure that investigation activities are performed in a manner consistent with the data quality objectives (DQOs) described herein.

In summary, this QA/QCP identifies project responsibilities and prescribes guidance and specifications to satisfy QA/QC objectives and thus, promote:

- Collection of representative samples;
- Generation of data that are valid for the objectives of the Site Remediation;
- Consistent and complete documentation of field activities performed during Site Remediation; and
- Accountability of field and laboratory activities.

The QA/QC objectives will be achieved by:

- Adhering to standard sample collection, sample handling and analytical protocols and procedures;
- Implementing a sample tracking system and adhering to chain-of-custody protocols;
- Confirming the quality of the sampling and analytical methods through quantitative and qualitative data assessment methods; and
- Ensuring that all aspects of the measurement process, from field through laboratory, are documented to provide data that are technically sound and legally defensible.

This QA/QCP was developed following the guidance and protocols described in the documents listed in Section 14.0 – References.

2.0 BACKGROUND

The former Maspeth Substation is surrounded by a mixed residential and commercial area. The Site is located at 57-77 Rust Street in Maspeth, Queens County, New York. The Site, approximately 0.5 acres, is bounded by 58th Street to the east, 57th Drive and residences to the north, Rust Street to the west and 58th Avenue to the south.

Between 1925 and 1985, Con Edison and its predecessor, the New York and Queens Electric Light & Power Company, operated an electric distribution substation at the Site. In June 1996, Con Edison sold the Site to LDC Realty Holdings, L.L.C. ("Encore"). In December 1997, RAW Realty & Equipment Company ("Raw") acquired the Site from Encore. Encore and Raw conducted tire-recapping operations at the Site. The Site is presently owned and occupied by M & A Linens, a wholesale fabric supplier.

The structures located on the Site include a brick building and a fenced and gated outdoor parking lot area. The brick building formerly housed electric equipment and the battery and control rooms of the former substation. M&A Linens, the present owner of the Site, now uses the building as a fabric storage warehouse. The parking lot area (approximately 0.2 acres) is comprised of concrete pads and "bluestone" crushed gravel covered areas. When the Site was operated as an electric distribution substation, the parking lot area served as an outdoor transformer and buss work yard. The former substation's step-down transformers were located on six concrete pads identified as Concrete Slabs/Vaults on Figure 2.

Subsurface soil and groundwater samples were collected during several phases of investigation work and analyzed for pertinent parameters (including polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals). The investigation results indicate that limited exceedances of regulatory standards exist in subsurface soil and groundwater at the Site. The results further indicate that the main contamination issue at this Site is free-phase product (at depth) containing PCBs. Free product has been measured in monitoring wells, located primarily within the Site's boundaries, ranging from a sheen on the groundwater surface to approximately two feet in thickness. The specific PCB compound in the product has been reported as Arochlor-1260 at concentrations from 1.1 to 328 ppm. The seasonal fluctuation of the water table further suggests the product has likely created a smear zone at depths of approximately 12 to 18 feet below land surface (bls).

Con Edison evaluated a number of options for the remediation of the PCB-contaminated soil and free phase product. Based on a review of the data collected and subsequent discussions with the New York State Department of Environmental Conservation (NYSDEC), Con Edison selected a remedial action consisting of "Soil Excavation/Free Product Removal" for this Site. The target depth of the excavation is 18 feet bls.

Based on the soil quality data generated during these previous Site investigations, the soil that will be excavated can be characterized as non-hazardous for disposal purposes. Additional pre-characterization of the Site soil was completed and provided to the

NYSDEC. All soil above the level of the free-phase product will be characterized as non-hazardous.

Free product analytical data reported PCBs at concentrations from 1.1 to 328 ppm, indicating that the free product to be removed, and excavated soil in direct contact with the free product, can be characterized as hazardous for disposal purposes.

The deeper limits of the excavation will be in saturated soil and the excavation will likely require dewatering. The dewatered fluids will either be passed through an on-site oil-water separator and then into a frac tank for settlement for appropriate treatment prior to disposal or collected and transported off site for disposal. The water will be pumped from the frac tank through an on-site treatment train consisting of a bag-filter (as an additional method to collect sediment) and a Granular Activated Carbon (GAC) unit(s) prior to discharging to a Publicly Owned Treatment Works (POTW). The remediation contractor, with Con Edison assistance, will contact the New York City Department of Environmental Protection (NYCDEP) for the necessary permit and effluent limits for this disposal option. This QA/QCP discusses the protocols and procedures to implement this option.

2.1 Project Objectives

The objectives of the Site Remediation are as follows:

- Remediate the Site to a contaminant level that is protective of public health and the environment;

- To remove documented free product to the extent practical, during the remediation period;

- To remove remnant surficial soil at varying locations throughout the Site not addressed during the 1996 remediation activities;

- To remove PCB contaminated soil to the required limit (1.0-ppm PCBs in surface soil, 10-ppm PCBs in subsurface soil) within the sheet piled area;

- To effect the remediation of the Site groundwater to acceptable levels through the remediation of contaminant source soil and free-phase product; and

- To control the potential migration of contamination.

2.2 Project Task Description

Preparation of this QA/QCP has been conducted in response to and in accordance with the requirements set forth in the Voluntary Cleanup Agreement (VCA) that Con Edison entered into with the NYSDEC in March 2002.

2.2.1 Site Remediation

The Site Remediation scope of work includes decommissioning and removing eight on-site existing monitoring wells, removing six concrete pads (approximately 150 cubic yards (CY)) and one concrete storage-pad (approximately 100 CY), stabilizing the excavation, constructing a containment wall around the excavation, excavating surface and subsurface soil and free product, backfilling and compacting the excavation with clean fill, and installing four new monitoring wells within the backfilled area for post-remediation monitoring.

Monitoring well decommissioning activities will be completed in accordance with the NYSDEC Groundwater Monitoring Well Decommissioning Procedures, dated April 2003. In accordance with previous findings, abandoned well materials from above the smear zone (0-15 feet bls) will be treated as non-hazardous waste while well materials that have been in contact with free-phase product (15-18 feet bls) will be treated as hazardous. Therefore, no specific sampling of these materials will be required.

In 1993 Con Edison cleaned, demolished, and properly disposed the walls of the outdoor transformer vaults. Post-cleanup confirmation PCB test results for the cleaned concrete structure surfaces that remained were all less than or equal to 10 ppm. Therefore, samples will not be collected from these structures during the remediation work. There is, however, the potential for the tar joint-compounds between each pad to contain PCBs. This material will need to be stripped, properly containerized, and disposed.

2.2.2 Excavation and Post-Excavation Sampling

Soil samples collected from the excavation will undergo field screening followed by laboratory analysis in accordance with the procedure outlined below. Sidewall samples will be collected at intervals of 25 linear feet. The target depth of the remedial excavation (based on Site investigation results) is 18 feet bls. To achieve this target depth and due to the limited overall size of the parking lot area, it will be necessary to install sheeting along all four sidewalls of the excavation. This is depicted on Figure 2. The sheeting will protect and brace the areas underneath the building (along the south side) and 58th Street sidewalk (along the east side). Along these two sides, the excavation will extend vertically directly from ground surface to a preliminary target depth of 12 feet bls.

Along the north and west side walls, vertical sheeting will also be necessary. However, the excavation along these sides will initially extend vertically directly from ground surface to 4 feet bls. Once at 4 feet bls, the north and west sidewalls can be sloped (at the OSHA required slope of 1.5 feet horizontal to 1.0 feet vertical) down to the preliminary target depth of 12 feet bls.

Once excavation in the identified area is completed to 12 feet bls, a minimum of four advance excavations will be completed to the target depth of 18 feet bls to investigate, and ultimately facilitate, Site dewatering.

The excavation can not be extended to the south or to the east due to the building and sidewalk. If post-remediation confirmation soil samples (and/or groundwater) indicate potential off-site impact in the area beneath the 58th Street sidewalk, Con Edison will investigate and address as necessary this issue at that time. However, if sample results show that soil with concentrations that exceed regulatory limits or exhibit evidence of free product still exist along the northern and western sidewalls, the excavation will be extended in these directions. The total lateral extent of the proposed excavation will be limited by the sheeting installed along these sides. The target depth of the completed excavation is 18 feet bls.

The details of the sampling program are presented below.

- Surficial soil with reported PCB concentrations in excess of 1 ppm remain at four locations outside of the principal excavation area. These areas are identified on Figure 2 of as "Areas Requiring Shallow Excavation". Once the excavation has achieved a depth of two feet bls, post-excavation confirmation samples will be collected and analyzed for PCBs (EPA Method 8082) and TPH (EPA Method 8100 – Modified) at the required density of one sample per 250 square feet. A minimum of one sample will be collected per area. One sample will also be analyzed for VOCs (EPA Method 8260) and SVOCs (EPA Method 8270).

- Within the main excavation, discrete grab samples from the top two-feet along all the four sidewalls will be collected at 25-foot intervals and submitted for laboratory analysis for PCBs and TPH. Twenty percent of those samples will also be analyzed for VOCs and SVOCs. The results will be compared to the regulatory cleanup targets to confirm that remedial objectives have been met. As discussed above, all soil in this interval will be excavated (and properly disposed of off-site) up to the sheeting along all four sides.

- The excavation will then proceed vertically to the minimum extent of 12 feet bls, as shown on Figure 2. Along the south and east sidewalls, the excavation will extend laterally to the sheeting thereby preventing further lateral excavation in these directions. Discrete grab soil samples will be collected through the sheeting/shoring from these areas. Sampling intervals will be every 25 feet (horizontal) and every four feet (vertical). Vertical sample locations will be 2-6 feet and 6-10 feet bls. The soil samples will undergo field screening with a PCB immunoassay kit and be submitted for laboratory analyses for PCBs. The results will be compared to the regulatory cleanup targets to confirm that remedial objectives have been met.

- Excavation of impacted soil will proceed. The sheeting set along the south and east sidewalls will prevent lateral excavation in these directions. However, the excavation will be able to proceed to the north and west. If the excavation proceeds in these directions, samples will be collected every 5 to 10 feet to the north and west and tested with the PCB immunoassay kit and submitted for laboratory analysis. The PCB analytical data, as well as visual evidence of free-phase product, will be used to direct the excavation to the north and west. The contractor will continue excavation in these directions until directed to stop by the on-site engineering staff. In any event, excavation will not proceed past the sheeting limits shown on Figure 2. If post-remediation sampling (soil, groundwater, free-phase product) conducted as part of this Remedial Action Work Plan (RAWP) indicates the presence of off-site impacts, Con Edison will investigate and, address as necessary, such issues at that time.

- At the conclusion of excavation, or at periods during the excavation when the maximum extent of excavation is reached, sidewall confirmation samples will be collected in the manner described above (every two to four feet vertical and 25 feet horizontal). The deeper sidewall sampling intervals will be 10-14 feet and 14-18 feet bls. The sheeting set along the south and east sidewalls will prevent lateral excavation in these directions. Discrete grab soil samples these sidewalls will be collected through the sheeting from these areas and directly from the exposed soil surface or through the sheeting along the north and west flanks. The samples will be field screened and each sample will be laboratory analyzed for PCBs and TPH as described above. A roughly 20 percent of the sampling locations, samples will also be collected for VOCs and SVOCs, using the methods described above.

- Post-excavation confirmation samples will also be collected from the bottom of the excavation, as required by NYSDEC protocol. Up to 20 soil samples will be collected using decontaminated sampling equipment (one sample per 250 square feet of excavation-bottom) and analyzed for PCBs and TPH, as described above. Twenty percent of those samples (up to four) will also be analyzed for VOCs and SVOCs, as requested by the NYSDEC.

- As described in Section 6.4, all soil sampling equipment and non-disposable field equipment will be decontaminated between sampling/testing events.

2.2.3 Dewatering Fluids Sampling

The deeper limits of the excavation will be in saturated soil and will likely require dewatering. The dewatered fluids will either be passed through an on-site oil-water separator and then into a frac tank for settlement for appropriate treatment prior to disposal or collected and transported off-site for disposal. If treated on-site, the water will be pumped from the frac tank through an on-site treatment train consisting of a bag-filter (as an additional method to collect sediment) and a Granular Activated Carbon (GAC) unit(s) prior to discharging to a local POTW.

If the on-site treatment/POTW disposal option is selected, the remediation contractor, with Con Edison assistance, will prepare a temporary discharge/dewatering permit application for submission to the NYCDEP. In a manner consistent with the NYCDEP Discharge permit, samples of the treated water and/or untreated water will be collected on a schedule dictated by the permit and submitted for laboratory analysis on a 24-hour TAT for the NYCDEP required analytical suite (for the necessary permit and effluent limits). These may include PCBs by Method 8082, Non-Polar or Oil & Grease by EPA Method

1664, BTEX Compounds plus Methyl-Tert-Butyl-Ether (MTBE), Tetrachloroethene (PERC), and Naphthalene by EPA Method 8260, Total Suspended Solids, flashpoint, pH, and Metals (cadmium, chromium VI, copper, lead, mercury, nickel, and zinc).

Table 3 presents the summary of the dewatering fluids sampling and laboratory analytical program proposed during the remediation activities. Section 6.3.1 provides greater detail regarding this activity.

2.2.4 Groundwater Monitoring and Sampling

Following completion of excavation and backfilling activities, four groundwater-monitoring wells will be installed in the excavated area and subsequently developed. These four monitoring wells, along with any project-related wells (all off-site), will be gauged with an electronic oil/water interface probe for the presence/absence of product on a quarterly basis. Groundwater samples will also be collected quarterly from each project-related well and submitted for laboratory analysis of PCBs (8082), TPH (8100 – Modified) VOCs (8260), and SVOCs (8270). Table 3 presents the summary of the groundwater laboratory analytical program proposed for the post-remediation groundwater monitoring activities.

2.3 End Use Data

The laboratory data generated during the Site Remediation will be used to confirm the goals of the project have been achieved. The level of analytical support must be carefully considered to ensure the data are of sufficient quality to satisfy the goals of the Site Remediation. Analytical support will be employed for different components of the investigation as follows:

- Level III: Analysis Using New York State ASP Methods. - Level III analytical support data will be generated for laboratory analysis performed using SW-846 methodologies and methods contained in U.S. Environmental Protection Agency (EPA) "Methods for Chemical Analysis of Water and Waste," EPA-60014-79-020, 1983. All analyses will be in accordance with New York State ASP protocols with Category B deliverables. This level is used primarily in support of engineering studies using standard approved procedures. Level III analytical support will be used for analysis and reporting of all samples analyzed by the laboratory.

- Level I: Field Screening. - This level is characterized by the use of portable instruments, such as a photoionization detector (PID), dust meters, and a Rapid Immunoassay Screen field test kit for PCBs in soil. These field instruments can provide real-time data to assist in the optimization of sampling point locations and for health and safety support. All routine air monitoring (as discussed in the Community Air Monitoring Plan and EHASP) and soil screening will be conducted using Level I analytical support.

3.0 PROJECT MANAGEMENT

Activities of personal involved in this project include supervision of field activities, health and safety, and the evaluation and interpretation of data, as discussed below.

The individuals who are responsible for ensuring the collection of valid measurements and data and the routine assessment of measurement systems for precision and accuracy include the Con Edison Project Manager, Remediation Project Manager, Project QA/QC Officer, and Laboratory QA/QC Officer.

The key project personnel and their primary responsibilities are summarized below.

Con Edison Project Manager:	Mr. Barry Cohen
Con Edison EH&S Remediation:	Mr. Edward Wiederkehr/Kenneth Kaiser, P.E.
Administrative Project Manager:	Mr. David Hill, Principal Geoscientist
Remediation Project Manager:	Mr. Gregory DelMastro, Principal Geoscientist
Project QA/QC Officer:	Mr. Donald Moore, Senior Scientist
Field Team Leader:	Mr. Bruce Bline, Field Geologist
Health and Safety Officer:	Mr. Bruce Bline, Field Geologist
Laboratory QA/QC Officer:	Ms. Patty Werner
Third-Party Data Validator	Ms. Judy Harry

3.1 Con Edison Project Manager

The Project Manager will serve as Con Edison's representative in reviewing the progress of work, overseeing all field activities, and participating in field meetings. In addition, the Con Edison Project Manager will be responsible for monitoring field activities to ensure compliance with the overall scope of work and health and safety requirements.

3.2 Remediation Project Manager

The Remediation Project Manager will be responsible for coordinating and implementation of the elements of the Site Remediation. The Remediation Project Manager will be responsible for ensuring completion of the progress reports as well as participating in all major meetings with Con Edison, as needed, during the course of the project.

The Remediation Project Manager will also be responsible for adherence to project schedules; preparation of reports; development and monitoring of cost control measures; reviewing and assessing the performance of technical staff and laboratory subcontractors; maintaining complete, orderly project documentation; interacting with the Con Edison Project Manager and the NYSDEC throughout the project; and managing project-specific problems and resolving project related issues.

The Remediation Project Manager will interact with Con Edison contract laboratory personnel. The Remediation Project Manager will confirm that the chain-of-custody documentation and directives are clear and will address any analytical-related issues that arise throughout the course of the remediation activities.

3.3 Project Quality Assurance and Quality Control Officer

The Project QA/QC Officer will be responsible for reviewing field notes and field laboratory measurements, for compliance with QA objectives (precision, accuracy and completeness criteria) as stated in this QA/QCP, and notification to the Con Edison Project Manager of any QC deficiencies.

3.4 Laboratory Quality Assurance and Quality Control Officer

The Laboratory QA/QC Officer will be responsible for quality control procedures and QC checks in the laboratory, and will ensure strict adherence to laboratory protocols. In addition, the Laboratory QA/QC Officer will be responsible for tracking the movement of each sample from the time the samples are received at the laboratory until the final analytical data are assembled in the report. Test results and data management reports, including analytical data, quality control data, chain-of-custody documentation, the appropriate historical data, will be assembled electronically by the laboratory personnel under the supervision of the Laboratory QA/QC Officer. All calculations will be reviewed by the Laboratory QA/QC Officer.

3.5 Special Training / Certification

Training requirements beyond routine training for each of the project personnel are not warranted for the work prescribed in the Remedial Action Work Plan and/or this QA/QCP.

3.6 Project Documentation and Records

A project file will be maintained by the Remediation Project Manager, which will contain complete project documentation. This file will include project plans and specifications; field notebook(s); field logs and data records; photographs; maps and drawings; sample identification documents; chain-of-custody records; the entire analytical data package(s) provided by the laboratory including QC documentation; gas chromatograms; mass spectra; references and literature; report notes and calculations; progress and technical reports; correspondence; and other pertinent information. All such project records will be accessible to Con Edison and the NYSDEC.

4.0 QA OBJECTIVES FOR MEASUREMENT DATA

Data Quality Indicators (DQI) are qualitative and quantitative descriptors used to interpret the degree of acceptability or usability of data. The primary DQIs are precision, accuracy (bias), representativeness, comparability and completeness. Of these DQIs precision and accuracy are quantitative measures, and representativeness and comparability are qualitative measures of data quality.

Within a quantitative and qualitative context, the DQIs are evaluated and measured. In order to assess the data, laboratory and field QC samples will be collected. The QC samples include field duplicates; laboratory matrix spike/matrix spike duplicates; field, lab, and trip blanks; and laboratory control samples such as surrogates. The QC samples are discussed in Section 9.0 and are summarized in Table 3. To assess precision, comparability, and representativeness, QC samples will include field duplicates and laboratory matrix spike/matrix spike duplicates. Matrix spikes, blanks and laboratory control samples are use to assess accuracy; and blanks, and split-samples are used to assess representativeness.

4.1 Data Precision

Precision is a measure of mutual agreement among individual measurements of the same property. Precision is measured by analyzing field duplicate and laboratory duplicate samples. The relative percent difference or RPD of duplicate measurements can be used to evaluate analytical precision. The smaller an RPD, the greater the analytical precision. Relative Percent Difference is calculated from initial and duplicate sample analytical results using the following equation:

$$RPD\% = \frac{\underline{(C1-C2)}}{(C1+C2)/2} \times 100$$

where:

C1 = The larger of the two observed values.
C2 = The smaller of the two observed values.

Both spike recovery and RPD can be determined using the analytical results of matrix spike and matrix spike duplicate samples (MS/MSD).

Duplicate samples will be used to assess the overall effects of the sample collection and analysis procedures on precision; some samples will be collected in duplicate. One of the duplicates will be given a "coded" identifier and will be submitted as a 'blind' duplicate, along with the original sample for analysis. Comparisons of the results from the original sample and the blind duplicate will allow for an evaluation of the precision RPD. One coded field duplicate will be collected for every twenty environmental samples or during each separate activity covered in the QA/QCP. Matrix spike and matrix spike duplicate samples will also be collected.

The referenced analytical methods cite precision control limits or give guidance on how to establish precision control limits. Control limits are typically generated from multiple analyses and inter-laboratory comparison studies. Control limits are method, compound, and matrix dependent.

Acceptable levels of laboratory precision will vary according to the sample matrix, the specific analytical methods, and the analyte concentration relative to the method detection limit (MDL). Quality assurance objectives for precision will also be supported through the use of written laboratory standard operating procedures (SOPs) and properly calibrated instruments. Laboratory precision will be assessed by the analysis of matrix spike/matrix spike duplicate and/or laboratory duplicates. Laboratory precision is evaluated using United States Environmental Protection Agency (USEPA) guidelines for the specific method reference in concert with laboratory SOPs and this project-specific QA/QCP.

4.2 Data Accuracy

Accuracy/bias is the degree of agreement of a measurement with an accepted reference or true value. The difference is usually expressed as a percentage or ratio. Accuracy is a measure of the bias of a system. The accuracy/bias of laboratory analytical measures is evaluated through the analysis of method blanks, sample matrix spikes, matrix spike duplicates, sample surrogate recoveries, performance evaluation samples, and Laboratory Control Samples. Accuracy/bias-contamination is assessed by trip blanks (VOCs), equipment blanks, method blanks, and instrument blanks that evaluate how the data is affected by contamination.

Accuracy may be expressed as a percent difference (%D) calculated by the following equation:

$$\%D = \frac{(V_t - V_m)}{V_t} \times 100$$

Where:

V_t = the true or real value expected.
V_m = the measured or observed value.

This same relationship holds for the expression of accuracy as a percent recovery (%R) of a known method analyte or surrogate spike:

$$\%R = \frac{(SSR - SR)}{SA} \times 100$$

Where:

SSR = the spiked sample result.
SR = the unspiked sample result.
SA = the value of the spike added.

Acceptable levels of accuracy and precision will be achieved by close adherence to all sampling procedures, sample preservation, decontamination procedures, and analytical methodology. Failure to achieve acceptable levels of accuracy and precision will trigger the implementation of a corrective action as described in Section 12.0 of this QA/QCP.

The objective for field measurement accuracy is to achieve and maintain the manufacturer's specifications for field equipment. The objective for accuracy of laboratory determinations is to maintain a system, which can be demonstrated to achieve measurements that are within accuracy criteria.

4.3 Data Representativeness

Representativeness expresses the degree to which data accurately and precisely represent a characteristic of a population, parameter variation, or environmental condition. Representativeness will be controlled by the consistent collection and analysis of samples according to standardized procedures. Representativeness can be assessed through the measures of precision and accuracy. Field documentation, field duplicate analyses, laboratory QC sample results, and data trend analysis all provide indices for the evaluation of data representativeness.

The degree that the data collected during the Site Remediation represent actual conditions at the Site is a function of the:

- Number and location of data collection points;
- Choice of parameters for physical and chemical analysis; and
- Choice of specific technologies for data collection.

Samples collected must be representative of the population. The sampling program has been developed on a "biased" sampling approach. The sample locations (i.e. excavation sidewalls and bottom) have been selected based on a review of Site information and engineering practicability.

Representativeness of specific samples will be achieved by the following:

- Using appropriate sampling procedures, sample containers, and equipment;
- Using appropriate analytical methodologies for the parameters and detection limits required;
- Using applicable techniques for homogenizing samples prior to analysis where appropriate;
- Analyzing the sample within the appropriate holding time; and

- Properly preserving and storing the samples.

Sampling devices will be cleaned between sampling points to minimize the potential of cross-contamination between samples and thus producing samples that "misrepresent" actual sample quality. Decontamination procedures are described in Section 6.3 of this QA/QCP.

A trip blank, which consists of sampling glassware filled with deionized, analyte-free water at the laboratory, will be included in each cooler of dewatered groundwater samples shipped to the laboratory for VOC analysis.

The laboratory will make every reasonable effort to assure that soil samples are adequately homogenized prior to taking aliquots for analysis, so that the reported results are representative of the sample received. It must be recognized that excess handling may expose the sample to significant risk of contamination and will be avoided if possible.

4.4 Data Completeness

Completeness is a measure (percentage) of the amount of valid data obtained from a measurement system relative to the amount that would be expected to be obtained under correct, normal conditions. Valid data are data that are soundly founded as evidenced by the successful attainment of the Data Quality Objectives set forth for their determination.

$$\text{Completeness (A\%)} = \frac{\text{No. of valid values reported for parameter y x 100}}{\text{No. of samples collected for analysis for y}}$$

Based on site accessibility, it is believed that 100 percent of the proposed samples can be collected. It is expected that the laboratory will provide data meeting QC acceptance criteria for 95 percent of all samples analyzed. Laboratory data will be reviewed by the laboratory and project QA/QC officers for completeness. Corrective actions to achieve a complete data set may include any of the following: re-analysis, re-extraction and/or re-sampling.

The QA objective for completeness will be optimized by employing and evaluating frequent QC checks throughout the analytical process so that sample data can be assessed for validity of results and to allow for reanalysis within the hold time when QC indicates a problem.

4.5 Data Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data generated from this Site should be comparable with similar sample matrix measurements made by others such as previous site investigations.

To assure that the measurements are comparable, sample collection and analysis will follow standard EPA methods; also, standard-reporting units will be used for all data. Soil sample analytical data will be reported in units of micrograms per kilogram (ug/kg) or parts per billion (ppb). Aqueous sample data for organic analytes will be reported in micrograms per liter (μg/l).

The comparability objective for this project will be attained by:

- Previous studies at the site, equivalent sampling and testing will be used;
- Demonstrating traceability of standards to the National Institute of Standards and Technology or USEPA sources;
- Using standard methodologies;
- Reporting results from similar matrices in consistent units;
- Applying appropriate levels of QC within the context of the Laboratory Quality Assurance Program; and
- Participating in inter-laboratory performance evaluation studies in support of laboratory certification to document general laboratory performance.

4.6 Traceability

Traceability is defined as the ability to reconstruct and review all aspects of the measurement system through available documentation.

Field activities should have the following documentation to support traceability:

- Standard Operating Procedures;
- Field logbooks;
- Names of field personnel; and
- Field personnel training records.

The field measurements should be supported by the following additional documentation:

- Instrument identification numbers;
- Instrument calibration records;
- Instrument precision and accuracy data as measured in the field;
- Source and concentration of the standards; and
- Instrument maintenance records.

Laboratory data traceability documentation exists in two forms: that which links final numerical results to authoritative measurement standards, and that which explicitly describes the history of each sample from collection to analysis. The subcontract laboratory will provide the sample histories as part of the analytical laboratory report.

5.0 ANALYTICAL PROCEDURES

5.1 Analytical Methods

Soil, dewatered fluids, and groundwater monitoring well samples will be analyzed using Level III Analytical Support, as defined in Section 2.3 of this QA/QCP. The analyses will be performed in accordance with U.S. EPA SW-846 methodologies and methods contained in the document titled, "Methods for Chemical Analysis of Water and Wastes" SW-846, 3rd Edition, November 1986 (as updated), EPA-600/4-79-020, 1983 (as updated) and in accordance with New York State ASP protocols. The selected laboratory shall be a NYS DOH ELAP laboratory as well as CLP Tier accredited for each of the sampling categories (i.e., PCBs, TPH, VOCs, SVOCs, and inorganics) in the sampling program.

Level I Analytical Support will be utilized for screening of dust and VOCs in ambient air using dust meters and PIDs, and will be utilized for field screening of PCBs in soil using immunoassay field equipment, as defined in Section 2.3 of this QA/QCP.

The methodologies for the analyses are summarized in Table 1.

5.2 Sample Containers, Preservatives and Holding Times

The types of containers used for specified analyses as well as the required preservation and applicable holding times are detailed in Table 1 of this QA/QCP. All sample containers will be obtained from the subcontracted analytical laboratory. Sample containers will be cleaned and quality controlled in accordance with OSWER Directive No. 9240.0-50A "Specifications and Guidance for Obtaining Contaminant Free Sample Containers ".

All sample containers used will be IChem 300 Series, Eagle-Picher Level I, or equivalent. IChem 300 Series and Eagle-Picher Level I glassware come with a certificate of analysis.

6.0 SAMPLING METHODS AND FIELD MEASUREMENTS

This section of the QA/QCP outlines the procedures and requirements for sampling of soil and groundwater and for field measurements. A summary of the scope of work for sample collection is included in Section 2.2.2 of the QA/QCP. A detailed description of each task procedure is provided in the following Sections of the QA/QCP.

An effort will be made to utilize disposable sampling equipment during field sample collection. Should non-disposable sampling equipment be required, one (1) field blank will be collected per twenty samples/media.

6.1 Soil Sampling

This section outlines the sample collection procedures that will be implemented during the remediation program. As noted in Section 2.2.1, characterization of soil over the past several years as well as the recent Pre-Characterization study have allowed Con Edison and the NYSDEC to agree to a Site-wide pre-characterization of soil. Because of this agreement, sampling of excavated soil will not be necessary for disposal purposes. However, exploratory and confirmatory samples will be collected and analyzed. A summary of specific sampling activities and sampling procedures is provided below.

6.1.1 Sidewall Sampling

The following procedures apply to soil samples collected from the sidewalls of the excavation. One discrete grab sample will be collected for every 25 linear feet of sidewall. Vertical sampling intervals will be from 0-2 feet (to monitor the surficial soil), 2-6 feet, 6-10 feet, 10-14 feet, and 14-18 feet bls. For an excavation of the dimensions of 50 feet by 100 feet, this equals a total of 60 sidewall-sampling locations.

From 0 to 4 feet below ground, the excavation will be safe for on-site personnel to enter without the need for sheeting in order to collect samples. Below a depth of 4 feet, sheeting will be necessary for safety purposes for on-site personnel to enter the excavation.

- Wear the appropriate personal protective clothing and perform ambient air monitoring of the work areas, as dictated by the EHASP.
- Field locate the sampling locations by measuring distance relative to on-site structures and using dimensions obtained from a scaled Site map.
- Clear the area to be sampled of any surface debris.
- Characterize the soil in accordance with the Unified Soil Classification System (ASTM D2488-00).
- Samples to be analyzed for VOCs will be collected first, using a sampling protocol consistent with EPA Method 5035.
- Use either nitrile gloves or stainless steel utensils to collect additional discrete soil from the sidewall and place material into a stainless steel bowl.
- Place in appropriate sample containers for the required testing. (i.e., immunoassay test kit or laboratory analysis).

- Samples for field screening by immunoassay methods will be labeled and stored in an iced cooler until field analysis takes place.
- Samples for laboratory analyses will be labeled and placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of 4^0 C). The coolers will be picked up on-site by a laboratory courier and then transported to the laboratory for analyses.
- Decontaminate all non-disposable equipment following the procedures outline in Section 6.3 of this QA/QCP.
- Excess soil remaining after sampling will be left in the excavation.

6.1.2 Excavation Bottom Confirmation Sampling

- EHASP.
- Field locate the sampling locations by measuring distance relative to on-site structures and using dimensions obtained from a scaled Site map.
- Characterize the soil in accordance with the Unified Soil Classification System (ASTM D2488-00).
- Samples to be analyzed for VOCs will be collected first, using a sampling protocol consistent with EPA Method 5035.
- Use either nitrile gloves or stainless steel utensils to collect portions from the bottom material and place material into a stainless steel bowl.
- Place in appropriate sample containers for the required testing. (i.e. immunoassay test kit or laboratory analysis).
- Samples for field screening by immunoassay methods will be labeled and stored in an iced cooler until field analysis takes place.
- Samples for laboratory analyses will be labeled and placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of 4^0 C). The coolers will be picked up on-site by a laboratory courier and then transported to the laboratory for analyses.
- Decontaminate all non-disposable equipment following the procedures outline in Section 6.3 of this QA/QCP.
- Excess soil remaining after sampling will be left in the excavation.

6.1.3 Field Screening of Soil with Immunoassay Test Kit

The following procedures apply to soil samples collected from the sidewalls and bottom of the excavation. One sample will be collected for every 25 linear feet of sidewall. Additional samples will be collected during the advancement of the excavation. Field analyses will be completed using a "PCB EnSys 12T Soil Test System" Rapid Immunoassay Screen (RIS), provided by Strategic Diagnostics, Incorporated (SDI).

- General calibration to the specific PCB Arochlor-1260 identified at this site will be performed by the manufacturer.
- Calibrate machine to the specific limit once every 12 sample runs (i.e. calibrate using supplied standards to 1.0 ppm of Arochlor 1260 and using supplied standards to 10.0 ppm Arochlor-1260).
- Transfer about 10 grams of soil from stainless-steel bowl into extraction jar.

- Add pre-measured liquid ampule to jar.
- Shake for two minutes, let settle for one minute
- Transfer about 1 ml of liquid from jar using disposable pipette through filter and into buffer tube.
- Place buffer tube into machine and run Rapid Immunoassay Screen for 30 minutes.
- Compare results (in the form of color) to the standards.
- Consult the manufacturer's instruction manual (attached) for any trouble shooting procedures.
- Document all readings, any corrective/maintenance measures, re-calibrations, changes in atmospheric conditions, etc. in the field notebook.
- Decontaminate all non-disposable equipment following the procedures outlined in Section 6.3 of this QA/QCP.
- Excess soil remaining after sampling will be left in the excavation.

6.2 Air Monitoring for VOCs and Airborne Dust

Specific details on action levels are described in the Community Air Monitoring Plan (CAMP) developed for the proposed work. The CAMP is provided in Appendix C of the RAWP.

Photo-ionization detectors (PID) and respirable dust meters will be used for on-site for air monitoring at the Site. The PID will provide data regarding the presence or absence of VOCs in ambient air. Monitoring for VOCs in air will be performed with a Photovac Micro-tip or equivalent. Monitoring for airborne dust will be performed with a respirable dust monitor (MIE Brand, pDR-1000AN Modelor or equivalent).

The following procedure details use of the PID. Isobutylene span gas at a concentration of 100 ppm will be used to calibrate the PID.

- Calibration shall be performed on the frequencies specified in Section 8.2 of this QA/QCP. However, the PID should be checked periodically using calibration gas and re-calibrated as appropriate. The PID calibration should be checked more frequently should atmospheric conditions at the Site change noticeably during the day as indicated by changes from fair to rainy weather, cold front, sudden gusty winds, etc.
- Allow the PID lamp to warm up and confirm that the PID is responsive by using a solvent-based marker (e.g., Sharpie^{TM}) or calibration gas.
- Record both the maximum and steady PID readings in the field logbook.
- The PID readings should be allowed to return to zero prior to the next screening.
- PID readings that climb steadily or are anomalously high should be considered suspect. Check the PID for sensitivity to moisture by placing a saturated paper towel inside a clean empty sample bag, and using the PID to measure the headspace. If readings above the background for the bag are measured check the PID (filter, sample tube, detector window) and re-calibrate. If the apparent moisture effects are not corrected then obtain another PID for subsequent samples.

- PID readings that are anomalously low should be considered suspect and should be checked. Check the PID to confirm that the battery is charged, the pump is working, the probe tube and or filter is not clogged, lamp is on, window is not fogged. Consult the manufacturer's instruction manual for additional trouble shooting procedures.
- Document all PID measurements, any anomalous PID readings, corrective/ maintenance measures, re-calibrations, changes in atmospheric conditions, etc. in the field notebook.

The following procedure details use of the dust meter. Ambient air at an upwind location will be used to calibrate each meter.

- Calibration will be performed each morning prior to beginning the days work activities and checked periodically and re-calibrated as appropriate. Dust meter calibration should be checked more frequently should atmospheric conditions at the site change noticeably during the day as indicated by changes such as sudden gusty winds, etc.
- Program the dust meter to record airborne dust in both real-time concentrations (continuously) and in time averaged concentrations (fifteen-minute averages).
- Allow the dust meter to sample the air passively (i.e. without a pump);
- The dust meter readings should be allowed to return to zero prior to the next screening. Zeroing is accomplished by means of a hand-inflatable "zero air" pouch provided with each meter.
- Review the dust meter readings every 15 minutes and compare the readings with the action levels of 100 and 150 $\mu g/m^3$ (micrograms per cubic meter) above background or upwind as specified in the NYSDOH's community air monitoring action levels.
- Consult the manufacturer's instruction manual for any trouble shooting procedures.
- Document all dust meter readings, any corrective/ maintenance measures, re-calibrations, changes in atmospheric conditions, etc. in the field notebook.

6.3 Groundwater Sampling & Monitoring

This section summarizes the protocol for testing the dewatered fluids prior to disposal to the NYCDEP Treatment Plant and for installing, developing, and sampling groundwater-monitoring wells to be installed for post-remediation monitoring.

6.3.1 Dewatering Fluids Sampling

Discrete excavations will be advanced to 18 feet bls after the excavation (as a whole) has reached 12 feet bls. These excavations will be used by the contractor to control the water levels in the excavation during subsequent excavation. Although the contractor may propose an alternative method (not perimeter well points), the likely method will be the placement of sump pumps in the bottoms of the advance excavations, with the recovered water being conveyed by hose to an oil/water separator and subsequent frac tank. At that point, the water will be pre-treated prior to disposal as described in the RAWP.

The dewatered fluids will pass through an on-site oil-water separate and then into frac tank for settling. From the frac tank the dewatered fluids will pass through an on-site treatment train consisting of a bag-filter (as an additional method to collect sediment) and a Granular Activated Carbon (GAC) unit(s) prior to discharging into a nearby sewer. A permit will be obtained for the discharge from the NYCDEP. Based on the requirements of that permit, samples of the treated and/or untreated water will be collected and submitted for laboratory analysis on a 24-hour TAT for the NYCDEP required analytical suite (for the necessary permit and effluent limits).

- Wear the appropriate personal protective clothing and perform ambient air monitoring of the work areas, as dictated by the EHASP.
- Prepare the sampling Site by laying out clean plastic sheeting on level ground near the sampling area and place equipment and materials to be used on the plastic.
- Collect the samples from the sampling port located on GAC unit into laboratory supplied glassware.
- Place a 5-gallon pail below the sampling port to catch any excess water.
- Record all measurements and any observations in the bound field logbook.
- Discharge any water from 5-gallon pail back into the frac tank.
- Submit samples for the NYCDEP required analytical suite with 24-hour TAT.
- Collect additional samples for the NYCDEP required suite as required.

6.3.2 Monitoring Well Installation

- Wear the appropriate personal protective clothing and perform ambient air monitoring of the work areas, as dictated by the EHASP.
- Prepare the sampling Site by laying out clean plastic sheeting on level ground near the sampling area and place equipment and materials to be used on the plastic.
- Advance borehole with hollow stem auger (HSA) using a conventional HSA drill rig to a design depth of 22-feet below ground or five feet below the observed water table. Record all measurement details in the field logbook.
- Install a polyvinyl chloride (PVC) riser with a 10-foot length of PVC 20-slot well screen.
- Install a filter pack (Morie #1 or equivalent) in the annular space from the bottom of the hole to a depth of two (2) feet above the top of the screen.
- Place a 1- to 2-foot thick bentonite pellet/chip seal immediately above the filter pack and add water and allow the bentonite to hydrate.
- Backfill the remaining annular space with bentonite/cement grout.
- Finish the well at grade with a flush-mount curb box set in cement that is sloped away from the well to prevent water collection at the well.

6.3.3 Well Development

Following installation, all new monitoring wells will be developed as described below.

- Wear the appropriate personal protective clothing and perform ambient air monitoring of the work areas, as dictated by the EHASP.
- Prepare the wellhead by laying out clean plastic sheeting on level ground near the wellhead area and place equipment and materials to be used on the plastic.
- Measure the depth water and depth to the bottom of the well using an electronic oil/water interface probe prior to developing.
- Install dedicated polyethylene tubing with Waterra™ check valve and surge-block in each well. Position the bottom of the tubing so that it is at the approximate center of the water column or well screen. A sufficient length of tubing will remain above ground to allow connection to a peristaltic or bladder pump.
- Utilize traditional Waterra pumping oscillations to remove water and sediments from the well and the formation outside the screen.
- Periodically attach a peristaltic pump to the aboveground connection at periodic rates of one to two liters per minute to clear the well.
- Place all discharge water in five-gallon buckets for appropriate disposal.
- Repeat this process several times to maximize sediment movement.
- After several surge and pump sequences, purge the well using low-flow development/sampling technique, i.e. via a bladder pump or a peristaltic pump through a closed flow-through cell (for field parameter monitoring).
- Collect the development water in 5-gallon buckets.
- Every well volume, collect pH, specific conductivity, temperature, and turbidity measurements during development and record the results in the field logbook.
- Continue monitoring well development until the purge water is 50 NTUs, or a maximum of 2 hours.
- Upon completing the development, transfer the development water from the 5-gallon buckets to NYSDOT-approved closed-top 55-gallon drums. Drums should not be filled more than half full and properly labeled.
- The drums will be labeled as waste fluids and temporarily stored on-site in an area designated by Con Edison and the property owner prior to proper disposal by Con Edison.

6.3.4 Groundwater Sampling from Monitoring Wells

As specified in the RAWP, the four new monitoring wells, along with all remaining project-related wells (all off-site), will be gauged for the presence or absence of product and depth to water on a quarterly basis as part of post-remediation confirmation. Following water level measurements, each of the project-related wells will be purged and low-flow sampled as outlined below. Sampling will be performed approximately two weeks after completing well development and then for a minimum of three additional quarters.

- Wear the appropriate personal protective clothing and perform ambient air monitoring of the work areas, as dictated by the EHASP.

- Prepare the sampling Site by laying out clean plastic sheeting on level ground near the sampling area and place equipment and materials to be used on the plastic;
- Collect the samples from the non-contaminated or known or suspected least contaminated wells first and then to wells of increasing contamination to avoid potential cross-contamination.
- Prior to sampling use a decontaminated electronic oil/water interface probe to gauge the depth to product (if any) and depth to groundwater.
- Record all measurements and any observations in the bound field logbook.
- Position the bottom of the dedicated polyethylene tubing with Waterra™ check valve, that was left in the well after well development, so that the bottom is at the approximate center of the water column or well screen. Sufficient length of tubing will remain above ground to allow connection to a peristaltic pump.
- Install a new section of flexible hose on the peristaltic pump and connect the hose to the tubing.
- Turn on the bladder or centrifugal pump and purge groundwater at a rate of 200-500 ml/minute from the well. If the well goes dry, allow the well to recover and collect a sample.
- Measure flow rate using a container calibrated for volume and a stopwatch.
- During well purging, pump groundwater through a flow-through cell or collect periodic samples into a clean container and measure and record the following parameters using a water quality multi-meter: pH, conductivity, temperature, and turbidity.
- Perform measurements each well volume until the well parameters have stabilized (described below). Every effort should be made to lower the turbidity to < 50 NTU before sampling. If the turbidity cannot be reduced below 50 NTU's, samples may be collected if all other parameters are stable. Measurements will be recorded in the field logbook.
- Parameter stabilization is considered to be achieved when three consecutive readings collected at each well volume, are within the following limits:

    - Turbidity (+/-10% for values greater than 1 NTU);
    - Specific conductance (+/-5%);
    - Temperature (+/-0.1 degree Celsius); and
    - pH (± 0.1 unit).

- During well purging, record pump tubing intake depth (a minimum of two feet above the bottom of the well), the water level, the water level drawdown, and flow rate in the field logbook.
- After purging has been completed, stabilization has been achieved, or the well has been allowed to recover, collect a groundwater sample through the tubing at a flow rate of 100-250 ml/minute.
- After all samples have been collected at each well, the bladder or centrifugal pump shall be disconnected from the polyethylene sampling tubing.
- During the purging process, collect the purge water in 5-gallon buckets.

- Upon completing the purging or as necessary, transfer the purge water from the 5-gallon buckets to NYSDOT-approved closed-top 55-gallon drums. Drums should not be filled more than half full and properly labeled.
- The drums will be labeled as waste fluids and temporarily stored on-site in an area designated by Con Edison and the property owner prior to proper disposal by Con Edison.
- The probe shall be decontaminated following the procedures outlined in Section 6.3 of this QA/QCP.

6.4 Decontamination

Between soil sampling (excavation phase) and groundwater monitoring (post-excavation phase) locations, the sampling equipment, and non-disposable field equipment will be decontaminated. Decontamination will be performed as follows:

- Rinse with potable water;
- Use a bristle brush and potable-water/Alconox™ (or an equivalent non-phosphate soap) solution to remove residual soil;
- Rinse with potable water;
- Rinse with isopropanol; and
- Perform a final rinse with deionized water.

The water generated through the decontamination procedures will be handled in a manner consistent with that used for the development fluids.

6.5 Field Documentation

Documentation of field observations and measurements will be primarily recorded in a field logbook. The field logbook will contain all field observations, notes, measurements, etc. Field logbooks utilized on this project will consist of a bound, water-resistant notebook. All pages of the logbook will be numbered sequentially and observations will be recorded in indelible ink. Field log sheets may also be used to record field measurement, observations, data, etc., but will be considered secondary records.

The field logbook for this project will be project-specific and will be maintained in the project files following completion of the Site Remediation field program.

For sampling and field activities, the following types of information may be recorded:

- Project name;
- Date;
- Time of notebook entry;
- Personnel;
- Specific activities being conducted;
- Weather conditions;
- Subcontractor information;
- Site observations;

- Site sketches; and
- Photograph log.

The following sections outline the information that will be documented in the field according to the media to be sampled and the activities to be performed:

Soil Sampling

- Personnel;
- Location diagram;
- Date and time of sampling (start and end);
- Sample location ID;
- Depth interval of sample collection;
- Parameters to be analyzed;
- Description of sampling procedures;
- PID readings;
- Description of visual observations of soil properties (soil type, color, odors, etc.);
- General observations;
- Weather conditions;
- Identification and description of any field duplicate samples; and
- Photograph logs.

Dewatering Fluids Sampling

- Personnel;
- Location diagram;
- Date and time of sampling (start and end);
- Sample location ID;
- Parameters to be analyzed;
- Description of sampling procedures;
- PID readings;
- Description of visual observations of water properties (clarity, odors, etc.);
- General observations;
- Weather conditions; and
- Identification and description of any duplicate samples;

Post-Excavation Monitoring Well Installation and Development

- Personnel;
- Drilling subcontractor;
- Location diagram;
- Date and time of installation activities start and end;
- Sample location ID;
- Depth of water table;
- Well construction materials and design;

- Well depth and screened interval, location and type of seals;
- Description of installation procedure;
- PID readings;
- Description of visual observations of soil and water (soil classification, odors, water clarity, etc.);
- General observations;
- Well development procedures and pump rates;
- Field parameter measurements (pH, temperature, conductance, turbidity, etc.);
- Photograph log;
- Drum log;
- Weather conditions; and
- Identification and description of any duplicate samples.

Groundwater Monitoring Well Sampling

- Personnel;
- Location diagram;
- Date and time of sampling (start and end);
- Sample location ID;
- Depth interval of sample collection;
- Parameters to be analyzed;
- Description of sampling procedures;
- PID readings;
- Description of visual observations of water properties (clarity, odors, etc.);
- General observations;
- Drum log;
- Weather conditions;
- Identification and description of any duplicate samples;
- Well depth and depth to water;
- Field parameter measurement (pH, temperature, conductance, turbidity, etc.);
- General condition and integrity of monitoring well;
- Purge (low-flow) rate; and
- Purge volume.

6.6 Sample Identification

Each sample will be identified using an alphanumeric code in all field notes, chain-of-custody forms, and laboratory reports. The sample identification system will consist of the letters MA- for Site identification, followed by sample type and number, and depth, if appropriate.

Site Identification MA – Maspeth

Sample Type: SW – Side Wall
SSB – Soil Sample Bottom (of Excavation)
DF – Dewatering Fluid
MW – Monitoring Well

Sample Designation: Identifier (letter or number(s)) corresponding to the sidewall, bottom, frac tank, monitoring well

Along each sidewall, soil samples will be collected at intervals of 25 linear feet, in an X, Y grid pattern. The point of origin (or 0, 0) will be the southeast corner. The X-axis will be from east to west and the Y-axis will be from south to north.

The post-excavation bottom samples will also be collected in an X, Y grid pattern, with the origin at the southeast corner. The X-axis will be from east to west, and the Y-axis will be from south to north. Post-excavation bottom samples will be collected at a rate of one for every 250 square feet of bottom.

For Frac Tank samples and monitoring well samples the identifier will be numerical.

Sample Interval: (X-Y) representing the sample interval in feet below ground surface, if necessary.

Example 1: MA-SW-0, 25 (6-10)

Where: SW = Sidewall
0, 25 = Location along East Sidewall, 0 feet from origin in X-direction and 25 feet from origin in Y-direction.
(6 - 10) = sample depth in feet

Example 2: MA-SSB-50, 50 (18)

Where: SSB-1 = Bottom of Excavation at x=50, y=50.
18 = Bottom of Excavation Depth in feet (assumed to be 18 feet)

Example 3: MA-MW-501

Where: MW-501 = Groundwater sample collected from monitoring well MW-501

Waterproof labels marked with indelible ink, or the equivalent, will be used on all sample containers.

For QC samples the following stand alone notation, as in the case of trip blanks, or as suffix as in the case of MS for example, will be used in addition to the protocol outlined above;

Trip Blank – TB

Field Blank – FB

Field Duplicates – Instead of using the actual sidewall or bottom identifiers, duplicates will be designated by a letter starting with A (for the first duplicate). For these types of samples the sample interval will be the date followed by the date plus two. For example, the duplicate sample for a sidewall sample collected from 10 feet along the south sidewall on October 23 may be labeled as MA-SW-A (23-25). Subsequent duplicates would be designated as "SW-B", "SW-C". This method has been established to ensure that the duplicates are submitted as blind samples to the analytical laboratory.

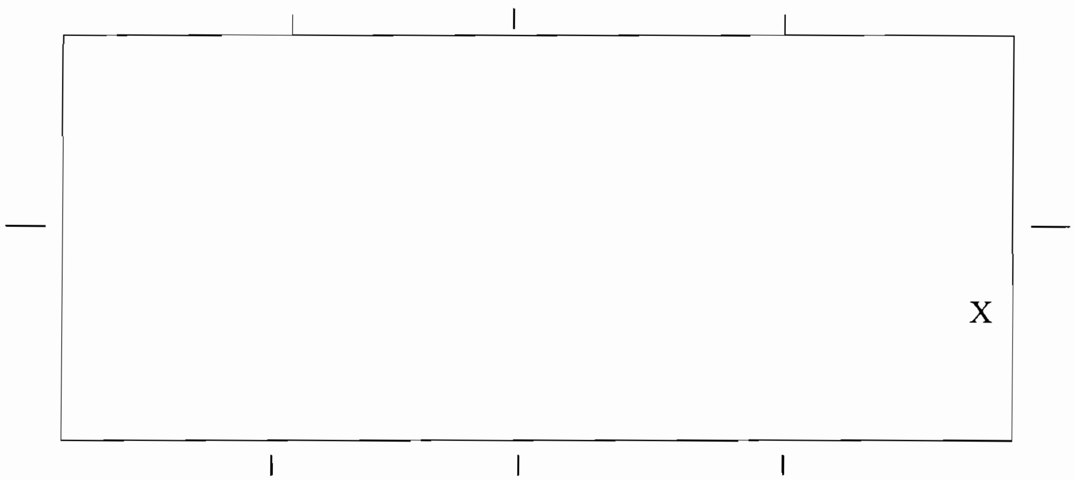
For samples from the monitoring wells, the duplicate sample will be designated with the collection point (MW-) followed by a letter starting with A (for the first duplicate). For example the first groundwater duplicate from say MW-503 will be MW-A. Subsequent duplicates would be designated as "MW-B", "MW-C", etc.

Matrix Spike – MS

Matrix Spike Duplicate – MSD

Sidewall Grid Sampling

North Sidewall



South Sidewall

X = MA-SW-0,25 (6-10)

Bottom of Excavation Sampling

North

	X MA-SSB –75,40 (18)		

South

7.0 SAMPLE HANDLING AND CUSTODY

The sample handling, from collection in the field to shipment to the off-site laboratory, including tracking and custody requirements are outlined in this section.

7.1 Sample Labeling

Each sample bottle will be identified with a separate identification label. Labels may be pre-printed and/or augmented by notations made in indelible/waterproof ink. Entry errors will be crossed out with a single line, dated, and initialed. Each securely fixed label will include:

- Project identification;
- Sample identification;
- Sampler's name;
- Preservatives added;
- Type(s) of analysis(es) to be performed; and
- Date and time of collection.

7.2 Sample Handling

Samples will be stored in on-site coolers packed with ice until they are delivered to the laboratory for analysis. Bottles will be packed tightly with Styrofoam, bubble wrap, or similar soft packing materials to protect the containers from breakage. Ice will be added to the cooler along with the chain-of-custody (COC). Coolers will be stored in protected, cool areas to ensure that the samples stay as cool as possible (without freezing). Samples will be placed in coolers directly following sampling to prevent overexposure to sunlight. Field personnel will be responsible for the security of the samples prior to shipment. Coolers will be stored in a secure or monitored area prior to shipment to the laboratory.

Samples selected for laboratory analysis will be handled and maintained following chain-of-custody protocol. The Field Team Leader who is overseeing the field work will also be responsible for the security of samples prior to deliver to the lab. A chain-of-custody will be completed and maintained with the samples, prior to delivery to the laboratory.

Samples will be transported by vehicle to the laboratory for analysis. All coolers delivered to the laboratory will be sealed with mailing tape and a COC seal signed and dated by the person who signs the COC form for that particular cooler of samples. A COC seal will be taped over using clear mailing tape to prevent them from being broken during shipment. Samples will be transported to the laboratory within 24 hours of collection.

Field personnel responsible for sample collection will coordinate with the laboratory the quantity, type and delivery dates for the samples. Field personnel will update the laboratory on any changes in this information. If prompt delivery of samples cannot be guaranteed, the field personnel will be responsible for proper storage of samples until adequate transportation arrangements can be completed. The field personnel will keep the laboratory informed of all field-sampling activities. This communication will be important to allow the laboratory enough time to prepare for the sample's arrival.

7.3 Sample Custody

Sample custody will be designed to assure that each sample is accounted for at all times. The program's sample custody procedures that will be followed during the sample handling activities from the field to the laboratory are summarized below. The laboratory is responsible for sample receipt from the designated shipping agent, completion of the COC documents, verification of proper sample preservation, recording cooler temperatures, maintaining samples in secure properly designated areas, and maintaining internal chain-of-custody documents. The laboratory will notify the on-site engineering staff and/or Con Edison immediately of any sample receipt issues that impact sample integrity and data quality. The objective of the sample custody identification and control system will be to assure, to the extent practicable, that:

- All samples scheduled for collection are uniquely identified;
- The correct samples are analyzed and are traceable to their records;
- Important sample characteristics are preserved;
- Samples are protected from loss or damage;
- Any alteration of samples (e.g., filtration, preservation) is documented;
- A historic record of sample integrity is established; and
- Client confidentiality is maintained.

The COC protocol followed by field sampling personnel will include:

- Documenting procedures and amounts of reagents or supplies that become an integral part of the sample from sample preparation and preservation;
- Recording sampling locations, sample bottle identification, and specific sample acquisition measures on the appropriate forms;
- Using sample labels to document all information necessary for effective sample tracking; and
- Completing COC to establish sample custody in the field before sample shipment.

When coolers are packed and sealed for shipping, the sampling personnel responsible for relinquishing the cooler to the courier will sign the COC form.

The COC will be used to:

- Document sample handling procedures including sample location, sample number and number of containers corresponding to each sample number;
- Document the sample; and
- Document the COC process.

The COC form includes:

- The sample number and the sample bottle identification number, where applicable;
- The name(s) of the sampler(s) and the person shipping the samples;
- The purchase order number, if applicable;
- The project name and number;
- Signature of the samplers;
- The date and time the samples were delivered for shipping;
- The sample description(s);
- The matrix of the sample;
- The number of containers for a particular sample;
- Analysis, container type, and preservation information;
- Analytical data reporting requirements; and
- Category B deliverable will be requested in the notes section of the chain.

Correction or revision to a COC will be made by drawing a single line through the original entry, writing the revision and initialing and dating the new entry.

Sample custody and control procedures are an integral part of any field operation. Sample custody is often implemented through chain-of-custody procedures.

8.0 EQUIPMENT CALIBRATION AND MAINTENANCE

A maintenance, calibration and operation program is implemented to ensure that routine calibration and maintenance is performed on all field instruments. The program provides instruments of the proper type, range, accuracy and precision to provide data compatible with the specified requirements and desired results. Calibration of measuring and testing instruments is performed internally using in-house reference standards or externally by agencies or manufacturers.

8.1 Responsibility

The Project QA/QC Officer is responsible for ensuring that the field instruments used in the investigations are calibrated and maintained according to manufacturer's specifications. Field instrument instruction manuals describing calibration, maintenance and field operating procedures for these instruments will be on file at the Site for easy reference by field personnel and other project personnel.

The Field Team Leader will be familiar with the field calibrations, operation and maintenance of the instruments, and will perform the prescribed field operating procedures outlined in the operation and field manuals accompanying the respective instruments. They will keep records of all field instrument calibrations and field checks in the field logbook.

8.2 Calibration

As specified in Table 2, field instruments, including PIDs, dust meters, immunoassay field kit, and oil/water interface probe will be calibrated, at a minimum, at the start of each day of fieldwork. The PID and dust meters will be calibrated a minimum of twice daily. More frequent calibration may be warranted based on changes in responsiveness of the instruments or apparently anomalous readings. Refer to Section 6.2 for specific conditions and equipment performance that would indicate the need for more frequent calibration. Instruments that fail calibration or become inoperable during use will be removed from service and tagged to prevent inadvertent use. If on-site monitoring instruments fail the Project Health and Safety Officer will be contacted immediately and will either, provide replacement instruments or have the malfunction repaired immediately.

Calibration will be performed following manufacturers instruction as outlined in the instruction manuals for each field instrument including PIDs, dust meters, and the immunoassay field kit. The oil/water interface probe requires no calibration. The Field Team Leader shall have copies in the field of field equipment instruction manuals for all field instruments.

Records will be prepared and maintained for calibrated measuring and testing instruments to indicate that established calibration procedures have been followed (e.g. results of calibration, problems, corrective action). Records for field instruments used only for this specific project will be kept in the project files.

8.3 Preventive Maintenance

Routine maintenance is performed whenever an instrument is acquired for field use, and when returned from field use. Instrument manuals are kept on file for reference purposes should equipment need repair. Troubleshooting sections of manuals are often useful in assisting personnel performing maintenance tasks. Preventive maintenance, other than routine maintenance and calibration, is performed as needed.

Periodic preventive maintenance is required for sensitive equipment. The field instruments are maintained through periodic calibration and adjustment as required by the instrument manufacturer.

Preventive maintenance procedures and records for laboratory instruments will be maintained by the analytical laboratory and will be available to the Project Team upon request.

9.0 INTERNAL QUALITY CONTROL CHECKS

The QC samples discussed below will be collected during the field program and analyzed by the laboratory to assess laboratory and field QA/QC procedures and the data quality.

9.1 Laboratory Internal QC Checks

The Con Edison laboratory is certified by the New York State Department of Health in accordance with the Analytical Services Protocols (ASP). In general, ASP protocols or certification programs require the laboratory to specify the qualifications of personnel; list available instrumentation, analyses performance evaluation samples; and adhere to and document standard operating procedures and quality assurance plans.

It will be the responsibility of the Laboratory QA/QC Officer to document, in each data package provided, that both initial and ongoing instrument and analytical QC functions have been met. Internal quality control checks, including replicates, spiked samples, duplicate samples, laboratory control samples, reagent specifications and checks, and calibration checks, are performed in accordance with the specific methodologies used. The minimum criteria used for analysis will consist of a daily calibration, instrument blank analysis, and sample blank analysis. In addition, at least one spike, one duplicate and one control are analyzed daily for each parameter.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)
Analyses will be collected and submitted to assess laboratory QA/QC. MS/MSD will be run at a frequency of one per twenty samples. The MS and MSD will be collected as separate samples and, thus two volumes of aqueous organic samples will be collected in addition to the routine sample.

9.2 Field Internal QC Checks

For field quality assurance, three types of QA/QC samples will be collected: duplicate, field and trip blank samples. The proposed numbers of QA/QC samples, by type, are discussed below and summarized in Table 3. The sections below describe the purpose of each type of sample.

Field Blanks
Field blanks will be collected throughout the remediation work. Field blanks measure incidental or accidental sample contamination occurring during the entire sample handling process of sampling, transport, sample preparation and analysis. Field blanks can also check on the laboratory water quality and potential method contamination. One field blank will be collected per twenty samples for non-dedicated sampling equipment. Field blanks will be collected by pouring demonstrated analyte-free water over decontaminated soil and into the appropriate sample containers. The field blank will be labeled such that the identity of the sample as a blank will be concealed (i.e., blind blank). Field blanks will be analyzed for the same parameters.

Field Duplicates

The standard frequency for obtaining duplicate samples is one for every twenty samples. Duplicate samples serve as a check on the overall precision of the sampling and analytical methods. Duplicates will be collected in identical, laboratory prepared sample bottles, and will be analyzed for the same parameters. One set of samples will be given the sample identifier indicative of the sample location and the second set of sample bottles will be given a false sample identifier to disguise the identity of the replicated sample (i.e., blind duplicate). Actual sample identifiers for duplicate samples will be noted in the field logbook.

Trip Blanks

A trip blank sample will accompany field samples at a rate of one per shipment. Trip blanks will originate at the contract laboratory, and will be labeled as a trip blank. The water used by the laboratory to prepare the trip blank must be the same as the water used to prepare the method-blank. The trip blanks will accompany the sample containers throughout transport and sampling activities, and will be returned to the laboratory with the field samples. As such, trip blanks will accompany each daily sample shipment containing samples that will be analyzed for VOCs.

10.0 ASSESSMENT AND OVERSIGHT

10.1 Laboratory Performance and System Audits

The analytical laboratory will conduct internal quality control checks and audits in accordance with their internal operating procedures, method specific criteria and governing laboratory or certification programs. Procedures for laboratory performance and system audits will be outlined in the Laboratory Quality Assurance Plan (LQAP). The Laboratory QA Officer will be primarily responsible for conducting these audits. The LQAP will be available to the project team during the project.

The systems audit consists of evaluation of all components of the measurement systems to determine their proper selection and use. Systems audits are normally conducted prior to or shortly after systems are operational, and are then performed on a regularly scheduled basis. Performance audits are conducted periodically, and include the analysis of performance evaluation samples.

10.2 Field Performance Audits

The Project QA/QC Officer or designee will be responsible for auditing project personnel. An audit will be conducted initially during the program to ensure that proper procedures are followed and that subsequent data will be valid. The audit will focus on the details of the QA Program, and will evaluate the following:

- Project Responsibilities;
- Sample Custody Procedures;
- Document Control;
- Sample Identification System;
- QC Corrective Action Procedures;
- Sampling Techniques;
- Adherence to the Approved QA/QC Plan;
- Instrument Calibration;
- Decontamination Procedures; and
- Sample Packing and Shipping Procedures.

The audit will evaluate the implementation of the project QA Program.

The Project QA/QC Officer will also be responsible for conducting one evidence audit. The purpose of the evidence audit is to ensure that proper project documentation is maintained and has been distributed to project personnel.

11.0 DATA REDUCTION, VERIFICATION, USABILITY AND REPORTING

This section of the QA/QCP describes the process that will be followed to verify and validate the project data and field activities. Data verification activities will be performed to ensure that data collected as part of this Site Remediation are consistent with project quality objectives and measurement performance criteria.

11.1 Data Reduction

All data transformation and data reduction procedures will be clearly documented and placed in the project files. All data transformation and data reduction activities performed on the project data will be carefully monitored by both the Project Manager / Project QA/QC Officer, to ensure that data integrity is maintained.

11.2 Data Verification

Data verification and validation activities will be performed to ensure that data collected as part of the remediation work consistent with project quality objectives and measurement performance criteria.

Upon receipt of both electronic and hard copy analytical data, internal checks will be performed to detect possible errors. The data check will be performed by the Project QA/QC Officer. General checks will include the following:

- Verification of all data requested versus received (check of data against COCs);
- Verification of completeness of data packages;
- Verification of cross references between primary and duplicate samples; and
- A minimum of 10% verification of consistency between laboratory data reports and electronic data.

Rigorous quality control checks will be performed on tabular data and through visual checks. All quality control and quality assurance process documentation will be signed off for accountability reasons.

Data checks that will be completed manually for the following:

- Unknown exploration or sampling point ID;
- Misspelled chemical name;
- Unknown chemical synonym;
- New parameter;
- Inappropriate sample type;
- Invalid sample date/time;
- Sample depth outside starting and ending depths;
- Unknown target constituent list ID;
- Non-matching data for primary and duplicate samples;
- Duplicate record;
- Inappropriate test date/time;

- Holding time violation;
- Dilution factor less than or equal to zero;
- New (undefined) query codes;
- Missing fields; and
- Relationships between custody and equipment blanks to primary samples.

For data that are generated in the field, the Project QA/QC Officer will work closely with field personnel to evaluate accuracy and integrity of data collection activities. The Project QA/QC Officer will review field sheets and field notes to verify consistency with field observations and activities.

Prior to release by the off-site laboratories, the data will be reviewed internally by the Laboratory QA/QC Officer against all specific QA/QC parameters. The laboratory will use a system of sign-offs in which each analyst will acknowledge that their part of the analysis is complete. Any deviations will be documented and explained in the final laboratory analytical report. The laboratory is responsible for the final results and overall quality of the laboratory data.

11.3 Data Evaluation and Usability

Acceptance criteria for all field and laboratory internal QA samples (field blanks, duplicates, MS/MSD) will be those specified in the corresponding SW-846 and ASP methodologies.

Critical functions for determining the usability of generated data are:

- Strict adherence to the analytical methods;
- Assurance that the instrumentation employed was operated in accordance with defined operating procedures;
- Assurance that quality parameters built into the analytical procedures have been adhered to; and
- Confirmation that the DQOs have been satisfied.

The procedures for assessing the precision, accuracy and completeness of data have been presented in Section 4.0 of the QA/QCP. It will be the responsibility of the Project QA/QC Officer and the Laboratory QA/QC Officer to ensure that these procedures are followed. The DQIs for each data set will be evaluated by comparison of the actual measurement performance criteria against the acceptable limits of these criteria.

11.4 Reconciliation with User Requirements

A Data Usability Summary Report (DUSR) will be prepared by a third-party data validator, Data Validation Services of North Creek, NY. A resume of the validator, Ms. Judy Harry, is included for NYSDEC approval (see Appendix C). Based on a comparison of the field and laboratory QC data, the Project QA/QC Officer will evaluate how well the analytical data satisfy the DQI and will develop statements regarding the usability of the data relative to the project objectives, project-specific DQOs, and end use of the data.

12.0 CORRECTIVE ACTION

If unacceptable conditions are identified as a result of audits or are observed during field sampling and analysis, the Project QA/QC Officer and the Project Manager will document the condition and initiate corrective procedures. The specific condition or problem will be identified, its cause will be determined, and appropriate action will be implemented.

A corrective action memorandum will be prepared, documenting the problem and detailing the corrective action to be initiated.

Corrective actions may include, but are not limited to, the corrective action matrix presented below.

CORRECTIVE ACTION MATRIX	
Problem	Corrective Action
Sample exceeded holding time criteria.	Re-sample and re-analyze.
Field instruments are not within calibration limits.	Calibrate instrument and retest once an acceptable calibration has been obtained.
Procedures are observed that are not in accordance with the QA/QCP.	QA/QC officer is notified and involved personnel are retrained.

The efficacy of any corrective action will be assessed by project management to ensure that the deficiency or problem has been adequately addressed.

13.0 CORRECTIVE ACTION REPORTS TO MANAGEMENT

Monthly written reports will be issued to the Con Edison Project Manager. The reports will include an assessment of the project status in relation to the agreed upon timetable.

The reports will also include, as appropriate, a summary of the most recent analytical results, audit findings, and any necessary corrective action procedures. A data quality assessment, which summarizes the measurement data accuracy, precision, completeness, and data qualifications will be prepared using all available data. The reports will also include a statement addressing the continuing adequacy and relevance of the methodologies. The data quality assessment will be prepared by the Project QA/QC Officer.

14.0 REFERENCES

U.S. Environmental Protection Agency, *EPA Requirements for Quality Assurance Project Plans*, Development Press, Office of Solid Waste and Emergency Response Directive 9355, 0-7B, March 1987.

U.S. Environmental Protection Agency, *Data Quality Objectives for Remedial Response Activities*, Development Press, Office of Solid Waste and Emergency Response Directive 9355, 0-7B, March 1987.

U.S. Environmental Protection Agency. 1986, Revision 1990. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, Third Edition. Office of Solid Waste and Emergency Response, Washington, D.C.

TABLES

TABLE 1

PROPOSED ANALYTES/CONTAINERS/PRESERVATION/HOLDING TIMES

Parameter	Matrix	Analytical Method	Sample Container	Sample Preservation	Holding Times
PCBs	Soil	EPA Method 8082	(1) 4 oz clear glass	4°C	5 days to extraction then 40 days for analysis*
PCBs	Groundwater	EPA Method 8082	(1) 1L clear glass	4°C	5 days to extraction then 40 days for analysis*
VOCs, BTEX, MtBE, PERC, and Naphthalene	Groundwater	SW846 8260	(2) 40 ml clear glass VOA	4°C	7days*
VOCs	Soil	EPA 5035	Various	4°C	14 days*
SVOCs	Groundwater	EPA Method 8270	(1) Liter Amber Glass	4°C	7days*
SVOCs	Soil	EPA Method 8270	(1) 4 oz Amber Glass	4°C	14 days
Non-Polar or Oil & Grease	Groundwater	SW846 1664	(1) Liter clear glass	4°C	28 days
Metals	Groundwater	SW846 6000/7000	(1) 500 ml plastic	4°C	6 months
Flashpoint	Groundwater	SW846 1010	(1) 50 ml clear glass	4°C	ASAP
Total Suspended Solids	Groundwater	SW846 160.2	(1) 500 ml plastic	4°C	28 days
Total Petroleum Hydrocarbons	Groundwater	EPA Method 8100 - Modified	(1) One Liter Glass w/H_2SO_4	4°C	7days*
	Soil	EPA Method 8100 - Modified	(1) 4 oz Amber Glass	4°C	14 days

* calculated from the verified time of sampling receipt (VTSR)

TABLE 2

INSTRUMENT CALIBRATION FREQUENCY

Equipment[1]	Minimum Calibration Frequency[2]
Photovac Micro-tip	Twice Daily
MIE Brand, pDR-1000AN Modelor	Twice Daily
PCB EnSys 12T Soil Test System" Rapid Immunoassay Screen (RIS),	Daily
Solinst Oil/Water Interface Probe	Daily

NOTES:

(1) Approved, equivalent field instrumentation may be used.

(2) Complete calibration and maintenance instructions for all field equipment is provided in the attached instruction manuals.

TABLE 3
SUMMARY OF SAMPLES
Former Maspeth Subsation, Queens, New York

Matrix	Parameter	Analytical Method (A)	Field Samples: Field Samples	Field Samples: Field Duplicate	Field Samples: MS/MSD (C) (Total)	Field Samples: Sub-Total	QC Blanks: Trip Blank	QC Blanks: Field/Rinse Blank	Total
Pre-characterization Study Samples (E)	PCBs in Soil	EPA SW 8082	43	5	3	51	-	3	54
Soil Excavation Sidewall Samples (B)	PCBs	EPA SW 8082	60	3	3	66	-	3	69
	TPH	EPA 8100 Modified	60	3	3	66	-	3	69
	VOCs	EPA 8260	12	1	1	14	12	-	26
	SVOCs	EPA 8270	12	1	1	14	-	1	15
Interim Samples - North and West Walls	PCBs in Soil	EPA SW 8082	18	1	1	20	-	1	21
Soil Main Excavation Bottom Confirmation Samples (D)	PCBs	EPA SW 8082	20	1	1	22	-	1	23
	TPH	EPA 8100 Modified	20	1	1	22	-	1	23
	VOCs	EPA 8260	4	1	1	6	4	-	10
	SVOCs	EPA 8270	4	1	1	6	-	1	7
Soil Remote Excavation Bottom Confirmation Samples (D)	PCBs	EPA SW 8082	5	1	1	7	-	1	8
	TPH	EPA 8100 Modified	5	1	1	7	-	1	8
	VOCs	EPA 8260	1	1	1	3	1	-	4
	SVOCs	EPA 8270	1	1	1	3	-	1	4
Dewatering Fluids Samples (F)	Volatile Organics	EPA SW 8260	12	1	1	14	12	-	26
	PCBs	EPA SW 8082	12	1	1	14	-	-	14
	Metals	EPA SW 6000/7000 Series	12	1	1	14	-	-	14
	Non-polar or Oil & Grease	EPA SW 1664	12	1	1	14	-	-	14
	Total Suspended Soilds	EPA SW 160.2	12	1	1	14	-	-	14
	Flashpoint	EPA SW 1010	12	1	1	14	-	-	14
Groundwater Monitoring Well Samples	PCBs	EPA SW 8082	48	4	4	56	-	-	56
	VOCs	EPA SW 8260	48	4	4	56	4	-	60
	SVOCs	EPA SW 8270	48	4	4	56	-	-	56
	TPH	EPA 8100	48	4	4	56	-	-	56

Notes:
(A) Results reported using NYSDEC ASP Category B deliverables.
(B) The number of field samples assume that all the excation will proceed as proposed:
(i.e. North and South sidewalls 100 feet by 18 feet deep, East and West sidewalls 50 feet by 18 feet deep)
(C) Matrix spike / matrix spike duplicate for organic analyses; matrix spike and laboratory duplicate for inorganic analysis.
(D) Post excavation bottom samples assumed to be collected at rate of one per 250 SF of bottom.
(E) As described in Section 3.1.4 of the RAWP
(F) Estimated - Actual totals to be determined by the NYCDEP Permit and time of operation

FIGURES

MAP SOURCE: UNITED STATES GEOLOGICAL SURVEY TOPOGRAPHIC MAP

BROOKLYN, NEW YORK

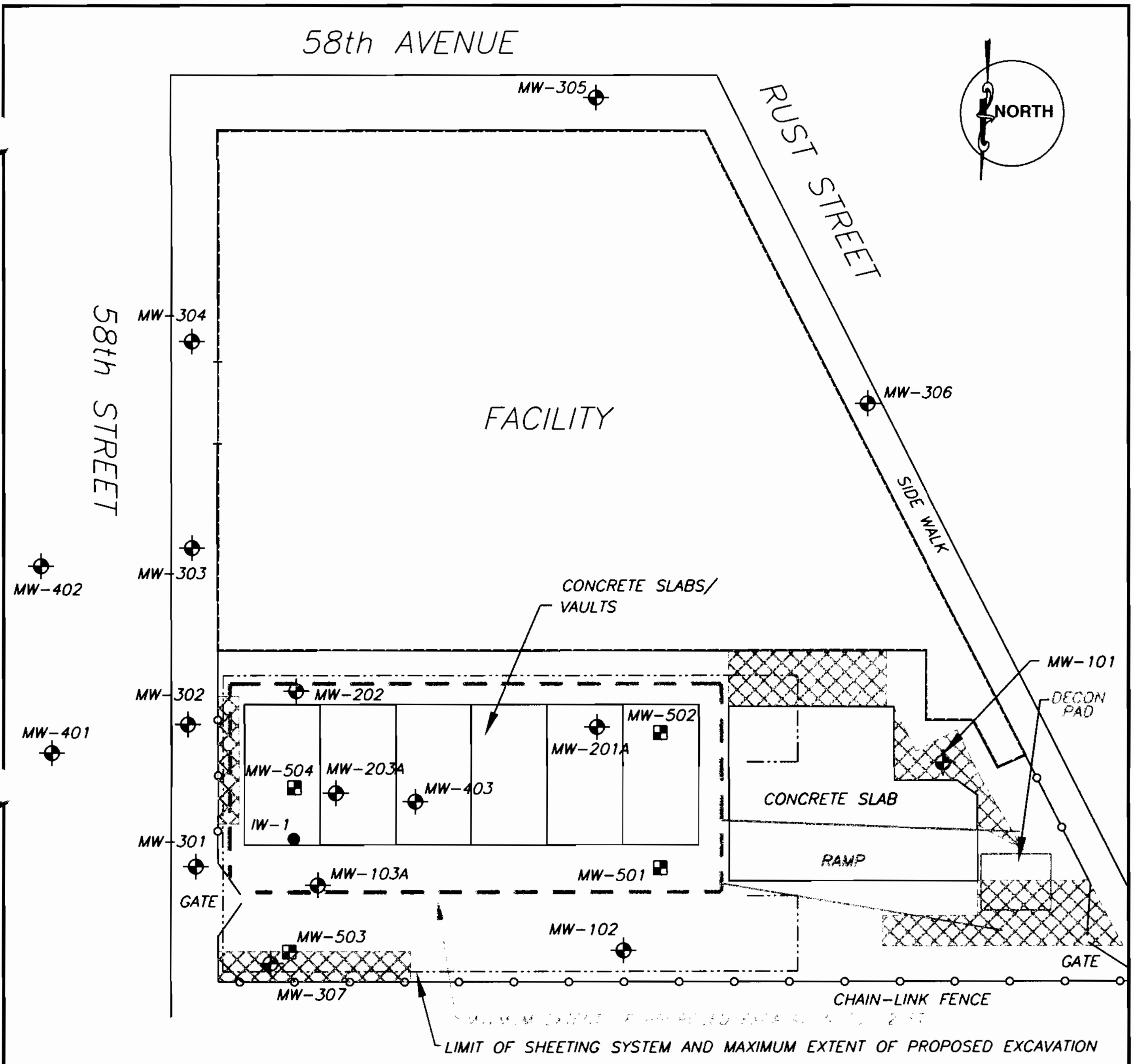
NORTH

2000 0 2000

Scale in feet

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION:					DRAWING TITLE:
PORTSMOUTH, NEW HAMPSHIRE					**SITE LOCATION MAP**
DATE PREPARED: 4-20-00	DESIGNED BY: LDS	DRAWN BY: LDS	CHECKED BY: BSB	REVIEWED BY: DAA	CON EDISON MASPETH SUBSTATION
REVISION DATE:	REVISION NO:	DRAWN BY:	CHECKED BY:	REVIEWED BY:	
PROJECT NAME/FILE NAME: MASPETH/LOCUS1		PROJECT NUMBER/PHASE: NHP96280/129		SCALE: 1:24000	PREPARED FOR: CON EDISON OF NY — FIGURE NO. 1



NOTES:
* MW-203A & MW-201A RE-DRILLED AS 6-INCH DIA. WELLS

30 0 30

SCALE IN FEET

Legend

- MONITORING WELL LOCATION
- IW-1 6-INCH DIAMETER INJECTION WELL
- MW-501 PROPOSED POST-EXCAVATION MONITORING WELL
- AREAS REQUIRING SHALLOW (0-2 FT.) EXCAVATION FOR PCB's >1.0-ppm

Jacques Whitford Company, Inc.

JACQUES WHITFORD LOCATION: PORTSMOUTH, NEW HAMPSHIRE					DRAWING TITLE: **PROPOSED EXTENT OF SOIL EXCAVATION** FORMER MASPETH SUBSTATION 57-77 RUST STREET MASPETH, QUEENS, NEW YORK
DATE PREPARED: 7-16-04	DESIGNED BY: DFM	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DFM	
REVISION DATE: 8-23-04	REVISION NO: 1	DRAWN BY: TS	CHECKED BY: BSB	REVIEWED BY: DH	FIGURE NO. 2
PROJECT NAME/FILE NAME: CON EDISON MASPETH/QAQCP	PROJECT NUMBER/PHASE: NHP03321/*		SCALE: 1"=30'		PREPARED FOR: CON EDISON

APPENDIX A

Users Guide:
PCB EnSys 12T SOIL TEST SYSTEM
Rapid Immunoassay Screen

STRATEGIC DIAGNOSTICS INC.

PCB EnSys®
12T SOIL
TEST SYSTEM

70203

RAPID IMMUNOASSAY SCREEN

User's Guide

IMPORTANT NOTICE

This method correctly identifies 95% of samples that are PCB-free and those containing 1 ppm or greater of PCBs. A sample that develops less color than the standard is interpreted as positive. It contains PCBs. A sample that develops more color than the standard is interpreted as negative. It contains less than 1 ppm PCBs.

This test system should be used only under the supervision of a technically qualified individual who is capable of understanding any potential health and environmental risks of this product as identified in the product literature. The components must only be used for the analysis of soil samples for the presence of polychlorinated biphenyls. After use, the kits must be disposed of in accordance with applicable federal and local regulations.

TROUBLESHOOTING GUIDE

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

WASH STEP

Lack of vigorous washing may result in false positives or negatives depending on whether the wash error was committed on standard or sample tubes. Solution: Make sure to wash four times vigorously, washing the whole set of 12 tubes at once.

PIPET CALIBRATION

An out-of-calibration pipet may result in false positives or negatives depending on whether the amount is greater or less than the specified transfer volume. *Solution*Check the calibration at least daily and after any extreme mechanical shock (such as dropping). An indication that the pipet is out of calibration is if the gold barrel is loose and will turn. (When set on 30 µl there should be about a 1/4 of an inch between the white plunger and the end of the clear pipet tip.)

AIR BUBBLES IN THE PIPET

The presence of air bubbles in the pipet tip when transferring extracts may result in false positives or negatives depending on whether the error was committed on standard or sample tubes. *Solution*Quickly examine the pipet tip each time an aliquot is withdrawn and go back to the source and take another aliquot to displace the bubble if necessary.

MIXING

Lack of thorough mixing, when instructed, can cause inconsistent results. *Solution*Observe the times in the instructions and mix with sufficient force to ensure that the liquid is homogenous.

TIMING

It is important to follow the timing steps in the instructions carefully. The incubation step in the antibody tubes can vary a bit without harm to the tests. The color development step timing is critical and should be no less than 2 minutes and no greater than 3 minutes.

WIPING THE TUBES

Wiping of the tubes should be done before they are read in the spectrophotometer because smudges and fingerprints on the tubes can give potentially false negative readings.

MIXING LOT #'S

Never mix lots! Each kit's components are matched for optimal performance and may give inaccurate results with the components from other kits with different lot #'s. Also, NEVER mix components from different types of kits (ex: Petro kit buffer can not be used with a PAH kit).

STORAGE AND OPERATING TEMPERATURES

Temperature requirements are very important and should be strictly adhered to. This test kit should be stored at less than 80°F/27°C and operated between 40°F/4°C and 90°F/32°C.

SHELF-LIFE

Each kit label contains the kit expiration date. To achieve accurate results, kits must be used prior to expiration.

WORKSTATION SET-UP

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

WORKSTATION SET-UP

- Mechanical pipet tips
- Filter barrels & plungers
- Ampule cracker
- Glass PCB buffer tubes
- Substrate A
- Eppendorf pipet tips
- Bulb pipets
- PCB standard
- Antibody coated tubes
- Substrate B
- Extraction jars
- 1 & 10 ppm dilution ampules
- Stop Solution

Workstation shows components for 3 samples tested at 2 levels

TEST PREPARATION

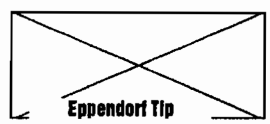
READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING

- Do not attempt to run more than 12 tubes, two of which must be standards.
- Items that you will need that are not provided in the test kit include: a permanent marking pen, laboratory tissue (or paper towels), a liquid waste container, and disposable gloves.
- This User's Guide was written for analyzing soil samples for PCBs at 1 and 10 ppm. See table on page 10 for sensitivity to various Aroclors.

TEST PREPARATION

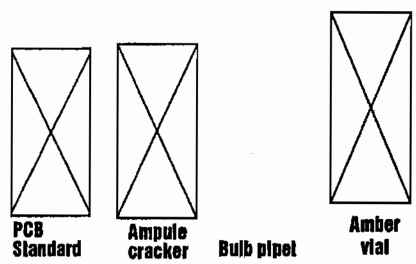
- Label all Eppendorf repeater tips. Tips can be reused for future analyses. Label the first 5mL tip "A", the second 5mL tip "B" and the third 5mL tip "Stop".



- Label the 12.5 mL tip "Buffer".

STANDARD PREPARATION

- Open PCB Standard ampule by slipping ampule cracker over top, and then breaking tip at scored neck. Transfer solution to empty vial with Bulb Pipets.



- Label vial with current date. Standard is usable for 2 weeks. Always cap tightly when finished using standard.

PHASE 1 EXTRACTION & PREPARATION OF THE SAMPLE

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

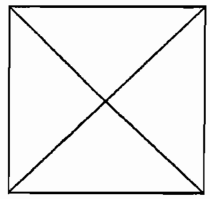
WEIGH SAMPLE

1a. Place unused weigh boat on pan balance.

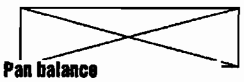
1b. Press ON/MEMORY button on pan balance. Balance will beep and display 0.0.

1c. Weigh out 10+/-0.1 grams of soil.

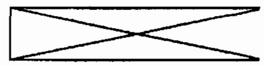
1d. If balance turns off prior to completing weighing, use empty weigh boat to retare, then continue.



Weigh Boat



Pan balance



Wooden spatula

EXTRACT PCBS

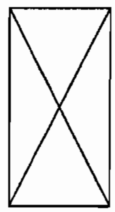
2a. Uncap extraction jar and place on a flat surface. Without contacting solvent puncture foil seal with ampule cracker or sharp object. Peel the remainder of the seal off extraction jar.

2b. Using wooden spatula, transfer 10 grams of soil from weigh boat into extraction jar.

2c. Recap extraction jar tightly and shake **vigorously** for one minute.

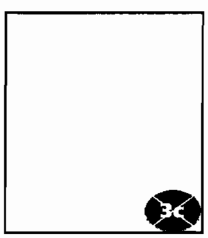
2d. Allow to settle for one minute.

Repeat steps 1a - 2c for each sample to be tested.



Extraction Jar

FILTER SAMPLE

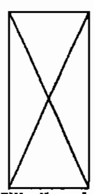


3a. Disassemble filtration plunger from filtration barrel.

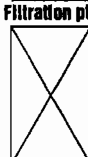
3b. Insert bulb pipet into top (liquid) layer in extraction jar and draw up sample. Transfer **at least ½** bulb capacity into filtration barrel. **Do not use more than one full bulb.**

3c. Press plunger firmly into barrel until adequate filtered sample is available (place on table and press if necessary).

Repeat steps **3a - 3c** for each sample to be tested.



Filtration plunger



Filtration barrel

Bulb pipet

READ TO AVOID COSTLY MISTAKES

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

SAMPLE DILUTION PROGRAM

1. The sample dilution procedure on the next page is for standard detection levels. The following diagram represents the sample dilution procedure for all other detection levels.

2. Your kit may include extra dilution ampules to reach high detection levels.

3. EVERY AMPULE PROVIDED MUST BE USED!

If there are any questions concerning the dilution procedure please call SDI Technical Services before running the samples to help avoid costly mistakes. (1-800-544-8881)

EXAMPLE:

Lowest ppm **Intermediate ppm** **Highest ppm**

Dilution Ampules

NOTE: **Your Kit may include additional ampules in order to achieve your test levels. Always transfer filtered sample to the dilution ampule labeled with the lowest PPM level and then transfer from this ampule to the next higher level dilution tube.**

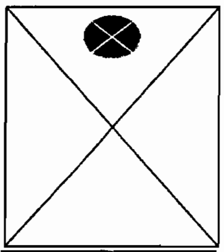
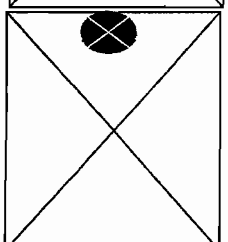
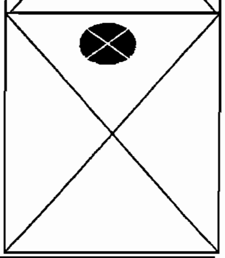
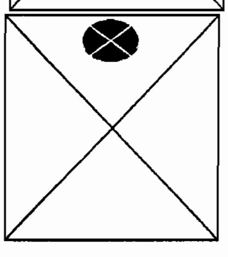
PHASE 2 SAMPLE & STANDARD PREPARATION

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING

- Label the plastic antibody coated tubes with a permament marking pen.
- When using the mechanical pipet always withdraw and dispense below the liquid level.
- "Shake tubes" means to thoroughly mix the contents with special care not to spill or splash.

DILUTE SAMPLES AND STANDARDS

4a. Set the Eppendorf Repeater on 4, assemble the "Buffer" tip and fill with Buffer.

4b. Dispense 1 mL of Buffer into each glass buffer tube.

4c. Open 1 and 10 ppm dilution ampules by slipping ampule cracker over top, and then breaking top at scored neck.

4d. Withdraw 60 μL of filtered sample using mechanical pipet and dispense below the liquid level in "1 ppm" dilution ampule. Gently shake ampule from side to side for 5 seconds to mix thoroughly.

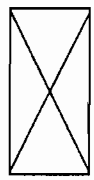
4e. Withdraw 60 μL from the "1 ppm" dilution ampule using mechanical pipet and dispense below the liquid level in "10 ppm" dilution ampule. Gently shake ampule from side to side for 5 seconds to mix thoroughly.

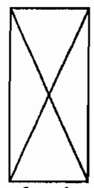
4f. Transfer 60 μL from each dilution ampule into glass buffer tubes. Always wipe tip after dispensing into buffer tube.

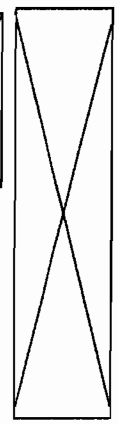
4g. Change pipet tip and repeat **4d - 4f** for each sample.

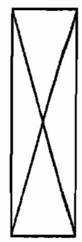
4h. Assemble new pipet tip on mechanical pipet and transfer 60 μL from Standard vial into two glass buffer tubes. Immediately replace cap on PCB Standard vial.

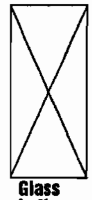
4i. Shake all glass buffer tubes for 5 seconds.

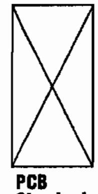

Dilution ampules


Ampule cracker


Mechanical pipet


Mechanic pipet tip


Glass buffer tubes


PCB Standard vial

PHASE 3 THE IMMUNOASSAY

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

TRANSFER FROM DILUTION TUBE TO ANTIBODY COATED TUBE

5b.1

5b.2

5c

5a. Set timer for 10 minutes

5b. Working left to right in the workstation:

1. Fit all antibody coated tubes firmly on top of all corresponding glass buffer tubes.
2. Start timer and immediately invert all connected tube pairs so that the liquid is poured into the antibody coated tubes. Return the tube pairs to the appropriate workstation row making sure the larger (antibody coated) tube is on the bottom.

5c. Invert all tube pairs several more times making sure the pair is returned to the workstation with the larger (antibody coated) tube on the bottom.

5d. Disconnect and discard the smaller (dilution) tubes. It is not important to worry about drops of liquid adhering to lips of tubes.

5e. Place conjugate tubes behind antibody tubes in workstation. Remove grey caps and discard.

TRANSFER OF CONJUGATE TO ANTIBODY COATED TUBES

6b

6c

6d

AFTER 10 MINUTES, IMMEDIATELY:

6a. Set timer for 5 minutes.

6b. Working left to right in the workstation:

Start timer and immediately:

Dissolve the conjugate pellets by horizontally connecting the antibody coated tubes and conjugate tubes and **tilt the liquid up to pour it onto the conjugate.**

6c. Return the connected tubes to the appropriate workstation row making sure **the larger (antibody coated) tube is on the bottom. It is important that this step is completed within one minute for all tubes.**

6d. In order to adequately mix solution, **invert** all connected tube pairs **several more times** making sure that the pair is returned to the workstation with the larger (antibody coated) tube on the bottom.

6e. Disconnect and discard the conjugate tubes. It is not important to worry about the loss of liquid adhering to lip of tubes.

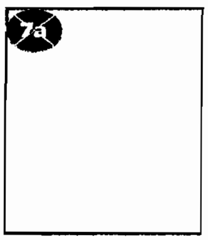
PHASE 3 THE IMMUNOASSAY

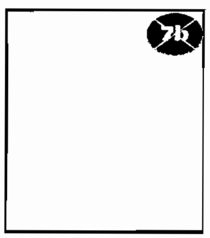
READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING
WASH PROCEDURE

- An accurate test requires a vigorous wash accomplished by directing a strong stream into the antibody coated tubes.
- The wash solution is a harmless, dilute solution of detergent.

WASH



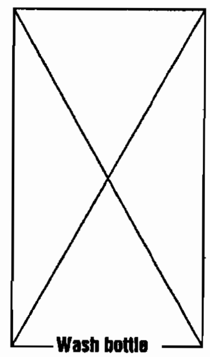


7a After the 5 minute incubation, empty antibody coated tubes into liquid waste container.

7b Wash antibody coated tubes by vigorously filling and emptying a total of 4 times.

7c Tap antibody coated tubes upside down on paper towels to remove excess liquid. Residual foam in the tubes will not interfere with test results.

Note: When running up to 12 antibody coated tubes, tubes can be washed in two groups - one group immediately following the other group.



PHASE 3 THE IMMUNOASSAY

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

COLOR DEVELOPMENT

8a. Set the Eppendorf Repeater on 2, assemble the "A" tip and fill with Substrate A (TMB, yellow label).

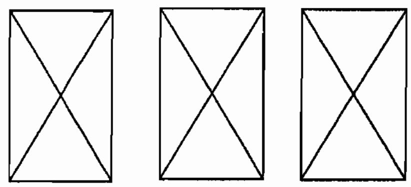
8b. Dispense once (200 μL) into each antibody coated tube.

8c. Set timer for exactly 2 1/2 minutes.

8d. Assemble "B" tip, fill with Substrate B, start timer, and dispense once (200 μL H_2O_2, green label) into each antibody coated tube.

8e. Shake all tubes for 5 seconds. Solution will turn blue in some or all antibody coated tubes.

8f. Assemble "Stop" tip, fill with Stop Solution (red label), and stop reaction at end of 2 1/2 minutes by dispensing once (200 μL) into each antibody coated tube.



Substrate A Substrate B Stop

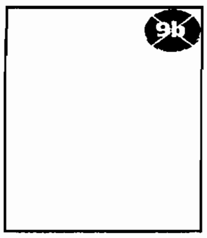
AROCLOR SENSITIVITY

Aroclor	Lowest Detection Level
1248	1.0 ppm
1254	0.5 ppm
1260	0.5 ppm
1242	2.0 ppm
1232	4.0 ppm
1016	4.0 ppm

PHASE 4 ANALYSIS OF RESULTS

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

SELECT STANDARD



9a. Wipe outside of all antibody coated tubes.

9b. Place both Standard tubes in photometer.

9c. Switch tubes until the photometer reading is negative or zero. Record reading.

If reading is greater than - 0.3 in magnitude (reading is less than or lower than - 0.3), results are outside QC limits. Retest the sample(s). (See QC Example)

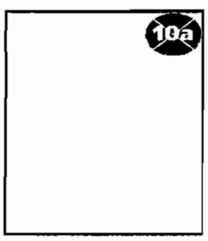
9d. Remove and discard tube in right well. The tube in the left well is the conservative standard.

QC Check Example:

If the photometer reading (with both Standard tubes) is **-0.34 or 0.34**, results are <u>outside</u> the QC limits, and the samples should be retested.

If the photometer reading (with both Standard tubes) is **-0.27 or 0.27**, results are <u>within</u> the QClimits, and testing may proceed.

MEASURE SAMPLE



10a. Place 1 ppm tube in right well of photometer and record reading.

If photometer reading is negative or zero, PCBs are present.

If photometer reading is positive, concentration of PCBs is less than 1 ppm.

10b. Place 10 ppm tube in right well of photometer and record reading.

If photometer reading is negative or zero, PCBs are present.

If photometer reading is positive, concentration of PCBs is less than 10 ppm.

QUALITY CONTROL

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

System Description

Each SDI PCB Ensys® Soil 12 Test Case contains enough material to perform 12 test samples, each at two detection levels.

The SDI PCB EnSys Soil Test is divided into four phases. The instructions and notes should be reviewed before proceeding with each phase.

Hotline Assistance

If you need assistance or are missing necessary Test System materials, call toll free: 1-800-544-8881.

Validation and Warranty Information

Product claims are based on validation studies carried out under controlled conditions. Data has been collected in accordance with valid statistical methods and the product has undergone quality control tests of each manufactured lot.

PCB-free soil and soil containing 1 ppm or greater of PCBs were tested with the SDI EnSys PCB analytical method. The method correctly identified 95% of these samples. A sample that has developed less color than the standard is interpreted as positive. It contains PCBs. A sample that has developed more color than the standard is interpreted as negative. It contains less than 1 ppm PCBs.

SDI does not guarantee that the results with the PCB EnSys Soil 12 Test System will always agree with instrument-based analytical laboratory methods. All analytical methods, both field and laboratory, need to be subject to the appropriate quality control procedures.

How It Works

Standards, Samples, and color-change reagents are added to test tubes, coated with a chemical specific to PCBs. The concentration of PCBs in an unknown **Sample** is determined by comparing its color intensity with that of a **Standard**.

Note: PCB concentration is inversely proportional to color intensity; the lighter the color development of the sample, the higher the concentration of PCBs.

Quality Control

Standard precautions for maintaining quality control:

- Do not use reagents or test tubes from one Test System with reagents or test tubes from another Test System.
- Do not use the Test System after any portion has passed its expiration date.
- Do not attempt the test using more than 12 antibody coated tubes (two of which are Standards) at the same time.
- Do not exceed incubation periods prescribed by the specific steps.
- Always follow the procedure in this user's guide.
- Use EPA Method 8080 or Code of Federal Regulations Title 40, Part 136, Appendix A, Method 680 to confirm results.

Storage and Handling Precautions

- Wear protective gloves and eyewear.
- Store kit at room temperature and out of direct sunlight (less than 80°F).
- Keep aluminized pouch (containing unused antibody coated tubes) sealed when not in use.
- If Stop Solution or liquid from the extraction jar comes into contact with eyes, wash thoroughly with cold water and seek immediate medical attention.
- Standard Solution contains PCBs. Test samples may contain PCBs. Handle with care.

REPEATER PIPET & MECHANICAL PIPET

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

HOW TO OPERATE THE REPEATER PIPET

To Set Or Adjust Volume

To determine the pipetting volume, the dial setting (1-5) is multiplied by the minimum pipetting volume of the tip.

To Assemble Pipet Tip

Slide filling lever down until it stops. Then raise the locking clamp and insert the tip until it clicks into position. Be sure the tip plunger is fully inserted into the barrel before lowering the locking clamp to affix the tip in place.

To Fill Tip

With tip mounted in position on pipet, immerse end of tip into solution. Slide filling lever upward slowly.

To Dispense Sample

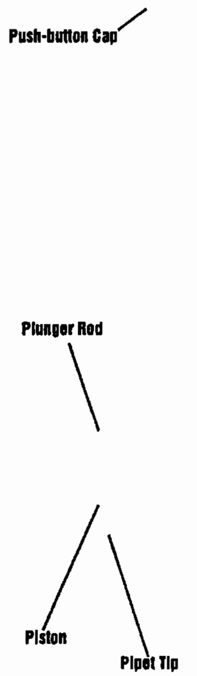
Check the volume selection dial to ensure pipetting volume. Place tip inside test tube so that tip touches the inner wall of tube. Completely depress the pipetting lever.

To Eject Tip

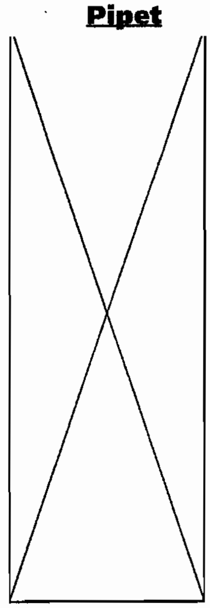
Empty tip of any remaining solution into appropriate container. Raise locking clamp upward, and remove the tip.

For additional information regarding operation and use of repeater, please refer to your Repeater pipet manual.

Mechanical Pipet



Repeater Pipet



HOW TO OPERATE THE MECHANICAL PIPET

To Set Or Adjust Volume

Remove push-button cap and use it to loosen volume lock screw. Turn lower part of push-button to adjust volume up or down. Meter should read "060". Tighten volume lock screw and replace push-button cap.

To Assemble Pipet Tip

Slide larger mounting end of pipet tip onto end of pipet. Holding tip in place, press push-button until plunger rod enters pipet tip. **Ensure no gap exists between piston and plunger rod.**

To Withdraw Sample

With tip mounted in position on pipet, press push-button to first stop and hold it.

Place tip at bottom of liquid sample and slowly release push-button to withdraw measured sample. Ensure that no bubbles exist in liquid portion of sample. If bubbles exist, dispense sample and re-withdraw sample.

To Dispense Sample

Place tip into dispensing vessel (immersing end of the tip if vessel contains liquid) and slowly press push-button to first stop. (Do not push to second stop or tip will eject).

Remove tip from vessel and release push-button.

To Eject Tip

Press push-button to second stop. Tip is ejected.

For additional information regarding operation and use of pipet, please refer to your pipet manual.

ON-SITE QUALITY CONTROL/QUALITY ASSURANCE RECOMMENDATIONS
SDI EnSys® 12 TEST SYSTEM

Please read the following before proceeding with field testing.

PRIOR TO TESTING SAMPLES

Carefully follow the instructions in the User's Guide included with every test kit. This is the key element in obtaining accurate results. In addition, store your unused test kits at room temperature and do not use them past their expiration date (see label on each test kit).

INTERNAL TEST QC

Two standards are analyzed with each sample to provide internal test system quality control. With both standards inserted in the photometer, a valid test is indicated when the magnitude of the displayed number (irrespective of the sign, + or -) is less than the value given in the User's Guide. Test runs resulting in a greater number should be repeated to ensure valid conclusions.

QA/QC

The validity of field test results can be substantially enhanced by employing a modest, but effective QA/QC plan. SDI recommends that you structure your QA/QC plan with the elements detailed below. These have been developed based on the data quality principles established by the U.S. Environmental Protection Agency.

A. **Sample Documentation**
   1. Location, depth
   2. Time and date of collection and field analysis

B. **Field analysis documentation** - provide raw data, calibration, any calculations, and final results of fieldanalysis for all samples screened (including QC samples)

C. **Method calibration** - this is an integral part of SDI's EnSys immunoassay tests; a duplicate calibration is performed for each set of samples tested (see the instructions in the User's Guide)

D. **Method blank** - analyze methanol from the extraction jar.

E. **Site-specific matrix background field analysis** - collect and field analyze uncontaminated sample from site matrix to document matrix effect

F. **Duplicate sample field analysis** - field analyze duplicate sample to document method repeatability; at least one of every 20 samples should be analyzed in duplicate

G. **Confirmation of field analysis** - provide confirmation of the quantitation of the analyte via an EPA-approved method different from the field method on at least 10% of the samples; choose at least two representative samples testing above the action level; provide chain of custody and documentation such as gas chromatograms, mass spectra, etc.

H. **Performance evaluation sample field analysis (optional, but strongly recommended)** - field analyze performance evaluation sample daily to document method/operator performance

I. **Matrix spike field analysis (optional)** - field analyze matrix spike to document matrix effect on analyte measurement

FURTHER QUESTIONS?

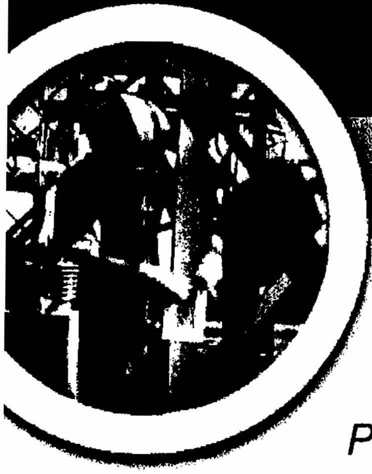
SDI's technical support personnel are always prepared to discuss your quality needs to help you meet your data quality objectives. (1-800-544-8881)

Data for SDI PCB EnSys® 12T Soil Test

Operator: ---------------------------------- Date: ------------- Location: --

Sample ID	ΔOD	OD sample	Interpretation	OD sample	Interpretation	Comments
	Standards	_____ ppm		_____ ppm		

Remediation, Assessment & Industrial Testing



EnSys

EnSys PCB Soil & Wipe Test System

Features

- provides semi-quantitative or qualitative results at specified calibrator (action) levels
- rapid field or lab testing, with results in 30 minutes
- test up to 12 samples at one time
- two detection levels of your choice are provided with each sample
- high level of accuracy
- coated tube immunoassay
- EPA SW-846 Method #4020

SDI

Test Result Type

- Semi-quantitative or qualitative.
- knowledge of specific aroclor(s) present will aid in accuracy.

Samples per Kit

- 12 soil samples at two detection levels each
- each sample can be tested one at a time or in batches of 2 to 10 samples

Assay Range

- **Soil:** 0.5 ppm to 500 ppm w/ dilutions
- **Wipes:** 5.0 ug/100cm^2 to 5000 ug/100cm^2 w/ dilutions

Sample Preparation

- Soil samples require prior extraction using the SDI Sample Extraction Kit (sold separately).
- The Sample Extraction Kit provides materials for 12 soil sample extractions with methanol.

Sampling Time

- "Dirt-to-Data" in approximately 30 minutes

EnSys

Strategic Diagnostics Inc.

111 Pencader Drive
Newark, DE USA 19702

302.456.6789 *tele*
800.544.8881 *tele*
302.456.6782 *fax*

www.sdix.com

Basic Test Procedure

- Transfer soil or wipe to extraction jar.
- Cap and shake for 1 minute.
- Filter extracted sample.
- Pipette and dilute samples with dilution ampule.
- Transfer 1 ml of buffer to glass buffer tubes.
- Pipette and transfer sample to buffer tubes.
- Fit Antibody coated tubes on buffer tubes; invert to mix; return to Antibody coated tube.
- Incubate 10 minutes.
- Connect Antibody coated and Conjugate tubes; invert and mix; return to Antibody coated tube.
- Incubate 5 minutes.
- Wash Antibody coated tubes vigorously 4 times.
- Using Repeater Pipet at Setting 2 and 5 mL tip, transfer 200 µL Substrate A to each tube.
- Add 200 µL Substrate B to each tube; mix.
- Add 200 µL STOP to each tube.
- Read tubes in photometer. Record data.

Specificity

Minimum Aroclor detection levels for the EnSys PCB Soil test are as follows:

Aroclor	1260	1254	1248	1242	1232	1016
(ppm)	0.5	0.5	1.0	2.0	4.0	4.0

Minimum Aroclor detection levels for the EnSys PCB Wipe test are as follows:

Aroclor	1260	1254	1248	1242	1232	1016
(ug/100cm2)	5.0	5.0	10.0	20.0	40.0	40.0

Test Kit Components

- 48 Antibody Coated tubes
- 48 Glass buffer tubes
- Substrate and stop solution reagents
- PCB standard
- Pipette tips

Storage & Precautions

- Shelf life is typically one year from date of manufacture, with specific kit expiration date information provided on product packaging.
- Reagents must be stored at 39° to 46°F (4° to 8°C) when not in use.
- Storage at ambient temperature 64° to 81°F (18° to 27°C) is acceptable for day of use.
- Kits must be brought to 64° to 81°F (18° to 27°C) before use.
- Do not expose color solution to direct sunlight.

Other Required Materials

	SDI Part #
PCB Ensys 12T Accessory Kit	6050400
PCB Ensys 12T Accessory Kit rental (includes all equipment required to operate test and interpret results)	6997020

Tap or laboratory grade water for test tube rinsing
Absorbent paper
Liquid waste container
Disposable gloves
Marking pen

Other Recommended Materials

- Liquid and solid waste containers
- Calculator

Ordering Information

	SDI Part #
PCB EnSys 12T Soil Test Kit	7020301
PCB Soil Sample Extraction Kit	7020301EA
PCB EnSys 12T Wipe Test Kit	7021301
PCB Wipe Sample Extraction Kit	7020301WA

STRATEGIC DIAGNOSTICS INC.

RaPID Assay® PCB Test Kit
A00133/A00134

Intended Use

The RaPID Assay® PCB Test Kit can be used as a quantitative, semi-quantitative or qualitative enzyme immunoassay (EIA) for the analysis of PCB (polychlorinated biphenyl) in water (groundwater, surface water, well water). For applications in other matrices please contact our Technical Service department or refer to the soil application procedure provided. The RaPID Assay® PCB Test Kit allows reliable and rapid screening for PCB (measured and reported as Aroclor 1254), with quantitation between 0.5 and 10 ppb (as Aroclor 1254), in water. The minimum detection level of the kit is 0.2 ppb (as Aroclor 1254.)

Test Principles

The PCB RaPID Assay® kit applies the principles of enzyme linked immunosorbent assay (ELISA) to the determination of PCB and related compounds. The sample to be tested is added, along with an enzyme conjugate, to a disposable test tube, followed by paramagnetic particles with antibodies specific to PCB attached. Both PCB (which may be in the sample) and the enzyme labeled PCB (the enzyme conjugate) compete for antibody binding sites on the magnetic particles. At the end of an incubation period, a magnetic field is applied to hold the paramagnetic particles (with PCB and labeled PCB analog bound to the antibodies on the particles, in proportion to their original concentration) in the tube and allow the unbound reagents to be decanted. After decanting, the particles are washed with Washing Solution.

The presence of PCB is detected by adding the enzyme substrate (hydrogen peroxide) and the chromogen (3,3',5,5' - tetramethylbenzidine). The enzyme labeled PCB analog bound to the PCB antibody catalyzes the conversion of the substrate/chromogen mixture to a colored product. After an incubation period, the reaction is stopped and stabilized by the addition of acid. Since the labeled PCB (conjugate) was in competition with the unlabeled PCB (sample) for the antibody sites, the color developed is inversely proportional to the concentration of PCB in the sample.

NOTE: Color development is inversely proportional to the PCB concentration.

Darker color = lower concentration
Lighter color = higher concentration

The determination of the PCB level in an unknown sample is interpreted relative to the standard curve generated from kit standards after reading with a spectrophotometer.

Performance Characteristics

The PCB RaPID Assay® will detect different PCB Aroclors to different degrees. Refer to the table below for data on several of these. The PCB RaPID Assay® kit provides screening results. As with any analytical technique (GC, HPLC, etc.) positive results requiring some action should be confirmed by an alternative method.

The PCB RaPID Assay® immunoassay test does not differentiate between PCB and other related compounds. The table below shows compounds at the method detection limit (MDL) which is the lowest concentration of the compound, in water, that can be picked up in the assay. The limit of quantitation (LOQ) is an approximate concentration, in water, required to yield a positive result at the lowest standard. **This is the lowest concentration of the compound that can be quantified in the assay.** The IC50 is the concentration required to, inhibit one half of the color produced by the negative control. It is also used to calculate cross-reactivity values to similar compounds.

Compound	MDL (ppb)	LOQ (ppb)	IC50 (ppb)
Aroclor 1254	0.20	0.50	3.6
Aroclor 1260	0.20	0.32	2.3
Aroclor 1248	0.22	0.59	4.22
Aroclor 1242	0.34	1.22	8.8
Aroclor 1262	0.36	0.66	4.74
Aroclor 1232	0.84	2.61	18.76
Aroclor 1268	0.92	3.03	21.80
Aroclor 1016	0.94	3.56	25.60
Aroclor 1221	13.54	22.58	162.60

*The following compounds demonstrated no reactivity in the PCB RaPID Assay® test kit at concentrations up to 10,000 ppb: Biphenyl, 2,5-Dichlorophenol, 2,3,5-Trichlorophenol, Di-n-octyl-phthalate.

The presence of the following substances up to 250 ppm were found to have no significant effect on PCB RaPID Assay® results: copper, nickel, zinc, mercury, manganese, phosphate, sulfate, sulfite, magnesium, calcium, nitrate and thiosulfate. Humic acid up to 25 ppm and iron to 100 ppm were found to have no significant effect. In addition, sodium chloride concentrations up to 1.0 M showed no effect on results.

Precautions

- Training is strongly recommended prior to using the RaPID Assay® test system. Contact Strategic Diagnostics for additional information.
- Treat PCB, solutions that contain PCB, and potentially contaminated samples as hazardous materials.
- Use gloves, proper protective clothing, and methods to contain and handle hazardous material where appropriate.
- Reagents must be added in a consistent manner to the entire rack. A consistent technique is the key to optimal performance. Be sure to treat each tube in an identical manner.
- Water samples should be at a neutral pH prior to analysis. Samples containing gross particulate should be filtered (e.g. 0.2 um Anotop™ 25 Plus, Whatman, Inc.) to remove particles.
- Store all test kit components at 2°C to 8°C (36°F to 46°F). Storage at ambient temperature (18°C to 27°C or 64°F to 81°F) on the day of use is acceptable. *Test tubes require no special storage and may be stored separately to conserve refrigerator space.*
- Allow all reagents to reach ambient temperature (18°C to 27°C or 64°F to 81°F) before beginning the test. This typically requires at least 1 hour to warm from recommended storage conditions.
- Do not freeze test kit components or expose them to temperatures above 100°F (39°C).
- Do not use test kit components after the expiration date.
- Do not use reagents or test tubes from one test kit with reagents or test tubes from a different test kit.
- Do not mix reagents from kits of different lot numbers.
- Use approved methodologies to confirm any positive results.
- Do not under any circumstances attempt to disassemble the base of the magnetic rack. Magnets will be violently attracted to each other.
- Adequate sample number and distribution are the responsibility of the analyst.
- The photometer provided in the accessory kit requires electricity and comes with a 110V adapter. Adapters for 220V are available. Do not attempt to operate with a car adaptor.
- Do not expose color solution to direct sunlight.
- Do not dilute or adulterate test reagents or use samples not called for in the test procedure; this may give inaccurate results.
- Tightly recap the standard vials when not in use to prevent evaporative loss.

Materials Provided

- Antibody Coupled Paramagnetic Particles in buffered saline containing preservative and stabilizers.

  30 test kit: one 20 mL vial
  100 test kit: one 65 mL vial
- Enzyme Conjugate.

  30 test kit: one 10 mL vial
  100 test kit: one 35 mL vial
- Standards

  Three concentrations (0.25, 1.0 and 5.0 ppb) of PCB standards (as Aroclor 1254) in buffered saline containing preservative and stabilizers are supplied. Each vial contains 4 mL.
- Control

  A concentration (approximately 3 ppb) of PCB (as Aroclor 1254) in buffered saline containing preservative and stabilizers. A 4 mL volume is supplied in one vial.
- Diluent/Zero Standard

  Buffered saline containing preservative and stabilizers without any detectable PCB.

  30 test kit: one 10 mL vial
  100 test kit: one 35 mL vial
- Color Solution containing hydrogen peroxide and 3,3',5,5'-tetramethylbenzidine in an organic base.

30 test kit: one 20 mL vial
100 test kit: one 65 mL vial

- Stop Solution containing a solution of 2M sulfuric acid.

  30 test kit: one 20 mL vial
  100 test kit: one 60 mL vial

- Washing Solution containing preserved deionized water.

  30 test kit: one 70 mL vial
  100 test kit: one 250 mL vial

- Polystyrene test tubes

  30 test kit: one 36 tube box
  100 test kit: three 36 tube boxes

- User's Guide

Materials Required and Ordered Separately

See "Ordering Information" for the appropriate catalogue numbers.

Rapid Assay® Accessory Kit

Accessory equipment may be rented or purchased from Strategic Diagnostics. See "Ordering Information" for the appropriate catalogue numbers.

The accessory kit contains the following items:

- Adjustable Volume Pipet
- Eppendorf™ Repeater® Pipettor
- Electronic timer
- Portable balance capable of weighing 10 g (for soil samples)
- Vortex mixer
- Magnetic separation rack
- RPA-I RaPID Analyzer (or equivalent spectrophotometer capable of reading 450 nm in a 1 mL sample size).

Other Items

- 12.5 mL Combitips® for the Repeater pipettor - for 0.25 mL to 1.25 mL dispensing volumes (5)
- Pipet tips for adjustable volume pipet (100-1000 uL)

NOTE: Order replacement Combitips® and pipet tips separately. See the "Ordering Information" section.

Materials Required but Not Provided

- Methanol (HPLC grade or equivalent) – for water analysis
- Protective clothing (e.g., latex gloves)
- Absorbent paper for blotting test tubes
- Liquid and solid waste containers
- Marking pen
- Instructional video (optional)

Suggestions for Pipettor Use

- Practice using both pipettes (adjustable volume and Repeater pipettor) with water and extra tips before you analyze your samples.
- Use a new tip each time you use the Repeater pipettor to pipette a different reagent to avoid reagent cross-contamination. Tips can be rinsed thoroughly, dried completely and reused. By using the same tip to dispense the same reagent each time you can avoid cross contamination.

NOTE: **Repeator tips should be changed periodically (after ~10 uses) since precision deteriorates with use.**

- Draw the desired reagent volume into the Repeater pipettor and dispense one portion of the reagent back into the container to properly engage the ratchet mechanism. If you do not do this, the first volume delivered may be inaccurate.
- To add reagents using the Repeater pipettor, pipette down the side of the test tube just below the rim.
- When adding samples and standard using the positive displacement pipettor, always pipette into the bottom of the tube without touching the sides or bottom of the tube.
- Use a new adjustable volume pipet tip each time you pipette a new unknown.

Assay Procedure

Prior to performing your first Rapid Assay®, please take time to read the package inserts in their entirety and review the videotape if available. **On site training is strongly recommended for new users of this test system.** Please contact your account manager for further information. This procedure is designed for quantitative analysis. For running the kit semi-quantitatively or qualitatively, please contact Technical Support.

Collect/Store the Sample

The following steps explain how to properly collect and store your samples.

1. Water samples should be collected in glass vessels with teflon cap liners). **Immediately upon collection, water samples should be diluted with an equal volume (1:1) of methanol (HPLC grade) to prevent adsorptive losses to the glass containers.** This is a 2x dilution, which must be accounted for when interpreting results. See "Results Interpretation", Section 3a for further details. Use this diluted sample as "sample" in "Perform the Test".

NOTE: This 2x dilution is <u>not</u> required for soil samples.

2. Samples should be collected in appropriately sized and labeled containers.
3. If testing soil samples, follow the SDI Sample Extraction Kit User's Guide or the appropriate technical bulletin to properly collect and store your sample.
4. Samples should be tested as soon as possible after collection. If this is not possible, storage at 4°C (39°F) is recommended to minimize evaporative losses.

Set Up

1. Remove kits from refrigerator. All reagents must be allowed to come to room temperature prior to analysis. Remove reagents from packaging and place at room temperature <u>at least</u> 1 hour prior to testing.
2. Turn on the RPA-1 or other spectrophotometer. The RPA-1 should be warmed up for at least 30 minutes prior to the run.
3. Label five 12.5 mL Combitips "Conjugate", "Particles", "Wash", "Color" and "Stop". In addition, add the name of the compound you are testing for to each Combitip.
4. Remove nine clean blank test tubes for standards and control and one test tube for each sample (if testing in singlicate). Label the test tubes according to contents as follows.

Tube #	Contents
1	Negative control (replicate 1)
2	Negative control (replicate 2)
3	Standard 1 (replicate 1)
4	Standard 1 (replicate 2)
5	Standard 2 (replicate 1)
6	Standard 2 (replicate 2)
7	Standard 3 (replicate 1)
8	Standard 3 (replicate 2)
9	Control
10	Sample 1
11	Etc.

***Label at top of tubes to avoid interference with reading of tubes in photometer**

Sample Extraction, Filtration and Dilution

Filtration may be necessary to remove gross particulate from the water sample. If testing samples at levels higher than standard kit level is desired, contact SDI for special instructions. Water samples should be diluted 1:1 in methanol as described in "Collect/Store the Sample". Please follow the instructions from the SDI Sample Extraction Kit to prepare and dilute the soil extract prior to running the assay.

Perform the Test

1. Separate the upper rack from the magnetic base. Place labeled test tubes into the rack.
2. Add **200 uL** of standards, control or samples to the appropriate tubes using the adjustable volume pipet with the dial set on 0200. The negative control, standards and control must be run with each batch of samples.

NOTE: Sample should be added to the bottom of the tube by inserting the pipet tip into the tube without touching the sides or the bottom of the tube. Take care not to contact sample with pipette tip once dispensed into bottom of the tube.

3. Using the Repeater Pipettor with the "Conjugate" tip attached and the dial set on "1", add **250 uL** of Enzyme conjugate down the **inside wall** of each tube. (Aim the pipet tip ¼" to ½" below the tube rim or tube wall; deliver liquid gently to avoid splashback.)
4. Thoroughly mix the magnetic particles by swirling (avoid vigorous shaking) and attach the "Particles" tip to the Repeater Pipettor. With the dial set on "2" add **500 uL** of magnetic particles to each tube, aiming down the side of the tube as described above. Vortex, mixing each tube 1 to 2 seconds at low speed to minimize foaming. Pipetting of magnetic particles should be kept to 2 minutes or less.
5. Incubate 15 minutes at room temperature.
6. After the incubation, combine the upper rack with the magnetic base and press all tubes into the base; allow 2 minutes for the particles to separate.

7. With the upper rack and magnetic base combined, use a smooth motion to invert the combined rack assembly over a sink and pour out the tube contents.

NOTE: **If the rack assembly inadvertently comes apart when lifting to pour out tube contents, recombine and wait an additional 2 minutes to allow particles to separate.**

8. **Keep the rack inverted** and gently blot the test tube rims on several layers of paper towels. It is important to remove as much liquid as possible but **do not bang** the rack or you may dislodge the magnetic particles and affect the results.

9. Set the Repeater Pipettor dial to "4" and put on the tip labeled "Wash". Add **1 mL** of Washing Solution down the inside wall of each tube by using the technique described earlier. Vortex tubes for 1-2 seconds. Wait **2 minutes** and pour out the tube contents as described previously. **Repeat this step one more time.**

NOTE: The number of washes and wash volume are important in ensuring accurate results.

10. Remove the upper rack (with its tubes) from the magnetic base. With the "Color" tip attached to the Repeater Pipet and the dial set to "2" add **500 uL** of Color Reagent down the inside wall of each tube as described previously. Vortex 1 to 2 seconds (at low speed).

11. Incubate 20 minutes at room temperature. During this period, add approximately 1 mL of Washing solution to a clean tube for use as an instrument blank for "Results Interpretation".

12. After the incubation, position the Repeater pipettor at Setting "2" and use the "Stop" tip to add 500 uL of Stop solution to all test tubes.

13. Proceed with results interpretation.

WARNING: **Stop solution contains 2M sulfuric acid. Handle carefully.**

Results Interpretation

1. After addition of Stop Solution to the test tubes, results should be read within 15 minutes.

2. Wipe the outside of all antibody coated tubes prior to photometric analysis to remove fingerprints and smudges.

Photometric Interpretation Using the RPA-I

1. The RPA-I photometer (provided in the Rapid Assay® Accessory kit) can be used to calculate and store calibration curves. It is preprogrammed with various RaPID Assay® protocols. For the PCB RaPID Assay® test kit, parameter settings are as follows:

Data Reduct	:	Lin. Regression
Xformation	:	Ln/LogitB
Read Mode	:	Absorbance
Wavelength	:	450 nm
Units	:	PPB
# Rgt Blk	:	0

Calibrators:

# of Cals	:	4
# of Reps	:	2

Concentrations:

#1:	0.00 ppb
#2:	0.25 ppb
#3:	1.00 ppb
#4:	5.00 ppb

Range	:	0.10 – 5.00
Correlation	:	0.990
Rep. %CV	:	10%

NOTE: Prior to analysis the RPA-I User's Manual should be thoroughly reviewed for more detailed operation instructions.

2. Follow the instrument prompts to read the absorbance of all tubes:

Instrument Display	Operator Response
SELECT COMMAND	Press RUN
RUN PROTOCOL	Scroll using the YES [] or NO [] keys until the desired protocol appears. Then press ENTER
SPL. REPLICATES (1-5)	Press 1 (for analysis of samples in singlicate.) Press ENTER
BLANK TUBE,	Insert blank tube

INSERT TUBE, EVALUATING TUBE, REMOVE TUBE (Beep)	containing 1mL wash solution. Remove tube
CAL #1, REP. #1, INSERT TUBE, EVALUATING TUBE, REMOVE TUBE (Beep)	Insert Tube #1 Remove tube

Follow prompts to read tubes.

NOTE: Tube order is important. The RPA-I expects to see the standards in ascending order, in duplicate, starting with the negative control.

Following evaluation of all standards, the instrument will display:

PRINTING DATA,	Data will print
PRINTING CURVE	Curve will print only if programmed to print (See RPA1 User's Manual).
CTRL #1 REP #1, INSERT TUBE, EVALUATING TUBE, REMOVE TUBE (Beep)	Insert Control Tube Remove Tube
EDIT CALIBRATORS YES/NO	Press NO (if editing is necessary press YES and refer to the RPA1 User's Manual).
SPL #1 REP#1 INSERT TUBE EVALUATING TUBE REMOVE TUBE (Beep)	Insert first sample tube Remove tube

Continue to follow prompts. After all samples have been read, press STOP.

Expected Results:

- **%CV (coefficient of variation) between standard duplicates of 10% or less.**
- **Absorbance reading for the 0 ppb standard should be between 0.8 and 2.0 for all assays.**
- **Correlation (r) of 0.990 or greater for all assays.**
- **Kit control within range specified on vial.**
- **Absorbance of negative control and standards should be as follows:**

  Negative Control > Std. 1 > Std. 2 > Std. 3.

3. Concentrations will be indicated for all samples on the RPA-I printout.

   a) The concentration, as indicated on the printout, is multiplied by the appropriate dilution factor (if applicable) introduced in the procedure. The quantitation range of the kit is also multiplied by this factor.

EXAMPLE: Water samples were diluted 2-fold with methanol upon collection (see "Collect/Store the Sample" in this User's Guide). As a result, the concentrations listed on the printout should be multiplied by 2 to determine the sample concentration. The standard concentrations are also multiplied by 2 to give a quantitation range in water for this test kit of 0.5 to 10 ppb.

   b) Samples with an "nd" and no concentration listed have an absorbance greater than the negative control; therefore, no concentration can be computed for these samples. Results must be reported as < 0.5 ppb (or Standard 1 multiplied by the dilution factor.)

   c) Samples with an "nd" next to a listed concentration have an estimated concentration below the minimum detection level of the test kit. Results must be reported as <0.5 ppb (or Standard 1 multiplied by the dilution factor.)

   NOTE: Any samples with concentrations determined to be lower than Standard 1 (the limit of quantitation) must be reported as < 0.5 (or Standard 1 multiplied by the dilution factor.) Quantitation is not possible below this standard as this is outside the linear range of the assay.

   d) Similarly, samples with a "hi" next to a listed concentration have an estimated concentration higher than Standard 3 and must be reported as >10 ppb (or Standard 3 multiplied by the dilution factor.)

NOTE: **In order to determine the concentration of samples with concentrations greater than Standard 3, they must be subjected to repeat testing using a diluted sample. A ten-fold or greater dilution of the sample is recommended with an appropriate amount of PCB diluent. This additional dilution must then be taken into account when calculating the concentration. Please contact technical support for assistance in performing dilutions.**

Photometric Interpretation Using Other Photometers

Other photometers may also be used to interpret results obtained from the RPA-I photometer. It is important that the photometer be able to read absorbance at 450nm and that the instrument can read at a 1 mL fill volume. Absorbances obtained from other spectrophotometers (reading at 450 nm) may be used to manually calculate sample concentrations as outlined below.

1. Calculate the mean absorbance for each of the three standards and the negative control.

2. Determine the standard deviation and %CV (coefficient of variation) of each standard and ensure %CV is less than 10% for each.

3. Calculate the %B/Bo for each standard by dividing the mean absorbance value for the standard by the mean absorbance value for the negative control and multiplying the results by 100.

4. Construct a standard curve by plotting the %B/Bo for each standard on the vertical logit (y) axis versus the corresponding analyte concentration on the horizontal logarithmic (x) axis on the graph paper provided in the test kit. **Graph papers are specific for each method. Use only the graph paper supplied with each kit.**

5. Draw the best straight line through all points. Using the %B/Bo of the sample, the concentration can be interpolated from the standard curve.

6. Multiply results by the appropriate dilution factor (if applicable) introduced in the procedure. For example, if the sample was diluted 10-fold to increase the detection levels of the kit then the results must be multiplied by 10. This dilution also changes the range of the assay (standards) by the same factor.

NOTE: Do not forget to account for the 2x dilution introduced in the "Collect/Store the Sample" procedure for water samples.

Limitations of the Procedure

The Rapid Assay® PCB Test Kit is a screening test only. Sampling error may significantly affect testing reliability. Adequate sample number and distribution are the responsibility of the analyst.

Ordering Information

Description	Catalogue Number
Rapid Assay® PCB Kit	A00133/A00134
Rapid Assay® Accessory Kit**	6050100
Adjustable Volume Pipet Tips (100-1000 uL)	A00013
12.5 mL Combitip for Repeating Pipette (1 each)	A00009
PCB Diluent	A00136
PCB Soil Proficiency Sample	A00175
Rapid Assay® Accessory Kit Rental	6997010
** To obtain part numbers and pricing for individual items in the Accessory Kit contact SDI at the number below.	

Ordering/Technical Assistance

Should you have any questions regarding this procedure prior to analysis contact Technical Service to avoid costly mistakes.

To Place an Order or Receive Technical Assistance, please call Strategic Diagnostics Inc. at:

Call toll-free **800-544-8881`**

Or 302-456-6789 Phone
302-456-6782 Fax
Web site: www.sdix.com
E-mail: techservice@sdix.com

General Limited Warranty

SDI's products are manufactured under strict quality control guidelines and are warranted to be free from defects in materials and workmanship. New instruments and related non-expendable items are warranted for one year from date of shipment against defective materials or workmanship under normal use and service.
Warranty obligation is limited to repair or replacement of the defective product or to refund of the purchase price, at the discretion of SDI. Other warranties, express or implied, are disclaimed. SDI's liability under any warranty claim shall not exceed the refund of the purchase price paid by the customer. Under no circumstances shall SDI be liable for special, indirect or consequential damages.

Safety

To receive an MSDS for this product, visit our web site at www.sdix.com.

Z00245.1, Rev 4/4/00

Operation of the Repeater Pipet

To Set or Adjust Volume

To determine the pipetting volume, the dial setting (1-5) is multiplied by the minimum pipetting volume of the tip (indicated on the side of the Combitip, e.g. 1-100 uL.)

To Assemble Pipet Tip

Slide filling lever down until it stops. Then raise the locking clamp and insert the tip until it clicks into position. Be sure the tip plunger is fully inserted into the barrel before lowering the locking clamp to affix the tip in place.

To Fill Tip

With tip mounted in position on pipet, immerse end of tip into solution. Slide filling lever upward slowly. Combitip will fill with liquid.

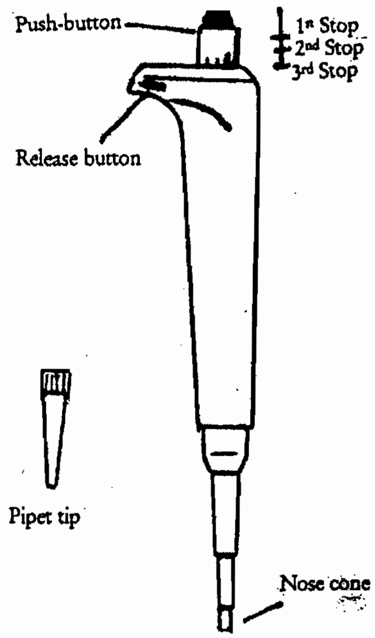
To Dispense Sample

Check the volume selection dial to ensure pipetting volume. Place tip inside test tube so that tip touches the inner wall of tube. Completely depress the pipetting lever to deliver sample. NOTE: Dispense one portion of reagent back into the container to engage the ratchet mechanism and ensure accuracy.

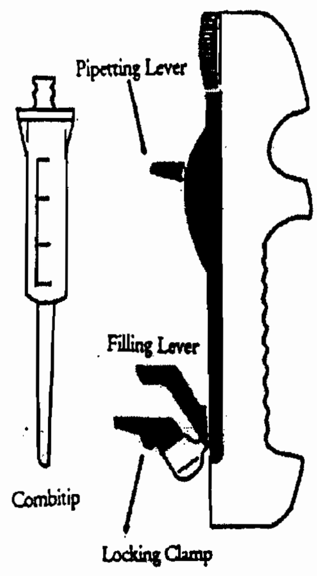
To Eject Tip

Empty tip of any remaining solution into appropriate container by pushing filling lever down. Raise locking clamp upward, and remove the Combitip.

Adjustable Volume Pipet



Repeater Pipet



Operation of the Adjustable Volume Pipet

To Set or Adjust Volume

Press release button on side of pipette and turn the push-button to adjust volume up or down. Volume setting is displayed on top of pipet. See kit instructions for appropriate setting. Pipet will accurately dispense volumes between 100 and 1000 uL.

To Assemble Pipet Tip

Gently push nose cone of pipet firmly into a pipet tip contained in the pipet tip rack.

To Withdraw Sample

Keep pipet almost vertical. With tip mounted in position on pipet, press push-button to 1st stop and hold it. Place tip at bottom of liquid sample and slowly release push-button to withdraw measured sample. Ensure that no air bubbles exist in the pipette tip. If bubbles exist, dispense sample and re-withdraw. Slide tip out along the inside of the vessel.

To Dispense Sample

Wipe any liquid from outside of tip taking care not to touch orifice. Place tip into tube, almost to the bottom, and slowly press push-button to 2nd stop. Hold push-button at 2nd stop when removing tip from tube.

To Eject Tip

Press push-button to 3rd stop. Tip is ejected.

APPENDIX B

Instruction Manual:

personalDataRAM

*personal*DataRAM

INSTRUCTION MANUAL

October 1997

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USA

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Tel (781) 275-1919

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www.mieinc.com

CONTENTS

ONE YEAR LIMITED WARRANTY

MIE warrants to the original Purchaser that the apparatus to be delivered hereunder will be of the kind designated or specified and free of defects in workmanship or material. MIE makes no other express warranty, and disclaims any implied warranty of merchantability or fitness for purpose.

If the apparatus fails to conform to the above warranty, and notice is received by MIE from Purchaser within one year from the date of shipment, MIE will, at its option, either repair the defective part or parts or make available a repaired or replacement part. This warranty extends to all parts and labor involved in the required repair to the extent that said repair was not caused by negligence in operation of the apparatus by the Purchaser. MIE will perform the repair at its plant with all shipping and insurance costs paid by the Purchaser or, upon mutual consent of the parties, at a site designated by the Purchaser except, in the latter circumstances, the Purchaser will be responsible to reimburse MIE for all costs associated with travel, per diem and travel time of those MIE individual(s) deemed appropriate to effectuate the repair.

Repair or replacement of the apparatus in the manner and for the time period specified above, is the Purchaser's exclusive remedy and will satisfy all liabilities of MIE to Purchaser arising out of the supply or use of the apparatus, whether based on contract, warranty, negligence or otherwise. In no event will MIE be liable for any incidental or consequential loss or damage resulting from any failure of the apparatus to conform to the contract of sale.

1.0 GENERAL DESCRIPTION

The MIE *personal*DataRAM (for Personal Data-logging Real-time Aerosol Monitor), model *p*DR-1000, is a technologically advanced instrument designed to measure the concentration of airborne particulate matter (liquid or solid), providing direct and continuous readout as well as electronic recording of the information.

The *personal*DataRAM is the result of many years of field experience acquired with thousands of units of its well known predecessor, the MIE MINIRAM, and embodies many technological advances made possible by the latest electronic hardware and software. The *personal*DataRAM is also a worthy miniaturized companion to the MIE DataRAM, a recognized paragon of portable aerosol monitors.

The *personal*DataRAM is a high sensitivity nephelometric (i.e. photometric) monitor whose light scattering sensing configuration has been optimized for the measurement of the respirable fraction of airborne dust, smoke, fumes and mists in industrial and other indoor environments.

The *personal*DataRAM is an ultra-compact, rugged and totally self-contained instrument designed for hand-held, belt-worn, as well as unattended operation. It is powered either by its internal replaceable battery, or by an optional attachable rechargeable battery pack, or by an AC supply (included as standard accessory).

The *personal*DataRAM samples the air passively (i.e. without a pump); air accesses freely the sensing chamber by convection, diffusion, and adventitious air motion.

Zeroing is accomplished by means of a hand-inflatable "zero air" pouch provided with each monitor. In addition, the instrument automatically checks agreement with its original factory calibration by checking its optical background during the zeroing sequence.

The *personal*DataRAM covers a wide measurement range: from 0.001 mg/m^3 (1 $\mu g/m^3$) to 400 mg/m^3, a 400,000-fold span, corresponding to very clean air up to extremely high particle levels.

In addition to the auto-ranging real-time concentration readout, the *personal*DataRAM offers the user a wide range of information by scrolling its two-line LCD screen, such as run start time and date, time averaged concentration, elapsed run time, maximum and STEL values with times of occurrence, etc.

2.0 SPECIFICATIONS

- Concentration measurement range (auto-ranging)[1]: 0.001 to 400 mg/m^3
- Scattering coefficient range: 1.5 x 10^{-6} to 0.6 m^{-1} (approx.) @ λ =880 nm
- Precision/repeatability over 30 days (2-sigma)[2]:
  ± 2% of reading or ±0.005 mg/m^3, whichever is larger, for 1-sec. averaging time
  ±0.5% of reading or ±0.0015 mg/m^3, whichever is larger, for 10-sec. averaging time
  ±0.2% of reading or ±0.0005 mg/m^3, whichever is larger, for 60-sec. averaging time
- Accuracy[1]: ±5% of reading ±precision
- Resolution: 0.1% of reading or 0.001 mg/m^3, whichever is larger
- Particle size range of maximum response: 0.1 to 10 μm
- Concentration display updating interval: 1 second
- Concentration display averaging time[3]: 1 to 60 seconds
- Alarm level adjustment range[3]: selectable over entire measurement range
- Alarm averaging time[3]: real-time (1 to 60 seconds), or STEL (15 minutes)
- Datalogging averaging periods[3]: 1 second to 4 hours
- Total number of data points that can be logged in memory: 13,391
- Number of data tags (data sets): 99 (maximum)
- Logged data:
  ¤ Each data point: average concentration, time/date, and data point number
  ¤ Run summary: overall average and maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date of occurrence, averaging (logging) period, calibration factor, and tag number.
- Elapsed time range: 0 to 100 hours (resets to 0 after 100 hours)
- Time keeping and data retention: › 10 years
- Readout display: LCD 16 characters (4 mm height) x 2 lines

3.0 USER GUIDELINES

3.1 Handling Instructions

The *personal*DataRAM is a sophisticated optical/electronic instrument and should be handled accordingly. Although the *personal*DataRAM is very rugged, it should not be subjected to excessive shock, vibration, temperature or humidity. As a practical guideline, the *personal*DataRAM should be handled with the same care as a portable CD player.

If the *personal*DataRAM has been exposed to low temperatures (e.g. in the trunk of a car during winter) for more than a few minutes, care should be taken to allow the instrument to return near room temperature before operating it indoors. This is advisable because water vapor may condense on the interior surfaces of the *personal*DataRAM causing temporary malfunction or erroneous readings. Once the instrument warms up to near room temperature, such condensation will have evaporated. If the *personal*DataRAM becomes wet (e.g. due to exposure to water sprays, rain, etc.), allow the unit to dry before operating.

Whenever the *personal*DataRAM is shipped care should be taken in placing it in its carrying case and repackaging it with the original cardboard box with the factory provided padding.

3.2 Safety Instructions

- Read and understand all instructions in this manual.
- Do not attempt to disassemble the instrument. If maintenance is required, return unit to the factory for qualified service.
- The *personal*DataRAM should be operated only from the type of power sources described in this manual.
- When replacing the internal 9-V battery, follow the instructions provided on the back panel of the unit.
- Shut off *personal*DataRAM and any external devices (e.g. PC) before connecting or disconnecting them.
- Shut off *personal*DataRAM before replacing the internal battery, or when plugging in or disconnecting the AC power supply or the optional rechargeable battery pack.

3.3 Positioning and Handling During Operation

The *personal*DataRAM can be operated in any position or orientation.

Exposure to high intensity fluctuating light of the interior of the sensing chamber, through the front and back slotted air openings (see Section 5.5), should

4.0 ACCESSORIES

4.1 Standard Accessories

The *personal*DataRAM is provided to the user with the following standard accessories:

- Soft-shell carrying case (MIE model *p*DR-CC-1)
- Digital communications cable (MIE model *p*DR-DCC)
- Communications software disk (MIE model *p*DR-COM)
- Z-Pouch zeroing kit (MIE model *p*DR-ZP)
- Belt clip kit (MIE model *p*DR-CA)
- AC power supply (and charger for optional MIE model *p*DR-BP) (MIE model *p*DR-AC)
- Instruction manual

4.2 Optional Accessories

The following optional accessories are available from MIE for use with the *personal*DataRAM:

- Rechargeable battery module (MIE model *p*DR-BP)
- Active sampling adapter kit (MIE model *p*DR-FA)
- Shoulder strap (MIE model *p*DR-SS)
- Remote alarm unit (MIE model *p*DR-RA)
- Soft shell carrying case for 3 *p*DR-1000's (MIE model *p*DR-CC-3)

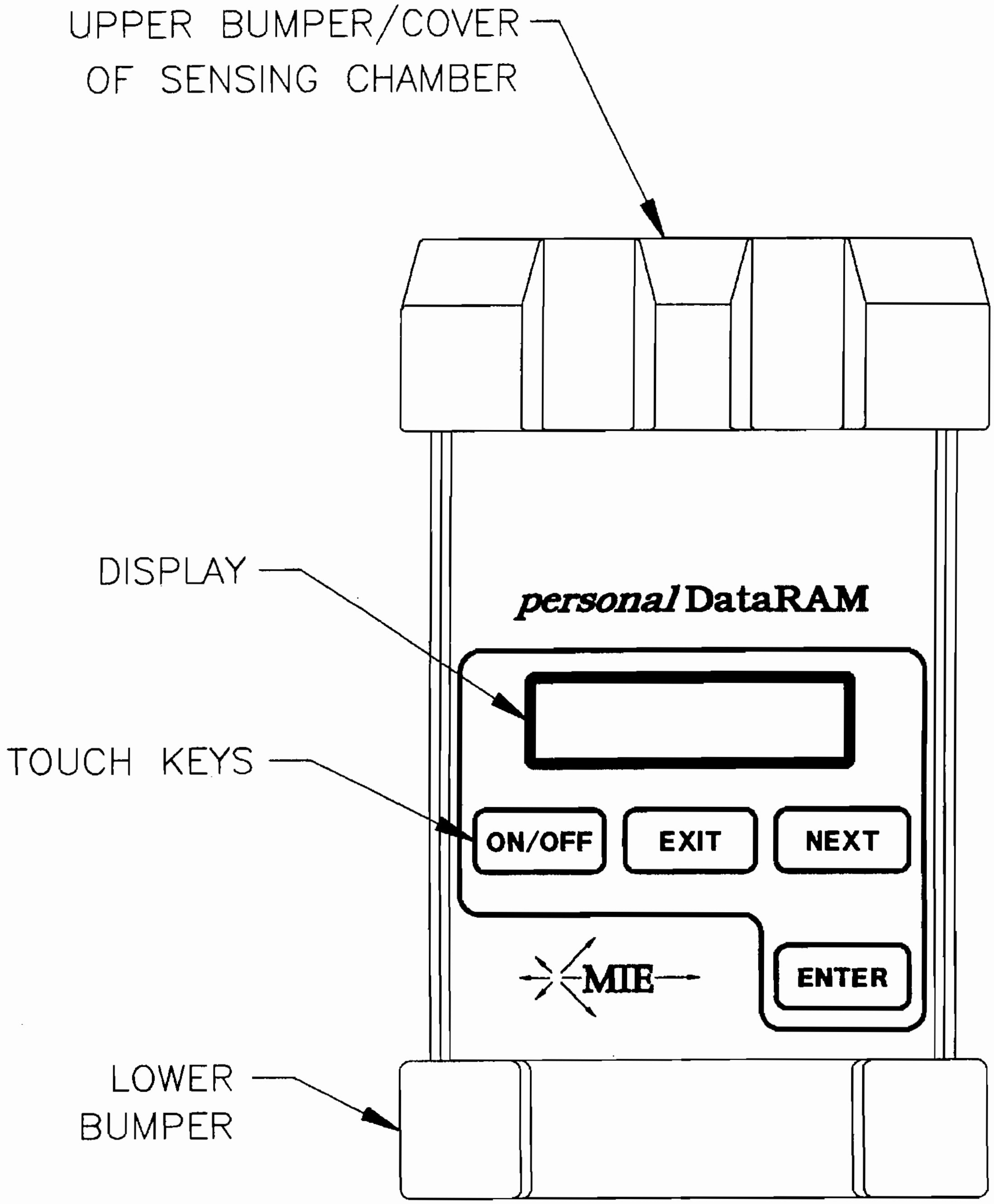

Figure 1 - FRONT PANEL

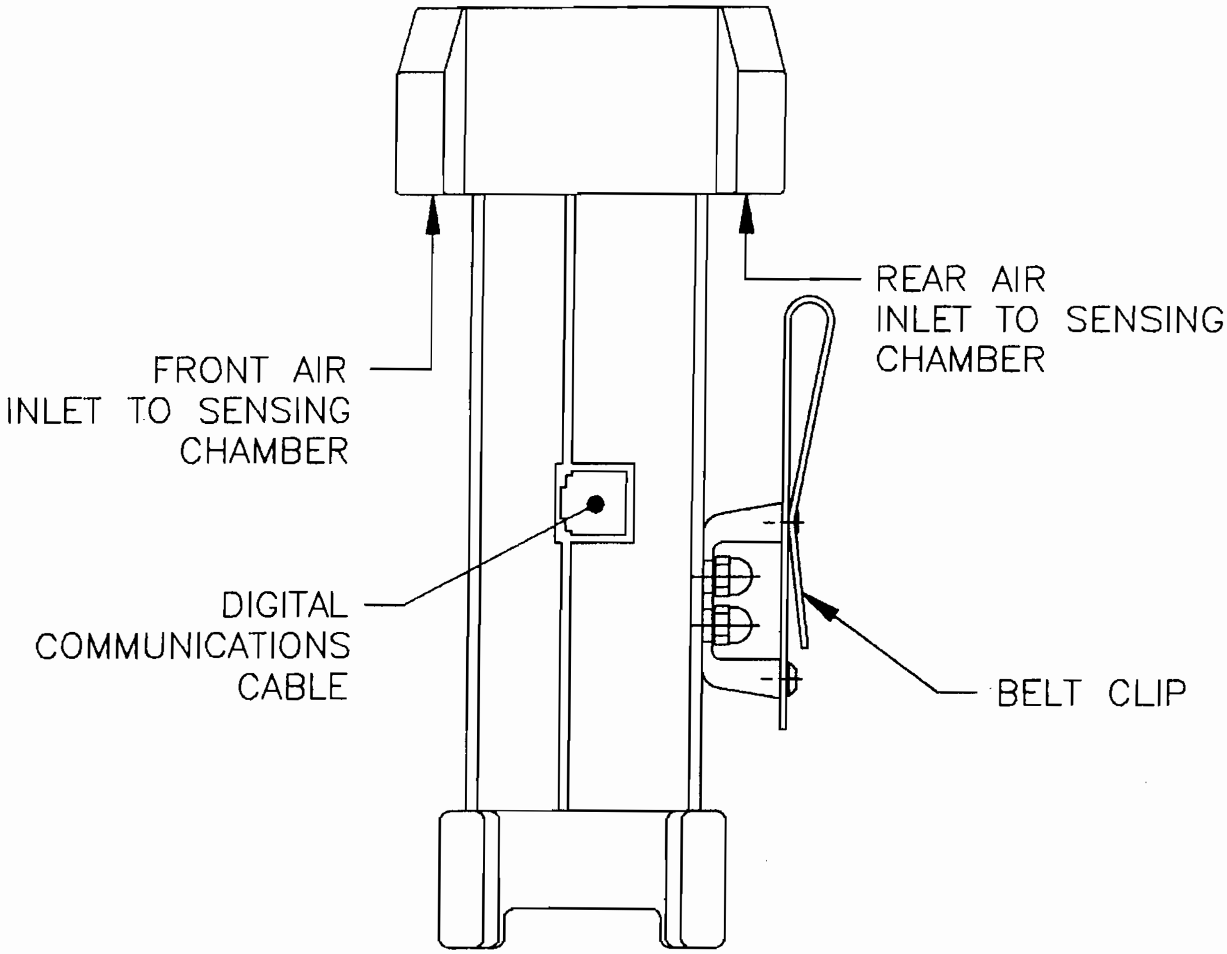

Figure 3 - RIGHT SIDE PANEL
(SHOWN WITH BELT CLIP ATTACHED)

6.0 PREPARATION FOR OPERATION

6.1 Battery Installation

When shipped from the factory, the *personal*DataRAM will arrive without its replaceable 9V battery installed. Two fresh alkaline batteries are factory packed separately in the carrying case, one of which should be installed in the *personal*DataRAM when preparing it for operation.

NOTE: Whenever the *personal*DataRAM is to be left unused for an extended time (i.e. longer than a month), the 9V battery should be removed from the unit.

Neither the program, time/date keeping, nor stored data will be lost by removing the battery.

To install the battery proceed as follows:
- Place the *personal*DataRAM upside down, resting on the upper bumper.
- Loosen thumbscrew that secures the battery compartment cover (see Figure 2), and remove that cover.
- Observe battery polarity and the back panel battery orientation pattern (the negative battery terminal is the one closer to the side of the instrument).
- Insert the battery by sliding it in until it bottoms out and is approximately flush with the bottom surface of the instrument.
- Place battery compartment cover over battery and, while pushing down the cover firmly (taking care that the cover seats flush on the bottom surface of the *personal*DataRAM), tighten thumbscrew.

6.2 Battery Replacement

Normally, only alkaline type 9V batteries (type 1604A, or equivalent) should be used with the *personal*DataRAM.

NOTE: The applied for intrinsic safety approval (as marked on the back panel) will be valid only when using an alkaline 9V battery.

Only fresh batteries should be used in order to ensure the maximum operating time. The *personal*DataRAM shuts itself off whenever the battery voltage falls below 6 volts (while retaining all programming and data). A fresh 9V alkaline battery, at room temperature, should provide a minimum of 20 hours (typically 24 to 30 hours) of continuous operation (please note that not all manufacturers produce batteries of equal capacity). Intermittent operation should extend the total running time because of partial battery recovery effects.

The approximate remaining battery capacity is indicated by the *personal*DataRAM (see Section 8.2) in increments of 20%, starting from 99%

6.5 Zeroing the *personal*DataRAM

One of the most important steps to be performed by the user before initiating a measurement run with the *personal*DataRAM is to zero the instrument in a particle-free environment. This is required to ensure maximum accuracy of concentration measurements, especially at low levels, i.e. below about 100 $\mu g/m^3$.

During the 2-minute pre-run automatic zeroing sequence (see Section 8.1), the *personal*DataRAM registers its own optical background, stores that level in its memory, and then subtracts that background from all measured concentration values, until the zero is updated again by the user.

A particle-free environment for zeroing the *personal*DataRAM can be any of the following:

- A clean room
- A clean bench
- Any duct or area directly downstream of a HEPA filter
- The *personal*DataRAM Z-Pouch (standard accessory)
- The MINIRAM Z-Bag

In some cases, a very clean, well air conditioned office may offer a sufficiently low particle concentration environment for zeroing (i.e. $\leq 5\ \mu g/m^3$), as determined by another monitor (e.g. a MIE DataRAM).

To zero the *personal*DataRAM by means of its Z-Pouch, proceed as follows:

- Wipe the outside surfaces of the *personal*DataRAM to remove as much dust from those surfaces as possible before placing the instrument inside the Z-Pouch.
- In a reasonably clean area, open the zipper of the Z-Pouch and place the *personal*DataRAM inside it. Close the zipper shut.
- Open the small nipple on the Z-Pouch, and insert the fitting of the hand-pump/in-line filter unit into the nipple.
- Start pumping the hand-pump until the Z-Pouch begins to bulge slightly, and proceed with the steps in Section 8.1, pressing the keys of the instrument through the wall of the Z-Pouch. Then, continue pumping.
- After completing the zeroing (step 2. of Section 8.1) procedure, open the Z-Pouch zipper and remove the *personal*DataRAM. Close the zipper and flatten the Z-Pouch while plugging its nipple, in order to prevent dust contamination of the interior of the Z-Pouch.

This means that the total memory capacity of 13,000 data points can be grouped into any number of the available 99 data sets (tags).

7.3.2 Clearing of Memory

Data recorded in the *personal*DataRAM memory can be erased either through an external PC command using the MIE *p*DR-COM Custom Communications software provided as a standard accessory, or resetting the instrument (see Section 8.5). The PC method permits to erase the data in any number of selected tags, whereas the resetting method results in the deletion of all data stored in the *personal*DataRAM.

7.3.3 Run Mode Display and Commands

When a measurement run has been initiated (see Section 8.3), the user has the following display choices:

a) Instantaneous and time-averaged concentrations (both on the same screen);
b) Elapsed run time, and run start time and date (both on the same screen);
c) Maximum displayed concentration from run start, and time/date at which current maximum occurred;
d) Short term excursion limit (STEL) from run start, and time/date at which current STEL occurred;
e) Remaining battery charge, and (if logging function is enabled) remaining free memory.

The user can command the termination of the run at any time returning it to the Ready Mode. To download logged data into a PC, the *personal*DataRAM must be in the Ready Mode. No changes in the program parameters or operating conditions can be made while in the Run Mode.

The *personal*DataRAM can be shut off from any of the three operating modes. Even if shut off while in the Run Mode, the instrument will save all stored data.

8.2 Setting Up For A Run (Ready Mode)

	KEY	DISPLAY	NOTES
1.	NEXT	LOGGING DISABLED	This screen indicates the logging status. To enable the logging function, key **ENTER**. Toggling of the on/off logging status can be done by keying **ENTER**.
2.	ENTER	LOG INTRVL 600s TAG#4	This message indicates that logging is enabled. Example is for 10-min log period, selected through the PC (see Section 9.0), and next free tag is #4.
3.	NEXT	ALARM: OFF	This screen indicates the alarm status. Keying **ENTER** repeatedly toggles through the 3 alarm modes:
4.	ENTER	ALARM: INSTANT LEVEL:1.50 mg/m3	This enables the alarm based on the real-time concentration. The level (e.g. 1.50 mg/m3) must be set on the PC.
5.	ENTER	ALARM: STEL LEVEL:0.50 mg/m3	This enables the alarm based on the 15-min STEL value. The level (e.g. 0.50 mg/m3) must be set on the PC.
6.	NEXT	CAL FACTOR: 1.00 DIS AVG TIME 10s	This screen displays the calibration factor and the display averaging time. Both values can be edited via PC.
7.	NEXT	BATTERY LEFT 80% MEMORY LEFT 96%	This screen displays the remaining battery charge (in 20% steps), and the remaining percentage of free memory.

5.	**NEXT**	MAX: 0.113 mg/m3 T 10:08:44 MAY15	This screen shows the maximum concentration of current run and time/date of occurrence.
6.	**NEXT**	STEL:0.058 mg/m3 T 09:59:22 MAY15	This screen shows the 15-min STEL value of the current run and the time/date of occurrence.
7.	**NEXT**	BATTERY LEFT 80%	or, if logging was enabled:
		BATTERY LEFT 80% MEMORY LEFT 96%	This screen shows the amount of usable charge left in the battery and, if logging has been enabled, the overall amount of free memory left.
8.	**NEXT**	CONC*0.047 mg/m3 TWA 0.039 mg/m3	The last **NEXT** command returns the display to the concentration screen.
9.	**EXIT**	TERMINATE RUN? Y:ENTER N:NEXT	As indicated in step 2, to end current run, key **ENTER**, to return to the Ready Mode:
10.	**ENTER**	START RUN: ENTER READY: NEXT	This keystroke terminates the current run and returns the unit to the Ready Mode.

If during a run the instrument memory is filled completely, or if all 99 tags have been used, the run is automatically terminated and the display will indicate:

RUN TERMINATED
FULL MEMORY

If a new run is initiated after the memory has been filled, the *personal*DataRAM can be operated only as a monitor without logging. The memory must then be cleared (see Section 7.3.2) first before logging can be enabled again.

8.4 Abbreviated Run Start/Stop Instructions

To power-up and start a measurement run without zeroing and setting up (logging off), proceed as follows:

- Key sequentially **ON/OFF, NEXT** and **ENTER.**

To terminate run and shut down, proceed as follows starting from the concentration screen (otherwise key **EXIT** first):

- Key sequentially **EXIT, ENTER, ON/OFF** and **ENTER.**

9.0 COMMUNICATIONS WITH COMPUTER

9.1 Hardware and Software Requirements

The computer requirements to install the software provided with the *personal*DataRAM (MIE *p*DR-COM) are the following:

- IBM-PC compatible
- 286 or better processor
- Minimum operating system: Microsoft Windows 3.1™, or Windows 3.11™, or Windows 95™
- ≥ 1 MB of RAM (4 MB is preferred)
- 2 MB hard disk drive
- 3.5" floppy drive
- VGA or higher resolution monitor

MIE custom hardware and software (provided as standard accessories):

- Digital communications cable (MIE model *p*DR-DCC)
- Software floppy disk (3.5", MIE model *p*DR-COM)

9.2 Software Installation Procedure

To install the MIE provided software in the computer, proceed as follows:

1. Insert the 3.5" disk labeled "*p*DR-COM" into computer.

2. For Windows 95™ users, select **Start** and then **Run**. For Windows 3.1 and 3.11 users, from Program Manager select **File** and then **Run**.

3. Type in on the **Command Line**: **a: install** (or **b: install**, as required).

4. The message "**Do you wish to install *p*DR-COM?**" will appear. Click **OK** to continue, or **Cancel**.

5. A message appears allowing the option to change the default directory: "**C:\PDRCOM**". It is advisable to leave the default directory (unless you address the hard drive by a different letter), and select **OK**.

6. After a successful installation, the message "**Installation Complete!**" will appear.

- Current date (month and day of the month)
- Current time (hour, minute and second)
- Display averaging time (1 to 60 seconds, in 1s increments)
- Calibration factor (0.01 to 9.99, in 0.01 increments)
- Logging interval (1 to 14,400 seconds, in 1s increments)
- Alarm level (1 to 409,599 $\mu g/m^3$, in 1 $\mu g/m^3$ increments)
- Alarm mode (Off, Instantaneous, or STEL) (can also be selected directly through *personal*DataRAM keyboard, see Section 8.2)

In addition, the user can input an identification for the instrument (e.g. serial number), or multi-character label (up to 20 characters).

9.4 Real-Time RS-232 Output

During the RUN mode, the *personal*DataRAM can communicate real-time concentration data through its serial port via the *p*DR-COM software package. This software application decodes the data and displays it on the computer screen in both graphical and tabulated form.

In order to use this output with some other application, the following information will enable the user to decipher the encoded output signal.

The communication settings for the digital output of the *personal*DataRAM are:
- Baud rate: 4800 bps
- Data bits: 8
- Stop bits: 1
- Parity: none
- Flow control: Xon/Xoff

Every second during a run, the *personal*DataRAM serial port will output a sixteen character code. It consists of two brackets with 14 hexadecimal digits between them, representing sum check (2 digits), sensed concentration (8 digits), and calibration factor (%, 4 digits). The concentration in $\mu g/m^3$ is obtained by multiplying the sensed concentration times the calibration factor and dividing by 100.

11.0 MAINTENANCE

11.1 General Guidelines

The *personal*DataRAM is designed to be repaired at the factory. Access to the internal components of the unit by others than authorized MIE personnel voids warranty. The exception to this rule is the occasional cleaning of the optical sensing chamber.

Unless a MALFUNCTION message is displayed, or other operational problems occur, the *personal*DataRAM should be returned to the factory once every two years for routine check out, test, cleaning and calibration check.

11.2 Cleaning of Optical Sensing Chamber

Continued exposure to airborne particles may result in gradual build-up of contamination on the interior surfaces of the sensing chamber components. This may cause an excessive rate of increase in the optical background. If this background level becomes excessive, the *personal*DataRAM will alert the user at the completion of the zeroing sequence, as indicated in Section 8.1, by the display of a BACKGROUND HIGH message. If this message is presented, the *personal*DataRAM can continue to be operated providing accurate measurements. However, it is then advisable to clean the interior of the sensing chamber at the first convenient opportunity, proceeding as follows:

- Remove the two screws on the top of the large protective bumper that covers the sensing chamber;
- Remove the large protective bumper by lifting it firmly upwards and away from the sensing chamber;
- Remove the socket-head screws on the front and back black covers that were exposed by removal of the large top bumper. Lift away the freed front and back covers of the sensing chamber; set them aside carefully and such that they can be reattached in the same position as they were previously;
- Using filtered (particle-free) pressurized air, blow the inside of sensing chamber taking great care in not marring or scratching any of the exposed surfaces.
- Reposition the two sensing chamber cover plates in the same location (front and back) as they had been originally. Insert and tighten socket head screws firmly.
- Reposition large protective bumper over sensing chamber pushing down until properly seated. Insert the two top screws holding down the bumper and tighten securely.
- Check optical background by zeroing the *personal*DataRAM as indicated in Section 8.1. If the sensing chamber cleaning was performed correctly, a CALIBRATION: OK message should be seen at the end of the zeroing period.

the particle environment of interest. Running of both the filter sampler and the *personal*DataRAM to be calibrated should be started simultaneously.

The comparison run duration should be sufficient to collect a mass of at least 1 mg on the reference filter (in order to permit accurate weighing of the collected mass by means of an analytical balance). The time-weighted average (TWA) reading of the *personal*DataRAM can be used to estimate the required sampling time to collect the above mentioned mass on the filter. To estimate the required sampling time (ET as measured on the *personal*DataRAM) in minutes, read the TWA value (see Section 8.3), after an elapsed time (ET) of one minute or more, and apply the following relationship:

$$ET \geq 500/TWA$$

For example, if TWA = 2.5 mg/m^3, then ET ≥ 200 minutes (approximately 3 hours). If the TWA value changes significantly as the run proceeds, recalculate the required ET accordingly.

At the end of the run (after time ET has elapsed), record TWA, ET and the flow rate Q of the filter sampler. Weigh the filter on an analytical balance and obtain Δm, the mass increment due to the collected particles.

Calculate the average gravimetric concentration C, as follows:

$$C = 1000\ \Delta m/ETxQ$$

Compare the recorded value of TWA and the calculated value C, and calculate the calibration factor to be programmed into the *personal*DataRAM (see Section 9.0) as follows:

$$CAL\ FACTOR = C/TWA$$

For example, if C was found to be 3.2 mg/m^3, and TWA had been determined to be 2.5 mg/m^3, the CAL FACTOR equals 1.28. Select this value on the PC, as described in Section 9.0. This completes the gravimetric calibration of the *personal*DataRAM for a specific aerosol.

12.3 Internal Span Check

The zeroing procedure (see Section 8.1) and the resulting normal diagnostic display of "CALIBRATION: OK" (step 2) informs the user that the instrument's calibration agrees with the original factory setting. This is an internal span check that consists of an automatic comparison between the initial (factory) optical background of the *personal*DataRAM (registered in its non-volatile memory), and the current optical background sensed during the zeroing sequence.

APPENDIX C

Resume of Judy Harry, Data Validator

JUDY V. HARRY
P. O. Box 208
120 Cobble Creek Rd.
North Creek, NY 12853

Occupation:	Data Validator/Environmental Technical Consultant
Years Experience:	28
Education:	B.S., Chemistry, Magna cum laude, 1976, Phi Beta Kappa
Certifications:	New York State Woman-Owned Business Enterprise (WBE)

Relevant Work History:

Data Validation Services: September 1989 - present

Sole proprietor of Data Validation Services, providing consultation/validation services to various regulatory and commercial clients.

These services include the review of analytical laboratory data for compliance with respect to specific protocols, accuracy and defensibility of data, verification of reported values, and evaluation of quality parameters for analytical usability of results. Approved by USEPA, NYSDEC, NJDEP, and NYCDEP as a data validator for projects, including USEPA Superfund, Brownfield, and lead sites, and those contracted through the NYSDEC Division of Hazardous Waste Remediation, Division of Solid Waste, and Division of Water Quality.

Performed validation for compliance with protocols including USEPA OLM, USEPA OLC, USEPA ILM, USEPA DFLM, USEPA SOW3/90, USEPA SOW 7/87 CLP, USEPA SOW 2/88 CLP, USEPA SW846, RCRA, AFCEE, NYS 6 NYCRR Part 360, 40 CFR, air analysis methods, 1989/1991/1995 NYSDEC ASPs, and 1987 NYSDEC CLP. Performed validation according to the USEPA National and Regional SOPs and Functional Guidelines, AFCEE requirements, NYSDEC Validation Scope of Work, and NJDEP Division of Hazardous Site Mitigation/ Publicly Funded Site Remediation SOPs.

Performed validation for USEPA Superfund Sites including Salem Acres, York Oil, Port Washington L-4 Landfill, Bridgeport Rental and Oil Services, MMR/ OTIS AFB, and Peter Cooper site; and for USEPA lead sites including SJ&J Piconne, Maska, Bowe System, and Syossett Landfill, involving CLP, RAS, and SAS protocols.

Contracted for NYSDEC Superfund Standby Contracts with LMS Engineers, Camp Dresser & McKee, Malcolm-Pirnie, Ecology & Environment, and EC Jordan, involving samples collected at NYS Superfund Sites and analyzed under the NYSDEC ASP.

Validated data for NYSDEC Phase II remedial investigations, RI/FS projects, and PRP over-site projects for hazardous waste sites. Was the primary contractor for Lawler, Matusky & Skelly Engineers during fifth and sixth round Phase II investigation, reviewing results for TCL/ TAL analyses performed according to EPA CLP and 1989 NYSDEC ASP. Provided data validation for NYSDEC Phase II investigations for Gibbs & Hill, Inc, reviewing results from TCL/TAL analyses performed in accordance with the 1989 NYSDEC ASP.

Performed validation services for clients conducting RI/FS activities involving samples of many matrices, including waste, air, sludges, leachates, solids/sediments, aqueous, and biota; clients have included Arcadis Geraghty & Miller, Barton & Loguidice, Bergmann Associates, Blasland, Bouck & Lee, Camp Dresser & McKee, C&S Consulting Engineers, Clough Harbour & Associates, Columbia Analytical Services, C.T. Male, Dames & Moore, Day Engineering, EA Engineering, Ecology & Environment, EC Jordan, Environmental Chemical Corporation, EHRT, ENSR Consulting, ERM-Northeast, Fagan Engineers, Fanning Phillips & Molnar, FluorDaniel GTI, Foster Wheeler Environmental Corp, Frontier Technical, Galson Consultants, Geomatrix Consultants, GZA Environmental, Handex of N, H2M Group, IT Corp, JTM Associates, Leader Environmental, Lockwood, Kessler & Bartlett, LMS Engineers, Malcolm-Pirnie, Metcalf & Eddy, O'Brien & Gere Engineers, Parsons Engineering-Science, Plumley Engineering, Prescott Environmental, P. W. Grosser, Rizzo Associates, Roux Associates, Sear Brown Group, SECOR, Shaw Environmental, ThermoRemediation Inc., TRC Environmental, Turnkey Environmental Restoration, TVGA Engineering, URS Consultants, Wehran Emcon, Weston, YEC, and private industries.

Validator for investigations at the Knolls Atomic Power Laboratory site. Validator for NYSDEC and NJDEP sites for samples analyzed according to EPA CLP SOPs, with validation performed according to NJDEP validation procedures. Validator for numerous landfill site investigations for TCL/TAL and NYS 6 NYCRR Part 360 analytes.

Provided consultation services to laboratories regarding analytical procedures and protocol interpretation, and to law firms for litigation support.

Provided services to firms involving audits of environmental analytical laboratories to determine analytical capability, particularly for compliance with NYSDEC ASP and AFCEE requirements.

Guest speaker on a panel discussing Data Review/Compliance and Usability, for an analysts workshop for the New York Association of Approved Environmental Laboratories, 1993.

Adirondack Environmental Services: June 1987 - August 1989

Senior mass spectroscopist for AES. Responsible for GC/MS analyses of environmental samples by USEPA and NYSDEC protocols; development of the GC/MS laboratory, initiating the instrumental and computer operations from the point of installation; and for implementing the procedures and methodologies for Contract Laboratory Protocol.

CompuChem Laboratories: May 1982 - January 1987

Managed a GC/MS production laboratory; developed, implemented, and supervised QA/QC criteria at three different levels of review; and was responsible for the development and production of the analysis of environmental and clinical samples. Directed a staff of 23 technical and clerical personnel, and managed the extraction and GC/MS labs and data review operations.

Research Triangle Institute: December 1979 - May 1982

Worked as an analytical research chemist responsible for development of analytical methods for the EPA Federal Register at RTI. This involved analysis of biological and environmental samples for priority pollutants, primarily relating to wastewaters and to human sampling studies. Method development included modification and interfacing of the initially developed Tekmar volatile purge apparatus to GC/MS, and the analysis and resolution/identification of individual PCB congeners within Aroclor mixtures by capillary column and mass spectra.

Guardsman Chemical Company: February 1977 - November 1979

Performed all quality control functions for the manufacturing plant. Performed research and development on coatings and dyes.

Almay Cosmetics: May 1976 - December 1976

Product evaluation chemist. Responsible for analytical QC of manufactured products.

Appendix E

Pre-Characterization Pre-Sampling Report

**PRE-CHARACTERIZATION PRE-SAMPLING REPORT
FOR THE
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK**

Prepared for
Consolidated Edison Company of New York, Inc.
Long Island City, New York

Prepared by:
Jacques Whitford Company, Inc.
Portsmouth, New Hampshire

September 2004

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PRE-CHARACTERIZATION PRE-SAMPLING REPORT
FOR THE
CONSOLIDATED EDISON COMPANY OF N.Y., INC.
FORMER MASPETH SUBSTATION
MASPETH, NEW YORK

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APPENDIX

1.0 INTRODUCTION

Jacques Whitford Company, Inc. (Jacques Whitford) has prepared this Pre-Characterization Pre-Sampling Report for Consolidated Edison Company of New York, Inc. ("Con Edison") for the former Maspeth Substation (the "Site") located at 57-77 Rust Street in Maspeth, Queens County, New York. This report and associated pre-characterization field activities and testing have been completed in response to the New York State Department of Environmental Conservation's (NYSDEC's) August 11, 2004 comment letter, which was, in turn, based on the NYSDEC and the New York State Department of Health (NYSDOH) review of the Remedial Action Work Plan (RAWP) for the Site. The RAWP proposed impacted on-site soil be excavated, directly loaded, and properly transported/disposed at an approved disposal facility. Although both the NYSDEC and the NYSDOH agreed with the conceptual approach for remediation, additional soil sampling and testing were recommended prior to the implementation of this "load and go" approach.

Subsurface soil and groundwater samples were collected at the Site during several phases of investigation work (1999, 2000, and 2001) and analyzed for pertinent parameters (i.e., polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals). The remedial investigation results indicate that limited exceedances of regulatory standards exist in Site soils and groundwater. The results further indicate that the principal contaminant issue at the Site is free-phase product, containing PCBs at various concentrations, located on the water table (approximately 15 ft to 17 ft below land surface (bls)). Free-phase product has been measured in observation wells, located primarily within the Site's boundaries, ranging from a sheen to approximately 2 feet. The seasonal fluctuation of the water table further suggests the product has likely created a smear zone at depths of approximately 12 to 18 feet below land surface (bls).

It was also determined that there is a potential exposure route to off-site properties. The primary source of potential exposure to constituents of concern from the Site would likely be during intrusive activities, where workers may be exposed to free-phase product, impacted groundwater and/or impacted soil.

At Con Edison's request, Jacques Whitford evaluated a number of options for the remediation of the PCB-contaminated free-phase product and associated soils. Based on the data generated and discussion with the NYSDEC, Con Edison chose to recommend an excavation/disposal approach to the remediation of the Site and submitted the aforementioned RAWP to the NYSDEC and the NYSDOH for review and comment. The RAWP proposes the excavation of free product and impacted soil at the former Maspeth Substation. Based on the evaluation of the existing analytical soil data collected during the previous site investigations, it was determined that the bulk of soil excavated from the Site would be characterized as non-hazardous for disposal purposes. Therefore, the RAWP proposed a "load and go" excavation approach (i.e., excavating the on-site soils and placing the material directly into lined trucks for transportation under proper manifest to an approved off-site disposal facility). This "load and go" approach would expedite the remedial/excavation process by allowing the materials to go directly from the Site to the disposal facility, without additional material handling or stockpiling. These additional steps would create logistical concerns; increase potential exposure to impacted materials; cause schedule extensions, and lead to an increase in project costs to Con Edison.

However, upon review of the RAWP, the NYSDEC requested additional soil sampling be conducted to complete the pre-characterization of the on-site soil in support of the "load and go" approach. Con Edison tabulated the existing PCB soil data and submitted this information in the form of the attached Figure 1 to the NYSDEC. The NYSDEC subsequently identified data gaps and requested the additional pre-characterization soil sampling. These samples would be laboratory analyzed for PCBs and fill the noted data gaps.

The NYSDEC-approved pre-characterization sampling was implemented in August and September 2004 at the Site.

2.0 WORK PERFORMED

Pre-characterization sampling was completed between August 27 and September 2, 2004 according to Site-Specific Environmental Health and Safety Plan (eHASP), Community Air Monitoring Plan (CAMP), and Quality Assurance/Quality Control Plan (QA/QCP). These documents were updated from versions that had been approved by the NYSDEC for previous similar work.

Twenty-five (25) shallow soil samples were collected at 1 to 3 feet bls. Eighteen of these shallow samples were collected adjacent to borings that were drilled during previous Site investigations; seven shallow samples were collected from areas with no previous data. Eleven soil samples were collected from a depth of 6 to 10 feet bls and seven samples were collected from a depth of 12 to 18 feet bls. The horizontal and vertical locations of these various sampling points are shown on the attached Figure 1.

The majority of the shallow samples were collected from the area directly beneath the concrete vaults/pads or in areas immediately adjacent to the pads. Due to concerns of encountering undocumented underground utilities at the Site during this soil boring/sampling program, each location was cleared with a Vactron. Jacques Whitford oversaw the utility clearance activities, which were undertaken by Aquifer Drilling and Testing, Inc. ("ADT") of New Hyde Park, New York using a Vactron 5600.

A jackhammer was used to cut a 3-feet by 3-feet opening through the concrete pads. The Vactron was used to remove the soil/debris from the open excavation. Samples from the shallow horizon (1 to 3 feet) were then collected using a stainless steel hand auger or by using a standard drill rig to advance a split-spoon sampler. The soil material was then retrieved from the hand auger or the split-spoon sampler and placed into laboratory-supplied glassware that was properly labeled and placed on ice. In those borings where additional samples were collected at depth, the Vactron was used to clear the underlying materials to a depth of 5 feet bls. Borings were then advanced with the drill rig via hollow stem augers to collect soil samples from the mid-level and deep horizons with the split-spoon sampler.

A sample of the tar-like expansion joint material located between the concrete vaults was also collected and submitted for laboratory analysis for PCBs and asbestos.

All sampling equipment was decontaminated between sampling locations with an Alconox ® wash, clean water, and a deionized water rinse. A plastic-lined temporary decon-pad was constructed on site for decontaminating the hollow stem augers via steam cleaning. All decontamination fluids were subsequently placed in 55-gallon bung-topped drums that were labeled and stored in a secure on-site area for off-site disposal by Con Edison.

For QA/QC purposes, equipment blanks were collected by pouring laboratory-supplied deionized water over the hand auger and split-spoon sampler after the decon/rinse procedure. Additional QA/QC samples included laboratory matrix spike (MS) and matrix spike duplicates (MSD). The MS/MSD samples were prepared in the laboratory during the extraction procedure for grab samples SB-24 (1-3 ft), SB-12 (1-3 ft), and SB-6 (1-3 ft) by adding known concentrations (200 ppb) of PCB 1016 and PCB 1260. The laboratory results, presented in the Appendix A, indicate there is little bias in the analytical method.

Samples were picked up at the site by the laboratory's courier and delivered to Environmental Testing Laboratories, Inc., a New York-certified analytical laboratory, for PCB analysis by EPA Method 8082. Chain of custody protocol was maintained and copies of these forms are attached with the laboratory results.

3.0 RESULTS

The soil quality PCB analytical results from the samples collected for this Pre-Characterization investigation are present in the attached Table 1. The laboratory PCB results from this investigation are also presented on the attached Figure 1 along with results from previous investigations.

All reported PCBs were identified as Arochlor 1260. PCB 1260 was reported above its respective Method Detection Limit (MDL) of 0.006 to 0.008 ppm in 19 of the 43 individual samples collected during this pre-characterization sampling. Reported concentrations ranged from 46.9 ug/kg (0.0469 ppm) at SB-22 (1 – 3 ft) to 8,490 ug/kg (8.49 ppm) at SB-1 (1 – 3 ft). These values are consistent with levels reported in soil samples collected during previous investigations. The highest PCB concentrations were reported in SB-1 (1-3 ft), SB-3 (1-3 ft), SB-6 (1-3 ft), and SB-7 (1-3 ft). Generalized boring locations are shown on Figure 1.

The current TAGM 4046 RSCO for PCBs in surface soils (0 to 2 feet) is 1.0 ppm and in subsurface soils (> 2 feet) is 10 ppm. Exceedances of the surface soil RSCO were reported at SB-1 (8.49 ppm); SB-3 (5.12 ppm); SB-6 (2.78 ppm); SB-7 (2.69 ppm); SB-10 (1.70 ppm); and, SB-28 (1.72 ppm). There were no exceedances of the subsurface soil RSCO reported in any of the samples collected during this investigation. The only sample to exceed the subsurface soil RSCO was reported at SB-4 (14 – 16 ft) at a concentration of 10.2 ppm, which had been collected in March 1999.

4.0 CONCLUSIONS/RECOMENDATIONS

The data collected during this scope of work, as well as from previous investigations, indicate that the highest soil PCB concentrations are beneath the two eastern-most concrete pads (formerly transformer vaults 5 and 6). This is also the area where free-phase product has been historically measured in monitoring wells MW-103A, MW-203/203A, and MW-202. The laboratory data further demonstrate that reported PCB concentrations are generally at concentrations below 10 ppm in both surface and subsurface soils.

The results of this investigation, as well as previous activities, support the conclusion that on-site soil be characterized as non-hazardous for disposal purposes and that the direct "load and go" approach is appropriate for the overall remedial action at this site. As discussed in the RAWP, free-phase product and any soil in direct contact with the free-product (at or just above the water table) should be handled as hazardous waste. Additionally, as described in the RAWP, it is assumed that the material from ground surface to approximately 15 feet bls will be characterized as non-hazardous for disposal purposes. Material from 15 to 18 feet bls will be characterized as hazardous waste. The actual water table/free product interface will be evaluated during the proposed remedial activities, as described in the RAWP, to fully assess the non-hazardous/hazardous horizons.

The results of the laboratory analysis of the expansion joint material detected PCB 1260 at a concentration of 4.83 ppm. This material was also reported as positive for asbestos at 3.67% (by weight). The laboratory report for asbestos is also presented in Appendix A. The expansion joint (approximately 50 to 75 linear feet) is considered as a non-friable Asbestos Containing Material and will be managed appropriately during proposed remediation activities.

Disposal of all materials from this site will be completed under appropriate manifest or appropriate shipping manifests.

TABLES

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TABLE 1
SOIL QUALITY RESULTS: 2004 PCBs
FORMER MASPETH SUBSTATION
PRE-CHARACTERIZATION WASTE PROFILE

All results reported in parts per million (ppm)

Sample Location / Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-1 1 - 3	SB-1 6 - 8	SB-3 1 - 3	SB-4 1 - 3	SB-4 6 - 8	SB-5 8 - 10	SB-6 1 - 3
PCBs (Method 8081)	1 (Residential)[1]	**8.49**		**5.12**	0.137			**2.78**
	10 (Residential)[1]		ND			0.466	0.709	

Sample Location / Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-7 1 - 3	SB-7 8 - 10	SB-8 1 - 3	SB-9 1 - 3	SB-10 1 - 3	SB-11 1 - 3	SB-12 1 - 3
PCBs (Method 8081)	1 (Residential)[1]	**2.69**		ND	ND	**1.70**	ND	0.275
	10 (Residential)[1]		0.919					

Sample Location / Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-13 1 - 3	SB-14 1 - 3	SB-15 1 - 3	SB-15 6 - 8	SB-15 14 - 16	SB-16 1 - 3	SB-17 1 - 3
PCBs (Method 8081)	1 (Residential)[1]	ND	ND	ND			ND	ND
	10 (Residential)[1]				0.102	ND		

Sample Location / Sample Depth (ft below ground)	NYSDEC RSCO (ppm)	SB-18 1 - 3	SB-19 1 - 3	SB-20 1 - 3	SB-22 1 - 3	SB-24 1 - 3	SB-24 7 - 9	SB-24 14 - 16
PCBs (Method 8081)	1 (Residential)[1]	0.0657	ND	ND	0.0469	ND		
	10 (Residential)[1]						0.118	0.373

TABLE 1
SOIL QUALITY RESULTS: 2004 PCBs
FORMER MASPETH SUBSTATION
PRE-CHARACTERIZATION WASTE PROFILE

All results reported in parts per million (ppm)

Sample Location Sample Depth (ft below ground)		SB-25 1 - 3	SB-25 7 - 9	SB-25 14 - 16	SB-26 1 - 3	SB-26 7 - 9	SB-26 14 - 16
	NYSDEC RSCO (ppm)						
PCBs (Method 8082)	1 (Residential) [1] 10 (Residential) [1]	ND	0.0899	ND	ND	ND	ND

Sample Location Sample Depth (ft below ground)		SB-27 1 - 3	SB-27 7 - 9	SB-27 14 - 16	SB-28 1 - 3	SB-28 8 - 10	SB-28 14 - 16
	NYSDEC RSCO (ppm)						
PCBs (Method 8082)	1 (Residential) [1] 10 (Residential) [1]	ND	ND	ND	**1.72**	0.335	ND

Sample Location Sample Depth (ft below ground)		SB-29 1-3	SB-29 8 - 10	SB-29 14 - 16	Expansion Join Concrete Surf.
	NYSDEC RSCO (ppm)				
PCBs (Method 8082)	1 (Residential) [1] 10 (Residential) [1]	0.122	ND	ND	**4.83**

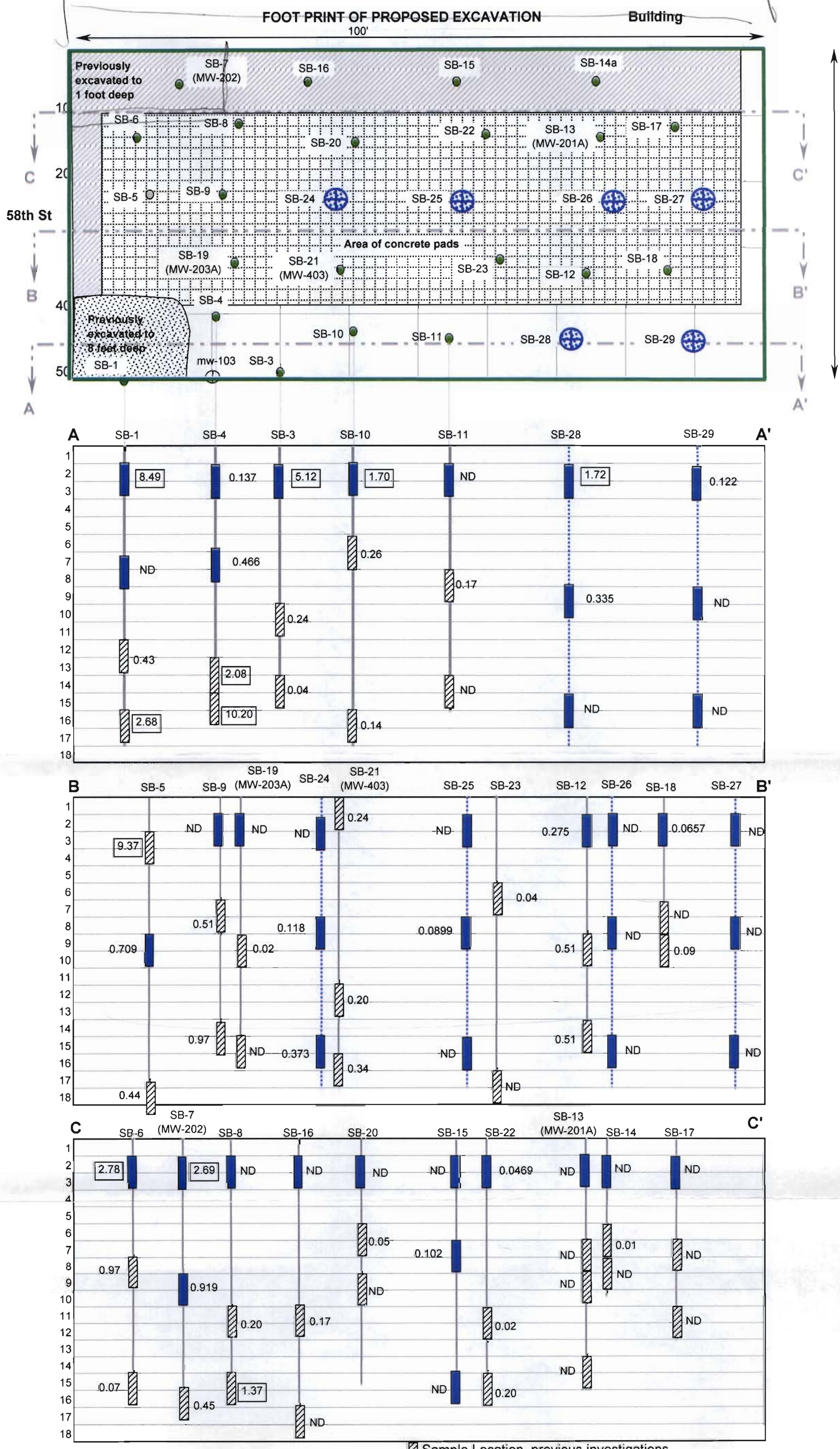
All reported concentrations are for PCB 1260
ND = Not Detected

[1] Based upon TAGM HWR-94-4046, Appendix A, Table 3; *Recommended Soil Cleanup Objectives*
Surface soils (0 - 2 feet) = 1 ppm
Subsurface soils (> 2 feet) = 10 ppm

Bold: Indicates compound reported above Recommended Cleanup Objective

FIGURES

Figure 1
Pre-Characterization Pre-Sampling Results Profile
PCB Concentrations in Soil



Sample Location, previous investigations

August 2004 Sample Location (recommended by NYSDEC)

August 2004 boring location (recommended by NYSDEC)

0.43 = PCB Concentration in PPM
ND = None Detected

6 borings
43 total samples
25 shallow (1-3 feet)
12 moderate (between 6 & 10 feet)
6 deep (~ 16-18 feet)

APPENDIX A

LABORATORY ANALYTICL RESULTS:
PCBs in Soil

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/01/2004

Custody Document: S5158

Received: 08/31/2004 15:51
Sampled by: Bruce Bline

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-1

Client Sample ID: SB-15 (1-3)
Matrix: Soil   Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/30/2004 10:00
% Solid: 90.4%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -17	7.36	7.36	ppb	U
11104-28-2	PCB 1221	K 490 -17	8.96	8.96	ppb	U
11141-16-5	PCB 1232	K 490 -17	6.39	6.39	ppb	U
53469-21-9	PCB 1242	K 490 -17	8.00	8.00	ppb	U
12672-29-6	PCB 1248	K 490 -17	9.98	9.98	ppb	U
11097-69-1	PCB 1254	K 490 -17	5.97	5.97	ppb	U
11096-82-5	PCB 1260	K 490 -17	6.02	6.02	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-17	91.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-17	75.7 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-2

Client Sample ID: SB-24 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/30/2004 10:15
% Solid: 92.2%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -18	7.21	7.21	ppb	U
11104-28-2	PCB 1221	K 490 -18	8.79	8.79	ppb	U
11141-16-5	PCB 1232	K 490 -18	6.27	6.27	ppb	U
53469-21-9	PCB 1242	K 490 -18	7.84	7.84	ppb	U
12672-29-6	PCB 1248	K 490 -18	9.78	9.78	ppb	U
11097-69-1	PCB 1254	K 490 -18	5.86	5.86	ppb	U
11096-82-5	PCB 1260	K 490 -18	5.90	5.90	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-18	77.1 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-18	69.4 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-2MS

Client Sample ID: SB-24 (1-3)
Matrix: Soil
Type: Matrix Spike
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) :

Collected: 08/30/2004 10:15
% Solid: 92.2%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -22	7.21	**212**	ppb	
11104-28-2	PCB 1221	K 490 -22	8.79	8.79	ppb	U
11141-16-5	PCB 1232	K 490 -22	6.27	6.27	ppb	U
53469-21-9	PCB 1242	K 490 -22	7.84	7.84	ppb	U
12672-29-6	PCB 1248	K 490 -22	9.78	9.78	ppb	U
11097-69-1	PCB 1254	K 490 -22	5.86	5.86	ppb	U
11096-82-5	PCB 1260	K 490 -22	5.90	**218**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-22	96.3 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-22	87.6 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-2MSD

Client Sample ID: SB-24 (1-3)
Matrix: Soil Type: Matrix Spike Dup
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) :

Collected: 08/30/2004 10:15
% Solid: 92.2%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -23	7.21	**230**	ppb	
11104-28-2	PCB 1221	K 490 -23	8.79	8.79	ppb	U
11141-16-5	PCB 1232	K 490 -23	6.27	6.27	ppb	U
53469-21-9	PCB 1242	K 490 -23	7.84	7.84	ppb	U
12672-29-6	PCB 1248	K 490 -23	9.78	9.78	ppb	U
11097-69-1	PCB 1254	K 490 -23	5.86	5.86	ppb	U
11096-82-5	PCB 1260	K 490 -23	5.90	**211**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-23	96.2 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-23	81.4 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-3

Client Sample ID: SB-25 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/30/2004 10:45
% Solid: 91.5%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -19	7.27	7.27	ppb	U
11104-28-2	PCB 1221	K 490 -19	8.85	8.85	ppb	U
11141-16-5	PCB 1232	K 490 -19	6.32	6.32	ppb	U
53469-21-9	PCB 1242	K 490 -19	7.90	7.90	ppb	U
12672-29-6	PCB 1248	K 490 -19	9.86	9.86	ppb	U
11097-69-1	PCB 1254	K 490 -19	5.90	5.90	ppb	U
11096-82-5	PCB 1260	K 490 -19	5.95	5.95	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-19	80.2 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-19	63.6 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-4
Client Sample ID: SB-26 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/30/2004 11:15
% Solid: 84.8%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -20	7.84	7.84	ppb	U
11104-28-2	PCB 1221	K 490 -20	9.55	9.55	ppb	U
11141-16-5	PCB 1232	K 490 -20	6.82	6.82	ppb	U
53469-21-9	PCB 1242	K 490 -20	8.53	8.53	ppb	U
12672-29-6	PCB 1248	K 490 -20	10.6	10.6	ppb	U
11097-69-1	PCB 1254	K 490 -20	6.37	6.37	ppb	U
11096-82-5	PCB 1260	K 490 -20	6.42	6.42	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-20	57.8 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-20	61.3 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-5

Client Sample ID: SB-27 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004
Collected: 08/30/2004 11:30
% Solid: 86.7%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	K 490 -21	7.67	7.67	ppb	U
11104-28-2	PCB 1221	K 490 -21	9.34	9.34	ppb	U
11141-16-5	PCB 1232	K 490 -21	6.67	6.67	ppb	U
53469-21-9	PCB 1242	K 490 -21	8.34	8.34	ppb	U
12672-29-6	PCB 1248	K 490 -21	10.4	10.4	ppb	U
11097-69-1	PCB 1254	K 490 -21	6.23	6.23	ppb	U
11096-82-5	PCB 1260	K 490 -21	6.27	6.27	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-21	74.3 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-21	73.2 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5158-6

Client Sample ID: Equip Blank   Collected: 08/30/2004 14:30
Matrix: Liquid   Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	K 490 -25	0.0080	0.0080	ppb	U
11104-28-2	PCB 1221	K 490 -25	0.060	0.060	ppb	U
11141-16-5	PCB 1232	K 490 -25	0.050	0.050	ppb	U
53469-21-9	PCB 1242	K 490 -25	0.060	0.060	ppb	U
12672-29-6	PCB 1248	K 490 -25	0.040	0.040	ppb	U
11097-69-1	PCB 1254	K 490 -25	0.030	0.030	ppb	U
11096-82-5	PCB 1260	K 490 -25	0.060	0.060	ppb	U

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-25	40.1 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-25	62.0 %	(30 - 150)	

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09/01/2004

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and wams the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected above the Method Detection Limit (MDL) which is less than the lowest calibration standard concentration.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

ETL
Environmental Testing Laboratories, Inc.
208 Route 109 • Farmingdale • New York 11735
631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

S 5158

Project Name: Con Ed MASPETH | Project Manager: DAVID Hill | Sampler (Signature): [signature] | (Print): BRUCE P BLINE

Project Address: 55-77 Rust Ave, Maspeth NY

Client Jacques Whitford J/N: | X Rush by 9 / 1 / 04

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH							
1	8/30/04	1000	G	S	SB-15 (1-3)	1						X											
2	8/30/04	1015	G	S	SB-24 (1-3)	1						X											
3	8/30/04	1045	G	S	SB-25 (1-3)	1						X											
4	8/30/04	1115	G	S	SB-26 (1-3)	1						X											
5	8/30/04	1130	G	S	SB-27 (1-3)	1						X											
6	8/30/04	1430	G	L	EQUIP BLANK	1						X											
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received by (Signature):	Date / Time	Printed Name & Agent
[signature]	Date 8/31/04 Time 1415	BRUCE P BLINE JACQUES Whitford	[signature]	Date 8/31 Time 1415	[signature]

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received for Lab by (Signature):	Date / Time	Printed Name
	Date Time			Date Time	

Comments & Special Instructions	QA/QC Type:	Number & Type of Containers:	Preservatives:	Temp:
Level 3 Analysis / NYS ASP METHODS	CAT B deliverables	5 soil, 1 water		

CLIENT COPY

Environmental Testing Laboratories, Inc.
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Phone - 631-249-1456 Fax - 631-249-8344

09/01/2004

Custody Document: S5159

Received: 08/31/2004 16:06

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-1
Client Sample ID: SB-28 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 08:35
% Solid: 84%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -88	2.43	2.43	ppb	U
11104-28-2	PCB 1221	G 758 -88	11.4	11.4	ppb	U
11141-16-5	PCB 1232	G 758 -88	2.54	2.54	ppb	U
53469-21-9	PCB 1242	G 758 -88	1.90	1.90	ppb	U
12672-29-6	PCB 1248	G 758 -88	4.29	4.29	ppb	U
11097-69-1	PCB 1254	G 758 -88	6.49	6.49	ppb	U
11096-82-5	PCB 1260	G 758 -88	7.45	**1720**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-88	101.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-88	74.0 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-2
Client Sample ID: SB-4 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004
Collected: 08/31/2004 09:45
% Solid: 90.3%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -89	2.26	2.26	ppb	U
11104-28-2	PCB 1221	G 758 -89	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 758 -89	2.36	2.36	ppb	U
53469-21-9	PCB 1242	G 758 -89	1.77	1.77	ppb	U
12672-29-6	PCB 1248	G 758 -89	3.99	3.99	ppb	U
11097-69-1	PCB 1254	G 758 -89	6.04	6.04	ppb	U
11096-82-5	PCB 1260	G 758 -89	6.93	**137**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-89	115.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-89	92.0 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-3
Client Sample ID: SB-4 (6-8)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 09:50
% Solid: 85.5%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -90	2.39	2.39	ppb	U
11104-28-2	PCB 1221	G 758 -90	11.2	11.2	ppb	U
11141-16-5	PCB 1232	G 758 -90	2.49	2.49	ppb	U
53469-21-9	PCB 1242	G 758 -90	1.87	1.87	ppb	U
12672-29-6	PCB 1248	G 758 -90	4.21	4.21	ppb	U
11097-69-1	PCB 1254	G 758 -90	6.37	6.37	ppb	U
11096-82-5	PCB 1260	G 758 -90	7.32	**466**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-90	118.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-90	66.9 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-4
Client Sample ID: SB-19 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004
Collected: 08/31/2004 10:05
% Solid: 85%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -91	2.40	2.40	ppb	U
11104-28-2	PCB 1221	G 758 -91	11.3	11.3	ppb	U
11141-16-5	PCB 1232	G 758 -91	2.51	2.51	ppb	U
53469-21-9	PCB 1242	G 758 -91	1.88	1.88	ppb	U
12672-29-6	PCB 1248	G 758 -91	4.24	4.24	ppb	U
11097-69-1	PCB 1254	G 758 -91	6.41	6.41	ppb	U
11096-82-5	PCB 1260	G 758 -91	7.36	7.36	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-91	103.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-91	89.1 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-5
Client Sample ID: SB-29 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 10:20
% Solid: 92.3%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -92	2.21	2.21	ppb	U
11104-28-2	PCB 1221	G 758 -92	10.4	10.4	ppb	U
11141-16-5	PCB 1232	G 758 -92	2.31	2.31	ppb	U
53469-21-9	PCB 1242	G 758 -92	1.73	1.73	ppb	U
12672-29-6	PCB 1248	G 758 -92	3.90	3.90	ppb	U
11097-69-1	PCB 1254	G 758 -92	5.90	5.90	ppb	U
11096-82-5	PCB 1260	G 758 -92	6.78	**122**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-92	99.9 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-92	89.3 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-6
Client Sample ID: SB-1 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 10:25
% Solid: 88.1%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -93	2.32	2.32	ppb	U
11104-28-2	PCB 1221	G 758 -93	10.9	10.9	ppb	U
11141-16-5	PCB 1232	G 758 -93	2.42	2.42	ppb	U
53469-21-9	PCB 1242	G 758 -93	1.82	1.82	ppb	U
12672-29-6	PCB 1248	G 758 -93	4.09	4.09	ppb	U
11097-69-1	PCB 1254	G 758 -93	6.19	6.19	ppb	U
11096-82-5	PCB 1260	G 758 -93	7.11	**8490**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-93	106.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-93	84.6 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-7

Client Sample ID: SB-1 (6-8)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 10:30
% Solid: 88.3%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -94	2.31	2.31	ppb	U
11104-28-2	PCB 1221	G 758 -94	10.9	10.9	ppb	U
11141-16-5	PCB 1232	G 758 -94	2.41	2.41	ppb	U
53469-21-9	PCB 1242	G 758 -94	1.81	1.81	ppb	U
12672-29-6	PCB 1248	G 758 -94	4.08	4.08	ppb	U
11097-69-1	PCB 1254	G 758 -94	6.17	6.17	ppb	U
11096-82-5	PCB 1260	G 758 -94	7.09	7.09	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-94	108.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-94	84.9 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-8
Client Sample ID: Equip Blank
Collected: 08/31/2004 10:50
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	K 490 -26	0.0080	0.0080	ppb	U
11104-28-2	PCB 1221	K 490 -26	0.060	0.060	ppb	U
11141-16-5	PCB 1232	K 490 -26	0.050	0.050	ppb	U
53469-21-9	PCB 1242	K 490 -26	0.060	0.060	ppb	U
12672-29-6	PCB 1248	K 490 -26	0.040	0.040	ppb	U
11097-69-1	PCB 1254	K 490 -26	0.030	0.030	ppb	U
11096-82-5	PCB 1260	K 490 -26	0.060	0.060	ppb	U

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	K490-26	49.4 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	K490-26	59.2 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-9
Client Sample ID: SB-24 (7-9)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 11:35
% Solid: 89.6%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -95	2.28	2.28	ppb	U
11104-28-2	PCB 1221	G 758 -95	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 758 -95	2.38	2.38	ppb	U
53469-21-9	PCB 1242	G 758 -95	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 758 -95	4.02	4.02	ppb	U
11097-69-1	PCB 1254	G 758 -95	6.08	6.08	ppb	U
11096-82-5	PCB 1260	G 758 -95	6.99	**118**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-95	105.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-95	62.8 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-10
Client Sample ID: SB-24 (14-16)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 11:45
% Solid: 89.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -96	2.27	2.27	ppb	U
11104-28-2	PCB 1221	G 758 -96	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 758 -96	2.37	2.37	ppb	U
53469-21-9	PCB 1242	G 758 -96	1.78	1.78	ppb	U
12672-29-6	PCB 1248	G 758 -96	4.00	4.00	ppb	U
11097-69-1	PCB 1254	G 758 -96	6.06	6.06	ppb	U
11096-82-5	PCB 1260	G 758 -96	6.96	**373**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-96	86.1 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-96	57.1 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-11

Client Sample ID: SB-3 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 12:05
% Solid: 90.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -97	2.24	2.24	ppb	U
11104-28-2	PCB 1221	G 758 -97	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 758 -97	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 758 -97	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 758 -97	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 758 -97	6.00	6.00	ppb	U
11096-82-5	PCB 1260	G 758 -97	6.89	**5120**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-97	75.8 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-97	69.2 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-12
Client Sample ID: SB-25 (7-9)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Collected: 08/31/2004 13:20
% Solid: 89.4%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -98	2.28	2.28	ppb	U
11104-28-2	PCB 1221	G 758 -98	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 758 -98	2.38	2.38	ppb	U
53469-21-9	PCB 1242	G 758 -98	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 758 -98	4.03	4.03	ppb	U
11097-69-1	PCB 1254	G 758 -98	6.10	6.10	ppb	U
11096-82-5	PCB 1260	G 758 -98	7.00	**89.9**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-98	92.2 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-98	60.8 %	(30 - 150)	

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09/01/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5159-13

Client Sample ID: SB-25 (14-16) Collected: 08/31/2004 13:35
Matrix: Soil Type: Grab % Solid: 91.3%
Remarks:
Analyzed Date: 09/01/2004
Preparation Date(s) : 09/01/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 758 -99	2.23	2.23	ppb	U
11104-28-2	PCB 1221	G 758 -99	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 758 -99	2.33	2.33	ppb	U
53469-21-9	PCB 1242	G 758 -99	1.75	1.75	ppb	U
12672-29-6	PCB 1248	G 758 -99	3.94	3.94	ppb	U
11097-69-1	PCB 1254	G 758 -99	5.97	5.97	ppb	U
11096-82-5	PCB 1260	G 758 -99	6.86	6.86	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G758-99	92.1 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G758-99	66.0 %	(30 - 150)	

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09/01/2004

CASE NARRATIVE

PCB ANALYSIS

Samples 1 & 5 contain possibly another congeners that are masking the arochlor 1260. However PCB-1260 quantitation was possible to carry out to these two samples.

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09/01/2004

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected above the Method Detection Limit (MDL) which is less than the lowest calibration standard concentration.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

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CHAIN OF CUSTODY DOCUMENT

S 5159

Project Name: Con Ed Maspeth | Project Manager: David Hill
Sampler (Signature): [signature] (Print): Bruce P Blane

Project Address: 55-77 Rust ST, Maspeth, Queens, NY

Client Jacques Whitford J/N: ☒ Rush by 9 / 1 / 04

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH
1	8/31/04	835	G	S	SB-28 (1-3)	1						X				
2	8/31/04	945	G	S	SB-4 (1-3)	1						X				
3	8/31/04	950	G	S	SB-4 (6-8)	1						X				
4	8/31/04	1005	G	S	SB-19 (1-3)	1						X				
5	8/31/04	1020	G	S	SB-29 (1-3)	1						X				
6	8/31/04	1025	G	S	SB-1 (1-3)	1						X				
7	8/31/04	1030	G	S	SB-1 (6-8)	1						X				
8	8/31/04	1050	G	L	EQUIP BLANK	1						X				
9	8/31/04	1135	G	S	SB-24 (7-9)	1						X				
10	8/31/04	1145	G	S	SB-24 (14-16)	1						X				
11	8/31/04	1205	G	S	SB-3 (1-3)	1						X				
12	8/31/04	1320	G	S	SB-25 (7-9)	1						X				
13	8/31/04	1335	G	S	SB-25 (14-16)	1						X				
14																
15																

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received by (Signature):	Date / Time	Printed Name & Agent
[signature]	Date 8/31/04 Time 1415	Bruce P Blane Jacques Whitford	[signature]	Date Time	
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name

Comments & Special Instructions: Level [illegible] analysis / NYS ASP [illegible]

QA/QC Type: Cat B Deliverables

Number & Type of Containers:

Preservatives:

Temp:

CLIENT COPY

Environmental Testing Laboratories, Inc.
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Phone - 631-249-1456 Fax - 631-249-8344

09/02/2004

Custody Document: S5160

Received: 09/01/2004 15:46
Sampled by: Bruce Bline

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

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09/02/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5160-1
Client Sample ID: SB-27 (7-9)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004
Collected: 08/31/2004 14:35
% Solid: 85.1%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -6	2.40	2.40	ppb	U
11104-28-2	PCB 1221	G 759 -6	11.3	11.3	ppb	U
11141-16-5	PCB 1232	G 759 -6	2.50	2.50	ppb	U
53469-21-9	PCB 1242	G 759 -6	1.88	1.88	ppb	U
12672-29-6	PCB 1248	G 759 -6	4.23	4.23	ppb	U
11097-69-1	PCB 1254	G 759 -6	6.40	6.40	ppb	U
11096-82-5	PCB 1260	G 759 -6	7.36	7.36	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-6	102.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-6	86.1 %	(30 - 150)	

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09/02/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5160-2
Client Sample ID: SB-27 (14-16)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 08/31/2004 14:40
% Solid: 88.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -7	2.29	2.29	ppb	U
11104-28-2	PCB 1221	G 759 -7	10.8	10.8	ppb	U
11141-16-5	PCB 1232	G 759 -7	2.40	2.40	ppb	U
53469-21-9	PCB 1242	G 759 -7	1.80	1.80	ppb	U
12672-29-6	PCB 1248	G 759 -7	4.05	4.05	ppb	U
11097-69-1	PCB 1254	G 759 -7	6.13	6.13	ppb	U
11096-82-5	PCB 1260	G 759 -7	7.04	7.04	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-7	90.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-7	81.7 %	(30 - 150)	

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09/02/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5160-3

Client Sample ID: SB-26 (7-9)
Collected: 08/31/2004 15:00
Matrix: Soil
Type: Grab
% Solid: 90.2%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -8	2.26	2.26	ppb	U
11104-28-2	PCB 1221	G 759 -8	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -8	2.36	2.36	ppb	U
53469-21-9	PCB 1242	G 759 -8	1.77	1.77	ppb	U
12672-29-6	PCB 1248	G 759 -8	3.99	3.99	ppb	U
11097-69-1	PCB 1254	G 759 -8	6.04	6.04	ppb	U
11096-82-5	PCB 1260	G 759 -8	6.94	6.94	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-8	80.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-8	50.5 %	(30 - 150)	

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09/02/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5160-4

Client Sample ID: SB-26 (14-16) Collected: 08/31/2004 15:10
Matrix: Soil Type: Grab % Solid: 89.3%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -9	2.28	2.28	ppb	U
11104-28-2	PCB 1221	G 759 -9	10.8	10.8	ppb	U
11141-16-5	PCB 1232	G 759 -9	2.39	2.39	ppb	U
53469-21-9	PCB 1242	G 759 -9	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 759 -9	4.03	4.03	ppb	U
11097-69-1	PCB 1254	G 759 -9	6.10	6.10	ppb	U
11096-82-5	PCB 1260	G 759 -9	7.01	7.01	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-9	90.9 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-9	70.0 %	(30 - 150)	

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09/02/2004

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected above the Method Detection Limit (MDL) which is less than the lowest calibration standard concentration.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

ETL

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CHAIN OF CUSTODY DOCUMENT

S 5160

Project Name: Con Ed Maspeth	Project Manager: David Hill
Project Address: 55-77 Rust St, Maspeth, Queens NY	
Client Jacques Whitford/N:	☒ Rush by 9/12/04

Sampler (Signature): [signature] (Print): Bruce P Bline

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe
*Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH
1	8/31/04	1435	G	S	SB-27 (7-9)	1						X				
2	8/31/04	1440	G	S	SB-27 (14-16)	1						X				
3	8/31/04	1500	G	S	SB-26 (7-9)	1						X				
4	8/31/04	1510	G	S	SB-26 (14-16)	1						X				
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

Relinquished by (Signature): [signature]	Date 9/1/04 Time 1410	Printed Name & Agent: Bruce P Bline Jacques Whitford	Received by (Signature): [signature]	Date 9/1/04 Time 10	Printed Name & Agent [illegible]
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name
Comments & Special Instructions: Level 3 Analysis / NYS ASP Methods		QA/QC Type: CAT B Deliverables	Number & Type of Containers:	Preservatives:	Temp:

CLIENT COPY

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09/03/2004

Custody Document: S5161

Received: 09/01/2004 15:19
Sampled by: Bruce Bline

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-1
Client Sample ID: SB-28 (8-10)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 09:30
% Solid: 70.2%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -10	2.91	2.91	ppb	U
11104-28-2	PCB 1221	G 759 -10	13.7	13.7	ppb	U
11141-16-5	PCB 1232	G 759 -10	3.03	3.03	ppb	U
53469-21-9	PCB 1242	G 759 -10	2.28	2.28	ppb	U
12672-29-6	PCB 1248	G 759 -10	5.13	5.13	ppb	U
11097-69-1	PCB 1254	G 759 -10	7.76	7.76	ppb	U
11096-82-5	PCB 1260	G 759 -10	8.92	**335**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-10	101.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-10	68.1 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-2

Client Sample ID: SB-28 (14-16)

Collected: 09/01/2004 09:40

Matrix: Soil

Type: Grab

% Solid: 92%

Remarks:

Analyzed Date: 09/02/2004

Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -11	2.22	2.22	ppb	U
11104-28-2	PCB 1221	G 759 -11	10.4	10.4	ppb	U
11141-16-5	PCB 1232	G 759 -11	2.32	2.32	ppb	U
53469-21-9	PCB 1242	G 759 -11	1.74	1.74	ppb	U
12672-29-6	PCB 1248	G 759 -11	3.91	3.91	ppb	U
11097-69-1	PCB 1254	G 759 -11	5.92	5.92	ppb	U
11096-82-5	PCB 1260	G 759 -11	6.80	6.80	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-11	103.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-11	90.7 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-3
Client Sample ID: SB-29 (8-10)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 09:55
% Solid: 89.5%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -12	2.28	2.28	ppb	U
11104-28-2	PCB 1221	G 759 -12	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 759 -12	2.38	2.38	ppb	U
53469-21-9	PCB 1242	G 759 -12	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 759 -12	4.02	4.02	ppb	U
11097-69-1	PCB 1254	G 759 -12	6.09	6.09	ppb	U
11096-82-5	PCB 1260	G 759 -12	6.99	6.99	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-12	106.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-12	90.0 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-4

Client Sample ID: SB-29 (14-16)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 10:00
% Solid: 61.5%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -13	3.32	3.32	ppb	U
11104-28-2	PCB 1221	G 759 -13	15.6	15.6	ppb	U
11141-16-5	PCB 1232	G 759 -13	3.46	3.46	ppb	U
53469-21-9	PCB 1242	G 759 -13	2.60	2.60	ppb	U
12672-29-6	PCB 1248	G 759 -13	5.85	5.85	ppb	U
11097-69-1	PCB 1254	G 759 -13	8.86	8.86	ppb	U
11096-82-5	PCB 1260	G 759 -13	10.2	10.2	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-13	90.4 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-13	79.3 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-5
Client Sample ID: Equip Blank Collected: 09/01/2004 10:35
Matrix: Liquid Type: Blank
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	G 759 -50	0.080	0.080	ppb	U
11104-28-2	PCB 1221	G 759 -50	0.030	0.030	ppb	U
11141-16-5	PCB 1232	G 759 -50	0.11	0.11	ppb	U
53469-21-9	PCB 1242	G 759 -50	0.11	0.11	ppb	U
12672-29-6	PCB 1248	G 759 -50	0.090	0.090	ppb	U
11097-69-1	PCB 1254	G 759 -50	0.040	0.040	ppb	U
11096-82-5	PCB 1260	G 759 -50	0.080	0.080	ppb	U

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-50	31.8 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-50	105.0 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-6
Client Sample ID: SB-15 (6-8)
Collected: 09/01/2004 11:20
Matrix: Soil
Type: Grab
% Solid: 89.8%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -14	2.27	2.27	ppb	U
11104-28-2	PCB 1221	G 759 -14	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 759 -14	2.37	2.37	ppb	U
53469-21-9	PCB 1242	G 759 -14	1.78	1.78	ppb	U
12672-29-6	PCB 1248	G 759 -14	4.01	4.01	ppb	U
11097-69-1	PCB 1254	G 759 -14	6.07	6.07	ppb	U
11096-82-5	PCB 1260	G 759 -14	6.97	**102**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-14	105.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-14	67.5 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-7

Client Sample ID: SB-15 (14-16)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 11:25
% Solid: 88.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -15	2.29	2.29	ppb	U
11104-28-2	PCB 1221	G 759 -15	10.8	10.8	ppb	U
11141-16-5	PCB 1232	G 759 -15	2.40	2.40	ppb	U
53469-21-9	PCB 1242	G 759 -15	1.80	1.80	ppb	U
12672-29-6	PCB 1248	G 759 -15	4.05	4.05	ppb	U
11097-69-1	PCB 1254	G 759 -15	6.13	6.13	ppb	U
11096-82-5	PCB 1260	G 759 -15	7.04	7.04	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-15	114.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-15	80.5 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-8
Client Sample ID: SB-10 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004
Collected: 09/01/2004 11:55
% Solid: 90.1%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -16	2.26	2.26	ppb	U
11104-28-2	PCB 1221	G 759 -16	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 759 -16	2.36	2.36	ppb	U
53469-21-9	PCB 1242	G 759 -16	1.78	1.78	ppb	U
12672-29-6	PCB 1248	G 759 -16	4.00	4.00	ppb	U
11097-69-1	PCB 1254	G 759 -16	6.05	6.05	ppb	U
11096-82-5	PCB 1260	G 759 -16	6.95	**1700**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-16	88.8 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-16	77.8 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-9

Client Sample ID: SB-11 (1-3) Collected: 09/01/2004 12:00
Matrix: Soil Type: Grab % Solid: 76.8%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -17	2.66	2.66	ppb	U
11104-28-2	PCB 1221	G 759 -17	12.5	12.5	ppb	U
11141-16-5	PCB 1232	G 759 -17	2.77	2.77	ppb	U
53469-21-9	PCB 1242	G 759 -17	2.08	2.08	ppb	U
12672-29-6	PCB 1248	G 759 -17	4.69	4.69	ppb	U
11097-69-1	PCB 1254	G 759 -17	7.10	7.10	ppb	U
11096-82-5	PCB 1260	G 759 -17	8.15	8.15	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-17	82.3 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-17	78.8 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-10

Client Sample ID: SB-5 (8-10)
Collected: 09/01/2004 13:20
Matrix: Soil
Type: Grab
% Solid: 90.2%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -18	2.26	2.26	ppb	U
11104-28-2	PCB 1221	G 759 -18	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -18	2.36	2.36	ppb	U
53469-21-9	PCB 1242	G 759 -18	1.77	1.77	ppb	U
12672-29-6	PCB 1248	G 759 -18	3.99	3.99	ppb	U
11097-69-1	PCB 1254	G 759 -18	6.04	6.04	ppb	U
11096-82-5	PCB 1260	G 759 -18	6.94	**709**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-18	94.2 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-18	68.1 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-11

Client Sample ID: SB-6 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 13:30
% Solid: 90.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -19	2.24	2.24	ppb	U
11104-28-2	PCB 1221	G 759 -19	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -19	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -19	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -19	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -19	6.00	6.00	ppb	U
11096-82-5	PCB 1260	G 759 -19	6.89	**2780**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-19	98.7 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-19	87.0 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-11MS

Client Sample ID: SB-6 (1-3) MS — Collected: 09/01/2004 13:30
Matrix: Soil — Type: Matrix Spike — % Solid: 90.9%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -20	2.24	**223**	ppb	
11104-28-2	PCB 1221	G 759 -20	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -20	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -20	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -20	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -20	6.00	6.00	ppb	U
11096-82-5	PCB 1260	G 759 -20	6.89	**2980**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-20	109.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-20	87.8 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-11MSD
Client Sample ID: SB-6 (1-3) MSD
Matrix: Soil
Type: Matrix Spike Dup
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Collected: 09/01/2004 13:30
% Solid: 90.9%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -21	2.24	**229**	ppb	
11104-28-2	PCB 1221	G 759 -21	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -21	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -21	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -21	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -21	6.00	6.00	ppb	U
11096-82-5	PCB 1260	G 759 -21	6.89	**2900**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-21	109.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-21	92.8 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-12

Client Sample ID: SB-7 (1-3)
Collected: 09/01/2004 13:45
Matrix: Soil
Type: Grab
% Solid: 82.3%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -25	2.48	2.48	ppb	U
11104-28-2	PCB 1221	G 759 -25	11.7	11.7	ppb	U
11141-16-5	PCB 1232	G 759 -25	2.59	2.59	ppb	U
53469-21-9	PCB 1242	G 759 -25	1.94	1.94	ppb	U
12672-29-6	PCB 1248	G 759 -25	4.37	4.37	ppb	U
11097-69-1	PCB 1254	G 759 -25	6.62	6.62	ppb	U
11096-82-5	PCB 1260	G 759 -25	7.61	**2690**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-25	88.9 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-25	61.7 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-13

Client Sample ID: SB-7 (8-10)
Collected: 09/01/2004 13:50
Matrix: Soil
Type: Grab
% Solid: 70%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -26	2.91	2.91	ppb	U
11104-28-2	PCB 1221	G 759 -26	13.7	13.7	ppb	U
11141-16-5	PCB 1232	G 759 -26	3.04	3.04	ppb	U
53469-21-9	PCB 1242	G 759 -26	2.29	2.29	ppb	U
12672-29-6	PCB 1248	G 759 -26	5.14	5.14	ppb	U
11097-69-1	PCB 1254	G 759 -26	7.79	7.79	ppb	U
11096-82-5	PCB 1260	G 759 -26	8.94	**919**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-26	100.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-26	68.1 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5161-14

Client Sample ID: SB-8 (1-3)
Collected: 09/01/2004 14:00
Matrix: Soil
Type: Grab
% Solid: 91%
Remarks:
Analyzed Date: 09/02/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -27	2.24	2.24	ppb	U
11104-28-2	PCB 1221	G 759 -27	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 759 -27	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -27	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -27	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -27	5.99	5.99	ppb	U
11096-82-5	PCB 1260	G 759 -27	6.88	6.88	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-27	109.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-27	99.5 %	(30 - 150)	

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Phone - 631-249-1456 Fax - 631-249-8344

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected above the Method Detection Limit (MDL) which is less than the lowest calibration standard concentration.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

ETL
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631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

S 5161

CLIENT COPY

Project Name: Con Ed Maspeth	Project Manager: David Hill
Project Address: 55-77 Rust St. Maspeth, Queens, NY	
Client: Jacques Whitford P/N:	☒ Rush by 9 / 12 / 04

Sampler (Signature): [signature] (Print): Bruce P Bline

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH
1	9/1/04	930	G	S	SB-28 (8-10)	1						X				
2	9/1/04	940	G	S	SB-28 (14-16)	1						X				
3	9/1/04	955	G	S	SB-29 (8-10)	1						X				
4	9/1/04	1000	G	S	SB-29 (14-16)	1						X				
5	9/1/04	1035	G	L	EQUIP BLANK	1						X				
6	9/1/04	1120 ~~1125~~	G	S	SB-15 (6-8)	1						X				
7	9/1/04	1125	G	S	SB-15 (14-16)	1						X				
8	9/1/04	1135	G	S	SB-10 (1-3)	1						X				
9	9/1/04	1200	G	S	SB-11 (1-3)	1						X				
10	9/1/04	1320	G	S	SB-5 (8-10)	1						X				
11	9/1/04	1330	G	S	SB-6 (1-3)	1						X				
12	9/1/04	1345	G	S	SB-7 (1-3)	1						X				
13	9/1/04	1350	G	S	SB-7 (8-10)	1						X				
14	9/1/04	1400	G	S	SB-8 (1-3)	1						X				
15																

Relinquished by (Signature):	Date 9/1/04 Time 1410	Printed Name & Agent: Bruce P Bline Jacques Whitford	Received by (Signature):	Date Time	Printed Name & Agent
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name
Comments & Special Instructions		QA/QC Type:	Number & Type of Containers:	Preservatives:	Temp:

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09/03/2004

Custody Document: S5162

Received: 09/02/2004 15:37
Sampled by: Bruce Bline

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5162-1
Client Sample ID: SB-14 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Collected: 09/01/2004 14:30
% Solid: 87.7%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -51	2.33	2.33	ppb	U
11104-28-2	PCB 1221	G 759 -51	10.9	10.9	ppb	U
11141-16-5	PCB 1232	G 759 -51	2.43	2.43	ppb	U
53469-21-9	PCB 1242	G 759 -51	1.82	1.82	ppb	U
12672-29-6	PCB 1248	G 759 -51	4.10	4.10	ppb	U
11097-69-1	PCB 1254	G 759 -51	6.21	6.21	ppb	U
11096-82-5	PCB 1260	G 759 -51	7.14	7.14	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-51	66.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-51	89.9 %	(30 - 150)	

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09/03/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5162-2

Client Sample ID: SB-16 (1-3)
Matrix: Soil Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Collected: 09/01/2004 15:00
% Solid: 89.4%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -52	2.28	2.28	ppb	U
11104-28-2	PCB 1221	G 759 -52	10.7	10.7	ppb	U
11141-16-5	PCB 1232	G 759 -52	2.38	2.38	ppb	U
53469-21-9	PCB 1242	G 759 -52	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 759 -52	4.03	4.03	ppb	U
11097-69-1	PCB 1254	G 759 -52	6.10	6.10	ppb	U
11096-82-5	PCB 1260	G 759 -52	7.00	7.00	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-52	71.7 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-52	81.3 %	(30 - 150)	

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09/03/2004

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

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Q - Qualifier specific entries and their meanings are as follows:

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M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

ETL
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631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

S 5162

CLIENT COPY

Project Name: Con Ed Maspeth | Project Manager: David Hill

Sampler (Signature): [signature] (Print): Bruce P Bline

Project Address: 55-77 Rust St, Maspeth, Queens, NY

Client Jacques Whitford J/N: ☒ Rush by 9/13/04

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH								
1	9/1/04	1430	G	S	SB - 14 (1-3)	1						X												
2	9/1/04	1500	G	S	SB - 16 (1-3)	1						X												
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								

Relinquished by (Signature): [signature]	Date 9/2/04 Time 1250	Printed Name & Agent: Bruce P Bline Jacques Whitford	Received by (Signature): [signature]	Date 9/2/04 Time 2:50	Printed Name & Agent [signature]
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name
Comments & Special Instructions Level 3 Analysis / NYS ASP METHODS		QA/QC Type: CAT B Deliverables	Number & Type of Containers:	Preservatives:	Temp:

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/13/2004

Custody Document: S5163

Received: 09/02/2004 15:07
Sampled by: Bruce Bline

Client: Jacques Whitford Co., Inc.
5 West Main Street - Suite 109
Elmsford,
NY 10523

Project: Con Ed Maspeth

55-77 Rust Avenue
Maspeth,
NY

Manager: David Hill

Respectfully submitted,

Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
NH Cert. # 252592-BA
RI Cert. # 161

Environmental Testing Laboratories, Inc.
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Phone - 631-249-1456 Fax - 631-249-8344

09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-1
Client Sample ID: SB-12 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Collected: 09/02/2004 08:40
% Solid: 91%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -54	2.24	2.24	ppb	U
11104-28-2	PCB 1221	G 759 -54	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 759 -54	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -54	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -54	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -54	5.99	5.99	ppb	U
11096-82-5	PCB 1260	G 759 -54	6.88	**275**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-54	68.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-54	86.2 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-1MS

Client Sample ID: SB-12 (1-3) MS
Collected: 09/02/2004 08:40
Matrix: Soil
Type: Matrix Spike
% Solid: 91%
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -55	2.24	**201**	ppb	
11104-28-2	PCB 1221	G 759 -55	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 759 -55	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -55	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -55	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -55	5.99	5.99	ppb	U
11096-82-5	PCB 1260	G 759 -55	6.88	**421**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-55	59.1 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-55	86.3 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-1MSD

Client Sample ID: SB-12 (1-3) MSD
Matrix: Soil
Type: Matrix Spike Dup
Collected: 09/02/2004 08:40
% Solid: 91%
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -56	2.24	**180**	ppb	
11104-28-2	PCB 1221	G 759 -56	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 759 -56	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -56	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -56	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -56	5.99	5.99	ppb	U
11096-82-5	PCB 1260	G 759 -56	6.88	**404**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-56	58.3 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-56	73.8 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-2
Client Sample ID: Equip Blank
Collected: 09/02/2004 08:55
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/02/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	G 759 -53	0.080	0.080	ppb	U
11104-28-2	PCB 1221	G 759 -53	0.030	0.030	ppb	U
11141-16-5	PCB 1232	G 759 -53	0.11	0.11	ppb	U
53469-21-9	PCB 1242	G 759 -53	0.11	0.11	ppb	U
12672-29-6	PCB 1248	G 759 -53	0.090	0.090	ppb	U
11097-69-1	PCB 1254	G 759 -53	0.040	0.040	ppb	U
11096-82-5	PCB 1260	G 759 -53	0.080	0.080	ppb	U

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-53	43.3 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-53	87.7 %	(30 - 150)	

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208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-3
Client Sample ID: SB-17 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004
Collected: 09/02/2004 09:05
% Solid: 93%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -57	2.19	2.19	ppb	U
11104-28-2	PCB 1221	G 759 -57	10.3	10.3	ppb	U
11141-16-5	PCB 1232	G 759 -57	2.29	2.29	ppb	U
53469-21-9	PCB 1242	G 759 -57	1.72	1.72	ppb	U
12672-29-6	PCB 1248	G 759 -57	3.87	3.87	ppb	U
11097-69-1	PCB 1254	G 759 -57	5.86	5.86	ppb	U
11096-82-5	PCB 1260	G 759 -57	6.73	6.73	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-57	64.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-57	75.4 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-4
Client Sample ID: SB-18 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004
Collected: 09/02/2004 09:15
% Solid: 89.2%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -58	2.29	2.29	ppb	U
11104-28-2	PCB 1221	G 759 -58	10.8	10.8	ppb	U
11141-16-5	PCB 1232	G 759 -58	2.39	2.39	ppb	U
53469-21-9	PCB 1242	G 759 -58	1.79	1.79	ppb	U
12672-29-6	PCB 1248	G 759 -58	4.04	4.04	ppb	U
11097-69-1	PCB 1254	G 759 -58	6.11	6.11	ppb	U
11096-82-5	PCB 1260	G 759 -58	7.02	**65.7**	ppb	

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-58	63.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-58	82.9 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-5

Client Sample ID: SB-13 (1-3)
Collected: 09/02/2004 09:30
Matrix: Soil
Type: Grab
% Solid: 93%
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -59	2.19	2.19	ppb	U
11104-28-2	PCB 1221	G 759 -59	10.3	10.3	ppb	U
11141-16-5	PCB 1232	G 759 -59	2.29	2.29	ppb	U
53469-21-9	PCB 1242	G 759 -59	1.72	1.72	ppb	U
12672-29-6	PCB 1248	G 759 -59	3.87	3.87	ppb	U
11097-69-1	PCB 1254	G 759 -59	5.86	5.86	ppb	U
11096-82-5	PCB 1260	G 759 -59	6.73	6.73	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-59	51.4 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-59	67.6 %	(30 - 150)	

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-6

Client Sample ID: SB-22 (1-3) | Collected: 09/02/2004 10:00
Matrix: Soil | Type: Grab | % Solid: 94.2%
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -60	2.17	2.17	ppb	U
11104-28-2	PCB 1221	G 759 -60	10.2	10.2	ppb	U
11141-16-5	PCB 1232	G 759 -60	2.26	2.26	ppb	U
53469-21-9	PCB 1242	G 759 -60	1.70	1.70	ppb	U
12672-29-6	PCB 1248	G 759 -60	3.82	3.82	ppb	U
11097-69-1	PCB 1254	G 759 -60	5.79	5.79	ppb	U
11096-82-5	PCB 1260	G 759 -60	6.65	**46.9**	ppb	Y

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-60	84.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-60	71.7 %	(30 - 150)	

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-7

Client Sample ID: SB-20 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004
Collected: 09/02/2004 10:15
% Solid: 90.4%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -61	2.26	2.26	ppb	U
11104-28-2	PCB 1221	G 759 -61	10.6	10.6	ppb	U
11141-16-5	PCB 1232	G 759 -61	2.36	2.36	ppb	U
53469-21-9	PCB 1242	G 759 -61	1.77	1.77	ppb	U
12672-29-6	PCB 1248	G 759 -61	3.98	3.98	ppb	U
11097-69-1	PCB 1254	G 759 -61	6.03	6.03	ppb	U
11096-82-5	PCB 1260	G 759 -61	6.92	6.92	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-61	73.4 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-61	93.8 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-8
Client Sample ID: SB-9 (1-3)
Matrix: Soil
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/03/2004

Collected: 09/02/2004 10:55
% Solid: 91%

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration*	Units	Q
12674-11-2	PCB 1016	G 759 -62	2.24	2.24	ppb	U
11104-28-2	PCB 1221	G 759 -62	10.5	10.5	ppb	U
11141-16-5	PCB 1232	G 759 -62	2.34	2.34	ppb	U
53469-21-9	PCB 1242	G 759 -62	1.76	1.76	ppb	U
12672-29-6	PCB 1248	G 759 -62	3.96	3.96	ppb	U
11097-69-1	PCB 1254	G 759 -62	5.99	5.99	ppb	U
11096-82-5	PCB 1260	G 759 -62	6.88	6.88	ppb	U

* Results are reported on a dry weight basis

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G759-62	74.0 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G759-62	68.9 %	(30 - 150)	

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09/13/2004

PCB Aroclors by SW846 8082/EPA 608

Sample: S5163-9
Client Sample ID: Expansion Joint
Collected: 09/02/2004 12:10
Matrix: Solid
Type: Grab
Remarks:
Analyzed Date: 09/03/2004
Preparation Date(s) : 09/09/2004

Analytical Results

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	G 761 -18	40.8	40.8	ppb	U
11104-28-2	PCB 1221	G 761 -18	192	192	ppb	U
11141-16-5	PCB 1232	G 761 -18	42.6	42.6	ppb	U
53469-21-9	PCB 1242	G 761 -18	32.0	32.0	ppb	U
12672-29-6	PCB 1248	G 761 -18	72.0	72.0	ppb	U
11097-69-1	PCB 1254	G 761 -18	109	109	ppb	U
11096-82-5	PCB 1260	G 761 -18	125	**4830**	ppb	

Surrogate Results

Cas No	Analyte	File ID	% Recovery	QC Limits	Q
2051-24-3	DECACHLOROBIPHENYL	G761-18	46.5 %	(30 - 150)	
877-09-8	TETRACHLORO M-XYLENE	G761-18	96.7 %	(30 - 150)	

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09/13/2004

CASE NARRATIVE

PCB ANALYSIS

Sample #9 looks to be tar. Ttherefore, extraction was performed without spiking surrogate. We have added surrogate to the extract to monitor instrument responde.

09/13/2004

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is not detected above the Method Detection Limit (MDL). All MDL's are lower than the lowest calibration standard concentration.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit (MDL).

Y - Indicates an estimated value. The concentration reported was detected below the lowest calibration standard concentration.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag indicates a system monitoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected above the Method Detection Limit (MDL) which is less than the lowest calibration standard concentration.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA
AS - Semi-automated Spectrophotometric
AV - Automated Cold Vapor AA
C - Manual Spectrophotometric
F - Furnace AA
P - ICP
T - Titrimetric

OTHER QUALIFIERS

ETL
Environmental Testing Laboratories, Inc.
208 Route 109 • Farmingdale • New York 11735
631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

S 5163

Project Name: Con Ed Maspeth	Project Manager: DAVID Hill	Sampler (Signature): [signature] (Print): Bruce P Bline
Project Address: 55-77 Rust St Maspeth, Queens NY		
Client JACQUES Whitford J/N:	☑ Rush by 9/13/04	

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH	ASBESTOS
1	9/2/04	840	G	S	SB-12 (1-3)	1						X					
2	9/2/04	855	G	L	EQUIP BLANK	1						X					
3	9/2/04	905	G	S	SB-17 (1-3)	1						X					
4	9/2/04	915	G	S	SB-18 (1-3)	1						X					
5	9/2/04	930	G	S	SB-13 (1-3)	1						X					
6	9/2/04	1000	G	S	SB-22 (1-3)	1						X					
7	9/2/04	1015	G	S	SB-20 (1-3)	1						X					
8	9/2/04	1055	G	S	SB-9 (1-3)	1						X					
9	9/2/04	1210	G	S	EXPANSION JOINT	1						X					X
10																	
11																	
12																	
13																	
14																	
15																	

Relinquished by (Signature): [signature]	Date 9/2/04 Time 1250	Printed Name & Agent: Bruce P Bline Jacques Whitford	Received by (Signature): [signature]	Date Time	Printed Name & Agent
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name
Comments & Special Instructions: Level 3 Analysis / NYS ASP Methods		QA/QC Type: Cat B Deliverables	Number & Type of Containers:	Preservatives:	Temp:

CLIENT COPY

ProScience Analytical Services, Inc

Donald Moore
Jacques Whitford Company, Inc. NH
27 Congress St.
P.O. Box 4696
Portsmouth, NH 03801

September 10, 2004

Dear Donald Moore,

The enclosed analytical results have been obtained using the NY-ELAP "Method for Identifying and Quantifying Asbestos in Bulk Sample By Polarized Light Microscopy". The point count is used for quantifying the asbestos content. The NY State method requires that any organically bounded materials to be ashed and acid treated in order to eliminate portion of the matrix before samples are analyzed using Polarized Light Microscopy. The weight of sample must be reported for each step and the final result is reported as weight %.

The enclosed results may not be used under any circumstances as product endorsement by the NY State, any US government agency or NVLAP.

The Quality Control data related to the samples analyzed is available upon written request from the client. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination occurred during sample collection or erroneous data provided by the client.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of three months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or Laboratory Director.

Sincerely,

Valerica Hanna

Valerica Stanca, Optical Asbestos Manager
Adrian Stanca, Laboratory Director

Enclosure:
BATCH NUMBER : N 28014 CLIENT PROJECT ID: NHP03321/S5285
Client #: 570
NVLAP ID# 200090-0; CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056;
AIHA ID# 102754; VT ID# AL016876; PH ID# 218(TEM,PLM); ELAP ID# 11632; RI ID# 186.

ProScience Analytical Services, Inc

Client #: 570
Client Project: Environmental Testing Laboratories, Inc.
Client Reference: N/A
Client Name: Jacques Whitford Company, Inc. NH
Method: NY ELAP Method For The Analysis of Non Friable Organically Bound Materials

Batch: N 28014
Date Sampled: N/A
Date Received: 9/9/2004
Date Analyzed: 9/10/2004
Date of Report: 9/10/2004

LAB ID	Field ID	Color	Initial Sample Weight	% Asbestos Types						% ORG	% Carbonate	Total % Asbestos	% Non Fib. / Non Asb.
				Chrysotile	Amosite	Actinolite	Crocidolite	Anthophyllite	Tremolite				
N271649	0404922-09	Black	2.3276	3.67	.00	.00	.00	.00	.00	94.35	1.07	3.67	.91

Description: Bulk
Location: S5163-9
Comments:

Analyzed / Charged : Yes
Preped / Charged : No

Stefanie Bishop

Stefanie Bishop, Analyst

N28014

ETL

Environmental Testing Laboratories, Inc.
208 Route 109 • Farmingdale • New York 11735
631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

~~PO #~~

24 HR

S 5285

Project Name: | Project Manager: DONALD MOORE | Sampler (Signature): | (Print):

Project Address: Jacques Whitford

Client | J/N: | ☐ Rush by / /

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol (Liters) include: Flow (CFM)

Analyses: 601/602, BTX/BTEX, MTBE, 624/8260/8021, 625/8270/BN, PCB/Pesticides, Pet.Prods./8100M, RCRA Metals, pH/Flash/React, 418.1 - TRPH, ASBESTOS

ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.
1	9/2/4	1210	G	solid	040922-09/S5163-9	1
2						
3						
4	EPA INTERIM METHOD FOR THE DETERMINATION OF ASBESTOS IN BULK					
5	INSULATION SAMPLE (PLM METHOD)					
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

NOB

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received by (Signature):	Date / Time	Printed Name & Agent
[signature]	Date 9-8-4 Time 1500	C. Roretti		Date Time	
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time	Printed Name

Comments & Special Instructions	QA/QC Type:	Number & Type of Containers:	Preservatives:	Temp:
		1 - 8 oz		

OFFICE COPY