3-PHASE ELECTRICAL RESISTIVE SOIL HEATING/ VAPOR EXTRACTION SYSTEM INTERIM REMEDIAL MEASURE CONSTRUCTION COMPLETION REPORT

DeWalt Service Center
56-15 Queens Boulevard
Woodside, New York

NYSDEC Site Number: C241129

October 2013
Revised January 2014

Prepared for

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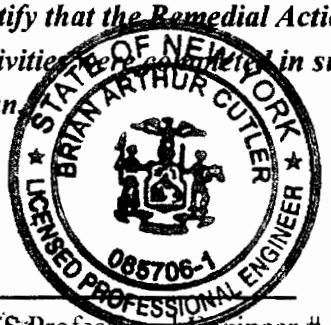
Comm. No. 07MD0.12

CERTIFICATION

I Brian A. Cutler certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan.



NYS Professional Engineer #	Date	Signature
	10/4/13	

Loureiro

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ACRONYMS

AOC	Area of Concern
CAMP	Community Air Monitoring Plan
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	Environmental Protection Agency
ET-DSP™	Electro Thermal Dynamic Stripping Process
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
LCI	Loureiro Contractors, Inc.
LEA	Loureiro Engineering Associates, Inc.
MPE	Multi-Phase Extraction
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
PID	Photo-ionization Detector
PGW	Protection of Groundwater
PM	Particulate Matter
PPE	Personal Protective Equipment
PPH	Protection of Public Health
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
SCOs	Soil Cleanup Objectives
SVE	Soil Vapor Extraction
TCA	1,1,1-Trichloroethane
TCE	Trichloroethylene
VOCs	Volatile Organic Compounds

UNITS

fbg	feet below ground
µg/kg	micrograms per kilogram
$\mu g/m^3$	micrograms per cubic meter
ppm	parts per million

1. INTRODUCTION

Loureiro Engineering Associates, Inc. (LEA) was retained by Black & Decker (U.S.), Inc. (Black & Decker) to install a remediation system as an interim remedial measure (IRM) for volatile organic compounds (VOCs) impacted soils beneath the eastern portion of the parking lot of the DeWalt, Delta Porter-Cable (DeWalt) Service Center at 56-15 Queens Boulevard in Woodside, New York (hereinafter referred to as "the Site"). LEA delegated this work to be performed by Loureiro NY, PC (Loureiro NY), organized and doing business under the laws of the State of New York. A Site Location Map is included as Figure 1-1. The IRM was completed using a three-phase electrical resistive soil heating / soil vapor extraction (SVE) system as specified in the Remedial Action Work Plan submitted to New York State Department of Environmental Conservation (NYSDEC) in November 2009. A copy of the work plan and NYSDEC approval letter dated March 4, 2010 is presented in Appendix A. The remediation system footprint is depicted on Drawing 1-1.

This report provides a summary of the construction and installation activities, health and safety measures that were followed during the construction process, operation and maintenance of the system, and the results of post-remediation soil sampling that was conducted to evaluate the effectiveness of the remedial measure.

1.1 Site Description

The Site is located at 56-15 Queens Boulevard, Woodside, New York. The Site is designated by the New York City Department of Finance, Office of the City Register within Queens Borough and is identified as Block 1329, Lot 1. The Site is located on the north side of Queens Boulevard, at the northwest corner of the intersection of Queens Boulevard and 57th Street. The area surrounding the Site includes commercial and residential properties and is located in an area zoned *R7X*, for Residential and *C2-5,* for Commercial. The site location, local topography, nearby water bodies, surrounding properties, and major access routes are shown in Figure 1-1.

The Site is a 0.37-acre parcel improved by an approximately 6,000-square foot single-story, brick building. The building is situated on the southern portion of the Site. A paved parking lot is located north of the building. Access to the parking lot is provided along Queens Boulevard and 57th Street. A chain-link fence borders the parking lot to the north and east.

The Site is currently used by Black & Decker as a DeWalt power tool service center and factory store. The 6,000-square foot building was constructed in 1954, at which time it was solely occupied by DeWalt. DeWalt's historical operations involved limited spray painting and

machining operations that utilized two trichloroethylene (TCE) based degreasers. Waste oil was generated from machining activities.

An electrical fire occurred in the building in approximately 1994, after which time the building remained closed for repairs and renovations for a period of approximately two months. The renovations to the building included the construction of an interior wall to divide the building to accommodate: (i) the DeWalt service center and store, occupying approximately 4,300-square feet (sq ft); and (ii) a beauty supply store, Royal Beauty Supply, occupying approximately 1,700-sq ft of leased building space. Royal Beauty Supply terminated their lease with Black & Decker and vacated the building in 2008. DeWalt now occupies the entire building. From 1948 until at least 1951, a used truck sales company was operated in the western portion of the Site. Prior to 1948, the Site appears to have been undeveloped.

LEA conducted a Phase I Environmental Site Assessment of the property in 2008 that identified six areas of concern (AOCs) described as follows:

- AOC 1: Abandoned underground storage tank system
- AOC 2: Former degreasing, spray paint, and waste oil storage areas
- AOC 3: Concrete drainage pit
- AOC 4: Parts washer and shipping/receiving area
- AOC 5: Former truck sales operation
- AOC 6: Potential contamination from off-site sources

Additional details pertaining to each AOC are provided in the Phase I Report by LEA dated July 2008. During the subsurface investigations that followed, a dry well was discovered beneath a low-lying asphalt patched portion of the parking lot. The dry well was designated as AOC 7 and is discussed in further detail in the Remedial Investigation Report by LEA dated April 2009.

Between March 2008 and March 2009, extensive subsurface investigations were conducted to evaluate each AOC, including a VOC release area discovered beneath the eastern portion of the parking lot. Chlorinated VOCs such as 1,1,1-trichloroethane (TCA) and TCE were detected in soil at concentrations that exceeded the NYSDEC Soil Cleanup Objectives (SCOs). A release was reported to NYSDEC in November 2008 and Spill Number 0811202 was assigned. In June 2009, Black & Decker and NYSDEC entered into a Non-Petroleum Stipulated Agreement to remediate the release area. A Remedial Action Work Plan (RAWP) was submitted to NYSDEC

in November 2009 detailing plans for cleanup at the Site. The RAWP was approved in a letter dated March 4, 2010, a copy of which is provided as Appendix A. On June 7, 2011, after the IRM was initiated, the Site was transferred into the Brownfield Cleanup Program.

1.2 Summary of Contamination

As described in the paragraphs below, chlorinated solvents were detected in soil vapor and soil in the vicinity of an abandoned dry well that was identified during investigations at the Site. Residual liquids in the dry well were analyzed and found to contain chlorinated VOCs. The dry well was present at a depth of approximately 5 feet below grade (fbg) to 9.5 fbg and was discovered below a low-lying asphalt patched area in the eastern portion of the parking lot (AOC 7). The dry well was discovered at a location where the highest concentrations of VOCs had been detected in soil and soil vapor samples during the Remedial Investigation. A six-inch diameter pipe extending in a southerly direction from the dry well was found to terminate within approximately five feet of the site building, as depicted on Drawing 1-1. The highest concentrations of VOCs were detected in soil samples from directly below the dry well at 10 fbg to 20 fbg. The concentrations of VOCs were found to decrease with depth and were three orders of magnitude lower in samples collected at 20 fbg to 25 fbg.

The paragraphs below provide a brief summary of the three-dimensional extent of VOCs in soil. The dry well release area has been fully characterized and is documented in the Supplemental Remedial Investigation Report by LEA.

Soil

Analytical results from soil borings completed during the Remedial Investigation indicate that the most heavily impacted soils were limited to within an approximately 10 foot radius of the former dry well. The highest concentrations of TCE, TCA, and other VOCs were detected in samples from soil boring SB-013, which was completed adjacent to the former dry well. TCA was detected in the 15 to 17.5 fbg sampling interval at a maximum concentration of 1,400,000 micrograms per kilogram (µg/kg). The sample collected at 10 to 13 fbg contained TCE at a maximum concentration of 9,700,000 µg/kg. Vinyl chloride was also detected in this sample at a maximum concentration of 1,700 µg/kg. VOCs were detected in soil to a maximum depth of 32 fbg. As noted above, analytical results for samples collected directly below the dry well were at least three orders of magnitude higher in concentration than those collected at greater depths.

The concentrations of TCE in soil samples from boring SB-013 were indicative of dense non-aqueous phase liquid (DNAPL); however, DNAPL was not observed during the investigations conducted at the Site.

The concentration of TCE, TCA, vinyl chloride, and a number of other VOCs within the former dry well area exceeded the NYSDEC Restricted Use, Restricted-Residential Protection of Public Health (PPH), and the Protection of Groundwater (PGW) SCOs. Certain VOCs exceeding PGW SCOs were detected up to 25 feet south of the release point in samples collected between the dry well and site building.

Soil Vapor

The highest concentrations of TCE and TCA in soil vapor within AOC 7 were detected at 83,000 micrograms per cubic meter ($\mu g/m^3$) and 160,000 $\mu g/m^3$, respectively. Associated degradation products, including *cis*-1,2-dichloroethylene, *trans*-1,2-dichloroethylene, 1,1-dichloroethylene, and 1,1-dichloroethane, were also detected at elevated concentrations within AOC 7, by comparison with soil vapor results for other areas of the Site.

1.3 Summary of Previous Remedial Activities

In March 2010, a separate IRM was conducted to remove the concrete dry well structure described in Section 1.2. The dry well, associated piping, and a limited volume of soil surrounding the former dry well structure was excavated to a depth of 15 fbg. The goal of the IRM was to remove the most heavily impacted soil prior to conducting *in-situ* remediation. The activities associated with the dry well / source area soil removal IRM are documented under a separate Construction Completion Report.

2. DESCRIPTION OF REMEDY

This section summarizes the goals and implementation of the thermally-enhanced SVE IRM. As previously stated, the IRM was implemented in accordance with the NYSDEC approved Remedial Action Work Plan submitted by LEA in November 2009. The thermally-enhanced SVE system operated from August 2010 through July 2011.

2.1 Remedial Action Objectives

The objective of using thermally-enhanced SVE was to remediate VOCs in soil to concentrations that would be protective of human health and the environment, recognizing that the intended uses of the property might include residential developments. The following Remedial Action Objectives (RAOs) were identified for this IRM .

Soil RAOs for Public Health Protection

- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

Soil RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination

The goal of IRM was to reduce the concentration of VOCs in soil to below the PGW SCOs established under 6 New York Codes, Rules, Regulations Part 375-6.8(b). It should be noted the upper 15-feet of the soil within the release area was previously excavated under a separate IRM for soil that exceeded the Restricted Use, Residential PPH SCOs. Because the Site is located in an urban setting, is completely covered by the building and asphalt pavement, is not located in or adjacent to areas defined as wetlands, containing endangered or threatened animals or plants, animals of special concern, rare plants, or significant natural communities, the Protection of Ecological Resources SCOs do not apply.

2.2 Description of Interim Remedial Measure

The VOC-impacted soils that remained at concentrations that exceed the SCOs following the March 2010 dry well excavation IRM were treated with three-phase electrical resistive heating in conjunction with a vapor extraction system. This thermally-enhanced SVE process is also referred to as Electro Thermal Dynamic Stripping Process (ET-DSP^{TM}). The ETP-DSP^{TM} involved the installation of an array of electrodes below the ground surface which used electrical heating to promote volatilization. The ET-DSP^{TM} includes the use of steam to increase

permeability and enhanced the dynamic stripping effect for contaminants that may not be conducive to removal using conventional extraction technologies. The electrodes were also designed with a fluid injection capability, which served a dual purpose. The injected water prevented overheating of the electrodes and also allowed some of the injected water to flow from the electrodes towards the multi-phase extraction (MPE) wells. The heat transported by fluid movement in the subsurface helped heat the soil rapidly and uniformly. Once the VOCs in soil were volatilized, the resulting vapors were extracted from the subsurface through a series of MPE wells that were interspersed among the electrodes. The extracted vapors were brought to the surface and treated using a refrigerated glycol heat exchanger and a refrigerated chiller system. The liquids generated through ET-DSP^{TM} were pumped to the surface and treated using an air stripper and granular-activated carbon units prior to discharge to the sanitary sewer. The system components are shown in plan view on Drawing 1-1. A process flow diagram is provided as Figure 2-1.

3. CONSTRUCTION OVERSIGHT AND PERMITTING

This section summarizes the parties involved in the construction of the IRM and the permits that were obtained from federal, state, and local agencies.

3.1 Contractors and Consultants

Remedial activities at the Site were overseen by Loureiro NY on behalf of Black & Decker. Construction services were provided by Loureiro Contractors, Inc., a wholly owned subsidiary of LEA. Subcontractors were utilized as necessary to ensure successful completion of the project. A list of subcontractors and their associated tasks is provided below.

- Delta Geophysics of Catasauqua, Pennsylvania
    - Conducted underground utility locating using ground-penetrating radar and other techniques.
- McMillan-McGee Corporation of Alberta, Canada
    - Manufactured ET-DSP™ system components. Oversaw installation of ET-DSP™ system and conducted testing to verify successful operation. Also provided on-site and remote system support.
- Boart Longyear of Marietta, Ohio
    - Advanced boreholes for vertical, sub-grade system components (electrodes, multi-phase extraction wells, and temperature sensors) and installed down-hole components under McMillan's supervision.
- Loureiro Contractors, Inc. of Plainville, Connecticut
    - Performed excavation, trenching, and site restoration activities.
- Frederick R. Pokorny of Huntington, New York
    - Provided surveying services as a New York-licensed land surveyor.

3.2 Permits

Prior to the start of remedial activities, all necessary permits identified in the RAWP were obtained from various federal, state, and local agencies.

Documentation of federal, state, and city approvals required by the RAWP is included in Appendix B. All State Environmental Quality Review Act requirements and all substantive compliance requirements for attainment of applicable natural resource or other permits were achieved during this Remedial Action.

The specific federal, state, and city requirements that were fulfilled are discussed in Sections 3.2.1 through 3.2.3 below.

3.2.1 Federal Requirements

The use of electrodes required authorization by the United States Environmental Protection Agency (EPA). The electrodes were considered underground injection wells because municipal water was pumped into the subsurface. Once the electrodes were registered with EPA, LEA was automatically authorized to operate the electrodes as part of the remediation system. An Inventory of Underground Injection Wells form was completed and submitted to EPA electronically on April 22, 2010. The form was received by EPA and the Site was "Authorized by Rule" in an electronic submission sent by EPA on May 5, 2010.

No additional federal requirements were identified.

3.2.2 State Requirements

The remedial action was conducted under a Stipulated Agreement between Black & Decker and NYSDEC that was entered into in June 2009. Under the stipulated agreement, Black & Decker was not required to obtain any State permits to implement the selected remedy. As previously indicated, a RAWP for thermally-enhanced SVE was approved by NYSDEC in a letter dated March 4, 2010.

With regard to air discharges from the thermal-enhanced SVE system, any installation with an emission rate potential to exceed 0.50 pounds per hour of total VOCs requires air pollution controls by regulation. The remediation system for the Site was designed for compliance with the maximum emission rate of 0.50 pounds of VOCs per hour. Compliance with air regulations was demonstrated through routine monitoring of emissions. No additional state requirements were identified.

3.2.3 City Requirements

Approval was obtained from the New York City Department of Environmental Protection (NYCDEP) to allow for the discharge of treated water to the city sanitary sewer. As a

prerequisite to obtaining the approval, field representatives of the NYCDEP conducted a dye test on May 27, 2010 to confirm that the proposed discharge would be directed to a viable sewer line. In an approval letter dated December 1, 2010, under Permit Number C-4825, NYCDEP authorized the discharge of treated groundwater to the municipal sanitary sewer system.

A permit was also obtained from New York City Department of Buildings to erect a wooden fence around the above grade components of the remediation system. Permit number 420179595-01-EQ-FN was issued for construction of the fence on June 16, 2010.

No additional city requirements were identified. Copies of the aforementioned permits and approvals are provided in Appendix B.

4. ANCILLARY IRM ELEMENTS

This section summarizes the activities that were conducted in support of the IRM such as health and safety, site controls, air monitoring, and reporting.

4.1 Health & Safety

A site-specific health & safety plan (HASP) was submitted as an appendix to the RAWP. The HASP identified the roles and responsibilities of field personnel, the job hazards associated with each major task, hazard mitigation measures, site management controls, decontamination procedures, and emergency plan controls.

4.2 Community Air Monitoring Plan

The Community Air Monitoring Plan (CAMP) was implemented prior to the start of excavation activities. The purpose of the CAMP is to define the safety measures and procedures necessary to limit the potential for site workers, visitors, and members of the surrounding community to be exposed to airborne contaminants. The measures implemented during remediation activities included real-time air monitoring for dust, mists, and aerosols (particulate matter (PM)) and VOCs.

Continuous monitoring for PM and VOCs was conducted at one location that was upwind of the construction area and at one location that was downwind of the construction area at the property boundary. The monitoring equipment was set at a height of approximately four to five feet above the ground surface to measure the air concentrations within the breathing zone of an average adult. The dust meter was set to alarm if average PM_{10} particulate levels (averaged over a 15-minute period) were 100 $\mu g/m^3$ higher than established background (upwind perimeter) concentrations. The photoionization detector (PID) was set to alarm if average total VOCs (averaged over a 15-minute period) were 5 parts per million (ppm) or higher.

PID readings remained below 5 ppm throughout the course of the project. The 15-minute average particulate level recorded from the downwind monitoring station only exceeded the 100 $\mu g/m^3$ threshold on seven occasions. In all but one instance, the particulate level decreased below 100 $\mu g/m^3$ during the following 15-minute interval. Loureiro NY directed construction activities to stop in all cases when visible dust was emanating from the work area.

4.3 Site Preparation

Prior to commencing construction activities, a site layout depicting the work area and the emergency evacuation route was approved by the DeWalt store manager. The entrance along 57th Street was closed to prevent customers, pedestrians, or vehicles from entering the work zone. The eastern half of the rear parking lot was restricted to workers and other authorized personnel for duration of the construction period.

Mr. Fred Pokorny, a New York Licensed Surveyor, was contracted by LEA to perform the pre-construction survey. Underground utility locating was performed by Delta Geophysics of Catasaqua, Pennsylvania prior to the start of ground breaking activities. One-Call, the local utility mark-out agency, was also contacted to identify any utilities that entered the Site.

4.4 General Site Controls

Specific control measures related to site security and record keeping are discussed in this section.

4.4.1 Site Security

The work zone, which consisted of the eastern half of the parking lot, was demarcated clearly with cones and the 57th Street entrance was closed to vehicle and pedestrian access. The parking lot was secured within a chain link fence. The two sets of gates, at the Queens Boulevard and 57th Street entrances, were locked at the end of the work day to prevent pedestrians from entering the work zone after hours.

4.4.2 Record Keeping

The site-specific HASP was maintained on-site at all times. All site personnel, as well as individuals that visited the Site, were required to sign the Health & Safety Acceptance Form that was included as Appendix A of the HASP. The emergency management plan, list of emergency contacts, directions to the hospital, and material safety data sheets were all maintained in the HASP binder.

Each morning, the Loureiro NY Health & Safety Officer conducted a daily health and safety briefing to go over relevant job hazards and to layout the scope of work to be completed that day. The following topics were discussed during the daily health and safety briefings, as appropriate:

- The level of personal protective equipment (PPE) required for each task and the decontamination procedures to be utilized.
- The monitoring requirements and threshold levels that require a change in PPE.

- A review of emergency procedures to be instituted in the event of an accident or incident, including but not limited to personnel responsibilities, communications, first aid, and reporting procedures.

- A review of the adequacy of the health and safety measures and procedures to be, noting any deficiencies in the health and safety program or in worker compliance with the program.

All personnel who performed intrusive site work involving potential exposure to the site chemical hazards met all of the Occupational, Safety, and Health Administration training requirements for Hazardous Waste Operations and Emergency Response, found in Title 29, Part 1910.120 of the Code of Federal Regulations.

4.5 Reporting

The work conducted on Site each day was documented in Daily Field Reports. Status updates were also provided to Ms. Jennifer Kann, the NYSDEC project manager, via phone or email on a regular basis.

5. CONSTRUCTION, OPERATION AND DECOMMISSIONING OF REMEDIATION SYSTEM

This section summarizes the process for installing, monitoring, and decommissioning the remediation system.

5.1 Overview of the Installation Process

A thermally-enhanced SVE system was installed between March 2010 and May 2010. Construction activities included the installation of electrodes, MPE wells, and temperature sensors, connection of these components through a network of trenches, connection of the above grade system components, installation of an effluent discharge line to the City sanitary sewer, and coordination of the installation of a temporary electricity service connection with ConEdison.

First the vertical, subgrade components, which include the electrodes, MPE wells, and temperature sensors, were installed within the remediation area. The electrical lines, water supply and return lines for the electrodes, and the communication lines for the temperature sensors were buried in trenches leading to the remediation compound. The MPE wells were also connected to two main fiberglass piping laterals that were buried in trenches leading to the fenced remediation compound shown on Drawing 1-1. The layout of the electrodes, MPE wells, temperature sensors, and trenching network is shown in Drawing 1-1. A cross-section that details how the various wiring, supply and return lines, and other subgrade components were installed within trenches is provided on Drawing ~~3-1~~ 2-1.

This section provides details regarding the installation of the remediation system.

5.2 Surveying

All electrodes, MPE wells, and temperature sensors were located via survey to a horizontal and vertical datum that had been established for the Site. All survey information used to locate sampling points and other pertinent features on the Site were transferred to AutoCAD® drawings which served as the base maps for data presented in this report. Surveyed locations are shown on Drawing 1-1.

5.3 Drilling Activities

A Rotosonic drill rig was used to advance boreholes for each of the ten electrodes (E-01 through E-010), the seven MPE wells (X-01 through X-07), and the four Digitam temperature sensor

work day to control dust and to minimize odors. The CAMP was also used to ensure that the construction activities were not impacting the surrounding community with regard to dust and VOC emissions.

5.4 Electrode Installation

A total of twenty 8-inch diameter electrodes were installed within the release area in a roughly diamond-shaped pattern. The electrodes are 10-feet long by 8-inches in diameter and weigh approximately 125 pounds. Two electrodes were installed within each borehole; the lower electrode was installed from approximately 23 fbg to 33 fbg and the upper electrode was installed from approximately 5 fbg to 15 fbg. A 10/20 graded silica sand was tremmied into the annular space to within approximately 2 inches below the electrode. The annular space surrounding each electrode was then filled with granular graphite. A bentonite seal was placed above the granular graphite and the remainder of the borehole was backfilled to grade using a cement grout. The electrode completion logs are included in Appendix E.

5.5 Multi-Phase Extraction Well Installation

A total of seven 2-inch diameter MPE-wells were installed within the release area. Each MPE well consists of 2-inch diameter continuous wire wrap 0.010 slotted stainless steel screen installed from 5 fbg to 35 feet fbg and a 2-inch diameter stainless steel riser installed from 5 fbg to 2 fbg. A filter pack consisting of 20/30 graded silica sand was installed to approximately one foot above each well screen. A one-foot thick 45/5 graded silica sand seal was placed above the 20/30 sand filter pack. The remainder of the borehole was finished to grade using high temperature grout. Extraction well completion logs are included in Appendix E.

5.6 Digitam Drop Tube Temperature Sensor Installation

Four temperature sensor wells were installed within the treatment area. Each well consisted of a 1.5-inch diameter fiberglass pipe extending from 2 fbg to 35 fbg. A number one graded silica sand was installed within the annual space surrounding the fiberglass pipe to a depth of 6 fbg. The remainder of the borehole was finished to grade using high temperature grout. After the fiberglass pipe was installed, a string of ten interconnected temperature sensors was installed in each sensor well to evaluate the effects of thermal heating at various depths within the vadose zone (7.5, 10.5, 13.5, 16.5, 19.5, 22.5, 25.5, 28.5, 31.5 and 34.5 feet below grade) . The wiring associated with each sensor probe was then trenched to the remediation compound and connected to the local area network. Sensor well diagrams provided by McMillan-McGee Corporation are included in Appendix E.

5.7 Trenching Activities

The trenches that were excavated to connect the wiring and piping from the electrodes, MPE wells, and temperature sensor locations were backfilled with clean sand, described as "Screenings B", which was obtained from the O&G Industries, Inc. quarry in Danbury, Connecticut.

5.8 Paving and Fence Installation

After all trenches were backfilled, the area was repaved with an approximately 4-inch layer of asphalt. A wooden stockade fence was also erected around the above-ground remediation components. The fence was locked and only accessed by Loureiro NY personnel who were properly trained to conduct routine maintenance activities.

5.9 System Connections

Municipal water was pumped through the electrodes for cooling and into the subsurface to aid in the heating process. The water circulation system, which resided within the remediation compound, pumped water into the electrodes at a maximum rate of 4.5 gallons per minute. The water that returned to the surface from the electrodes, in addition to condensate from the MPE wells, was directed to the phase separator. The liquid phase was then transferred to a low-profile air stripper to volatilize dissolved phase VOCs. Liquids from the tray stripper were pumped through a series of two 250-pound granular-activated carbon vessels prior to discharge to the sanitary sewer. Emissions from the air-stripper were discharged directly to the atmosphere without treatment.

Extracted air from the MPE wells was directed to the liquid/vapor separator, followed by a series of vacuum and temperature measuring devices. After flowing through an in-line filter for removal of any residual moisture, the air stream was passed through a refrigerated glycol heat exchanger and a refrigerated chiller, before it was pumped through three sacrificial carbon beds and into the atmosphere.

A process flow diagram that shows how the various elements of the treatment system were connected is provided as Figure 2-1.

5.10 Remediation System Operation and Monitoring

The thermally-enhanced SVE system operated from August 4, 2010 through October 21, 2010. The heating component of the SVE system was deactivated on October 22, 2010 after the power company discovered stray current in the ground. Between October 22, 2010 and July 21, 2011, the SVE component of the remediation system continued to operate.

Automated recording of temperatures within sensor wells T-01 through T-04 began on August 12, 2010 and continued until deactivation of the thermal heating component on October 22, 2010. During this period of time, temperature increases ranging from approximately 7 to 48 degrees Celsius were recorded in the subsurface. The highest temperature increases within each of the ten vertical zones were recorded within sensor well T-03, located approximately 6 feet southeast of the former drywell. Temperature measurements for each of the four sensor wells are presented in Table 6-1.

Air was extracted from the seven MPE wells at a combined rate of approximately 125 cubic feet per minute. Air samples of combined influent to the treatment system were collected in 3.2 liter Summa canisters on September 15, 2010, October 11, 2010, April 25, 2011 and June 6, 2011. Each sample was submitted to Spectrum Analytical in Agawam, Massachusetts (New York State Laboratory Certification #13393/11840) for VOC analysis by EPA Method T0-14A. A summary of thermally enhanced SVE analytical results is presented as Table 6-2.

Total VOC extraction rates ranged from 0.0938 pounds per day (lbs/day) on September 15, 2010 to 0.0172 lbs/day on June 6, 2011. The cumulative mass of VOCs extracted from the subsurface during period of August 4, 2010 through July 21, 2011 was estimated to be approximately 15.4 lbs. Thermally-enhanced SVE mass removal data is summarized in Table 6-3.

5.11 Disposal of Construction-Generated Waste

Soil cuttings and drilling fluids were generated during the advancement of boreholes and soil was generated during trenching activities. Soil generated during drilling and construction activities was pre-characterized using analytical data from soil borings previously completed within the remediation area. Additionally, all soil cuttings were screened with a PID throughout the construction process. Soil identified as characteristically hazardous was containerized in 55-gallon drums and labeled as hazardous solid waste. Soil identified as non-hazardous was containerized in a 20-yard roll-off container.

In general, drilling was conducted without the use of potable water; however, when boulders were encountered in the subsurface, water was added to cool the equipment. Any water that was returned to the surface was containerized in 55-gallon drums.

The following drilling-related wastes were generated:

- Nine 55-gallon drums containing solid waste identified as characteristically hazardous for TCE (waste code D040).
- Five 55-gallon drums containing non-hazardous liquid waste.
- One 55-gallon drum of liquid waste identified as characteristically hazardous for TCE (waste code D040).
- Ten 20-yard roll-offs containing non-hazardous waste (totaling 169.66 tons).

Non-hazardous solid wastes were transported by United Industrial Services and disposed at the Bridgeport United Recycling facility in Bridgeport, Connecticut. The 55 gallon drums of non-hazardous liquid waste and 55-gallon drums of hazardous solid and liquid wastes were transported by Veolia ES Technical Solutions and Freehold Cartage Inc to the Stablex Canada facility in Blainville, Quebec, Canada. The drums were removed from the Site on April 28, 2010. Waste documentation is included in Appendix F.

5.12 Decommissioning of Remediation System

All above-grade components were removed from the Site in July 2011 after operation of the thermally-enhanced SVE system was discontinued. All below-grade components of the remediation system remain intact. The manifold for the MPE wells is accessible via a manhole located in the parking lot.

6. POST-REMEDIATION SOIL SAMPLING

Following decommissioning of the SVE system, soil borings SB-045 and SB-046 were advanced using Rotosonic drilling techniques through the source area, where the highest concentrations of VOCs were previously detected. Soil sampling was conducted in accordance with the approved RAWP submitted to NYSDEC in November 2009. Soil sampling was performed as described below to assess the effectiveness of thermally-enhanced SVE.

6.1 Soil Sampling Methods

Soil samples were collected continuously from borings SB-045 and SB-046 in five-foot or ten-foot sample bags using Rotosonic drilling techniques. All soil samples were obtained in accordance with the LEA *SOP for Soil Sampling*. All referenced SOPs are provided in Appendix C.

Once obtained, the soils were visually classified and logged by Loureiro NY personnel over discrete, two-foot intervals. In both borings, soil samples obtained from two-foot intervals between 15 fbg and 40 fbg were selected for laboratory analyses and placed directly into containers provided by Spectrum Analytical. Soils for VOC analysis were collected and preserved in accordance with the LEA *Standard Operating Procedure for Collecting and Preserving Soil and Sediment Samples for Laboratory Determination of Volatile Organic Compounds*. Each sample container was properly labeled and identified on the corresponding chain-of-custody form using a unique sample identification number. The sample containers were then placed on ice in a cooler. Custody of the samples was transferred at the Site to a laboratory courier, following proper chain of custody documentation.

6.2 Soil Analytical Methods

Soil samples and the corresponding quality assurance/quality control samples were analyzed by Spectrum Analytical for VOCs by EPA method CLP SOM 1.2.

6.3 Summary of Analytical Results

The maximum concentration of TCE detected in soil samples from borings SB-045 and SB-046 was 3.3µg/kg as shown on Table 6-4. No additional chlorinated VOCs were detected above laboratory reporting limits in any of the soil samples analyzed. Additional details relating to the post-remediation soil sampling program will be provided in the Supplemental Remedial Investigation Report and a Final Engineering Report for the Site.

7. CONCLUSIONS

The SVE IRM was conducted in accordance with the NYSDEC-approved RAWP. The remedial action achieved the following RAOs:

Soil RAOs for Public Health Protection

- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

Soil RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination

The achievement was demonstrated through post-remediation sampling of soil within the release area. In general, the concentrations of VOCs in soil were reduced from concentrations exceeding 100,000 µg/kg to non-detectable levels. A limited number of post-remediation soil samples contained VOCs, but at concentrations that were below the applicable SCOs.

TABLE

TABLE 6-1
TEMPERATURE SENSOR WELL MEASUREMENTS
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Temperature Sensor Well ID	Depth (ft.)	Temperature (°C)												
		8/12/2010	8/17/2010	8/22/2010	8/27/2010	9/3/2010	9/8/2010	9/13/2010	9/18/2010	9/23/2010	10/4/2010	10/12/2010	10/17/2010	10/22/2010
T-01	7.5	26.99	28.83	29.49	29.56	31.07	33.17	35.54	37.05	38.43	36.79	36.72	37.31	37.77
	10.5	24.11	26.21	27.39	28.31	29.81	31.52	34.87	36.57	38.80	38.47	38.15	38.60	38.80
	13.5	NR	23.72	25.10	26.31	28.70	30.73	33.45	35.15	37.48	38.43	38.62	38.72	38.66
	16.5	19.54	21.24	22.81	24.32	27.59	29.94	32.03	33.73	36.15	38.37	39.09	38.83	38.50
	19.5	18.17	19.80	21.37	23.20	27.64	30.06	31.76	33.32	35.87	39.07	39.66	38.94	37.77
	22.5	16.98	18.94	20.76	23.31	29.18	31.40	33.43	34.80	37.61	40.54	41.46	40.02	37.93
	25.5	16.18	17.87	20.35	23.29	29.22	33.14	35.81	37.05	40.12	42.79	43.25	41.42	39.99
	28.5	15.80	17.76	20.49	23.76	30.28	34.65	37.91	40.00	43.58	44.95	43.78	41.10	39.67
	31.5	15.73	18.01	20.69	24.21	32.10	35.95	39.80	42.73	46.32	45.60	43.19	39.73	38.17
	34.5	15.80	17.24	19.58	22.91	29.89	33.35	37.72	41.50	44.50	43.85	43.65	40.39	38.24
T-02	7.5	25.92	27.23	27.63	27.82	29.01	31.04	34.98	38.06	40.10	39.64	40.69	42.33	43.44
	10.5	22.96	24.14	24.93	25.58	27.35	29.19	33.38	36.72	39.34	40.52	42.68	43.99	45.23
	13.5	20.95	22.13	23.04	23.96	26.18	28.34	32.07	35.15	38.09	40.64	43.13	44.11	45.02
	16.5	18.82	19.86	20.84	22.08	24.89	27.44	30.71	33.38	36.65	40.24	42.20	42.99	43.44
	19.5	17.43	18.35	19.59	21.42	25.20	28.27	31.34	33.56	36.50	41.06	42.76	43.02	43.09
	22.5	16.43	17.60	19.23	21.84	27.13	30.72	33.91	36.07	39.20	43.18	44.74	44.16	43.83
	25.5	15.87	16.98	19.19	22.52	28.85	33.22	37.00	39.48	42.61	45.67	46.98	45.74	44.76
	28.5	15.49	16.47	18.95	22.54	29.19	34.40	39.23	42.49	45.55	47.38	48.23	46.92	45.68
	31.5	15.56	16.73	19.34	22.86	29.64	34.40	39.81	44.05	47.05	47.44	48.35	46.79	45.49
	34.5	15.62	16.66	19.08	22.21	27.75	31.60	36.75	41.64	44.77	45.16	46.98	45.48	43.79
T-03	7.5	26.88	31.55	32.33	32.07	38.58	42.92	46.86	48.90	48.83	42.85	46.86	47.84	53.23
	10.5	23.50	27.11	28.42	28.81	34.58	38.51	42.71	45.39	46.31	43.69	47.10	47.95	53.32
	13.5	21.18	24.51	25.49	26.48	32.56	36.10	39.96	42.64	44.41	43.69	46.57	48.01	53.38
	16.5	19.12	21.73	23.04	24.47	30.81	34.08	37.35	40.16	42.38	43.49	45.26	45.85	53.43
	19.5	17.74	19.96	22.25	24.86	31.65	34.98	37.92	40.86	43.21	44.97	46.67	46.93	53.46
	22.5	NR	19.99	23.38	27.76	35.85	39.44	42.51	45.97	48.19	47.53	52.95	53.47	53.47
	25.5	16.02	20.65	24.89	30.57	40.16	43.88	47.73	51.45	54.19	50.08	59.68	60.92	62.29
	28.5	15.53	19.77	24.20	29.88	39.60	43.51	47.88	52.51	54.60	51.14	58.71	61.45	63.60
	31.5	15.22	18.42	21.74	26.18	35.70	39.61	44.57	49.52	51.87	49.79	54.61	57.48	59.70
	34.5	15.43	17.25	19.66	22.08	28.79	33.62	39.68	43.72	46.20	45.94	50.05	52.85	54.55
T-04	7.5	24.10	26.33	26.00	25.80	28.30	29.22	30.53	27.18	30.59	28.62	30.46	31.18	31.31
	10.5	21.61	23.64	24.09	24.03	26.65	27.76	29.46	27.30	30.31	29.33	31.62	32.48	32.61
	13.5	19.55	21.31	21.90	22.23	24.78	26.09	27.72	27.39	29.42	29.62	31.38	31.97	32.04
	16.5	17.99	19.36	20.21	20.93	23.34	24.72	26.22	27.46	28.70	30.40	30.92	30.99	30.99
	19.5	16.87	18.04	19.28	20.72	23.66	24.90	26.46	27.77	29.72	32.01	31.55	31.09	31.03
	22.5	16.23	18.19	20.34	23.08	27.39	28.24	29.80	31.83	34.18	35.22	34.89	34.18	34.05
	25.5	15.66	19.50	23.22	27.53	33.46	34.70	36.40	39.14	41.03	38.55	42.40	41.42	41.36
	28.5	15.39	20.74	25.37	29.87	37.18	39.66	42.14	45.14	46.44	40.70	48.60	48.08	48.60
	31.5	15.46	20.35	24.01	27.59	34.77	37.12	40.90	44.95	46.38	40.64	44.03	44.95	45.99
	34.5	15.48	18.61	21.15	23.76	28.59	31.20	35.70	39.54	41.11	38.37	38.04	39.74	40.78

Notes:
NR - Not Recorded

TABLE 6-2
SUMMARY OF THERMALLY ENHANCED SVE ANALYTICAL RESULTS
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Sample Number	[illegible]		[illegible]		1227801		1227927	
Sample Location	Influent		Influent		Influent		Influent	
Sample Date	[illegible]		[illegible]		4/25/2011		6/6/2011	
Influent Flow Rate (CFM)	125		125		125		125	
Units	mg/m³	lb/ft³	mg/m³	lb/ft³	mg/m³	lb/ft³	mg/m³	lb/ft³
Vapor Phase Constituent								
1,1,1-Trichloroethane	2700	1.68E-07	1300	8.11E-08	436.48	2.72E-08	298.44	1.86E-08
Bromodichloromethane	33	2.06E-09	18	1.12E-09				
1,1,2-Trichloroethane			8.3	5.18E-10	2.62	1.63E-10		
Tetrachloroethene	45	2.81E-09	35	2.18E-09	25.63	1.60E-09	34.18	2.13E-09
1,4-Dichlorobenzene			8.4	5.24E-10				
Dichlorodifluoromethane (Freon-12)	16	9.98E-10	11	6.86E-10	2.97	1.85E-10		
Trichlorofluoromethane (Freon-11)			7.8	4.86E-10				
1,1-Dichloroethene	110	6.86E-09	61	3.80E-09	38.17	2.38E-09	27.14	1.69E-09
1,1-Dichloroethane	290	1.81E-08	200	1.25E-08	104.87	6.54E-09	69.64	4.34E-09
cis-1,2-Dichloroethene	350	2.18E-08	180	1.12E-08	101.11	6.30E-09	70.58	4.40E-09
Methyl Ethyl Kerone	7.8	4.86E-10	20	1.25E-09				
Chloroform	440	2.74E-08	210	1.31E-08	16.26	1.01E-09	17.13	1.07E-09
Cyclohexane	66	4.12E-09	15	9.35E-10				
Vinyl Chloride			0.76	4.74E-11				
Trichloroethylene	4300	2.68E-07	2100	1.31E-07	1053.35	6.57E-08	1015.73	6.33E-08
Methylene Chloride					1.32	8.23E-11	3.47	2.16E-10
Benzene					1.21	7.55E-11		
1,2-Dichloropropane					4.53	2.82E-10		
Toluene					1.13	7.05E-11		
1,2,4-Trimethylbenzene					1.08	6.73E-11		
Total VOCs	**8357.8**	**5.21E-07**	**4175.26**	**2.60E-07**	**1790.73**	**1.12E-07**	**1536.31**	**9.58E-08**
VOC Removal Rate (lbs/day)	**0.0938**		**0.0469**		**0.0201**		**0.0172**	

Notes:
CFM - Cubic feet per minute
VOCs - Volatile organic compounds
mg/m^3 - Milligrams per cubic meter
lbs/day - Pounds per day
lb/ft^3 - Pounds per cubic foot

TABLE 6-3
THERMALLY ENHANCED SVE MASS REMOVAL
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Date Range		System Flow Rate (cfm)	Average Emissions Rate (lbs/day)	Mass Removed (lbs)	Cumulative Mass Removed (lbs)
Start	End				
8/4/2010	9/15/2010	125	0.1317	5.53	5.53
9/15/2010	10/11/2010	125	0.0703	1.83	7.36
10/11/2010	4/25/2011	125	0.0335	6.56	13.92
4/25/2011	6/6/2011	125	0.0187	0.78	14.71
6/6/2011	7/21/2011	125	0.0157	0.71	15.41

Notes:
cfm - cubic feet per minute
lbs/day - pounds per day

TABLE 6-4
SUMMARY OF VOCS DETECTED IN POST-REMEDIATION SOIL SAMPLES
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Loureiro
Engineering • Construction • EH&S • Energy • Waste

	Location ID	SB-045	SB-045	SB-045	SB-045	SB-045	SB-045	SB-045
	Sample ID	1245095	1245096	1245097	1245098	1245099	1245101	1245102
	Sample Date	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011
	Sample Time	9:25	9:25	9:27	9:30	9:43	9:49	9:52
	Sample Depth	15' - 17'	15' - 17'	17' - 19'	19' - 21'	21' - 23'	25' - 27'	27' - 29'
	Laboratory	Spec	Spec	SPEC	SPEC	SPEC	SPEC	SPEC
	Lab. Number	K2527-02C	K2527-03C	K2527-04B	K2527-05B	K2527-06B	K2527-08	K2527-09B
Constituent	Units							
Date Organics Analyzed	-	12/4/2011	12/4/2011					
Trichloroethylene	ug/kg				1.4 J			1.8 J
Acetone	ug/kg	32	30					
Carbon Disulfide	ug/kg	1.8 J	1.4 J					
Hexamethylcyclotrisiloxane	ug/kg	4.9 BNJ	3.3 BNJ	6.3 BNJ	3.2 BNJ			
Octamethylcyclotetrasiloxane	ug/kg			83 NJ				
Methyl Acetate	ug/kg							
Unknown	ug/kg	7.2 J	7.3 J	11 J	7.9 J	5.6 J	6.0 J	6.2 J

Notes:
"J" - denotes an estimated value
"B" - denotes the analyte was detected in the blank
"N" - denotes a tentatively identified compound

TABLE 6-4
SUMMARY OF VOCS DETECTED IN POST-REMEDIATION SOIL SAMPLES
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Loureiro
Engineering • Construction • EH&S • Energy • Waste

	Location ID	SB-045	SB-045	SB-045	SB-045	SB-045	SB-046	SB-046
	Sample ID	1245103	1245104	1245105	1245106	1245108	1245109	1245110
	Sample Date	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011
	Sample Time	9:54	10:00	10:05	10:12	10:30	12:48	12:48
	Sample Depth	29' - 31'	31' - 33'	33' - 35'	35' - 37'	39' - 40'	15' - 17.5'	15' - 17.5'
	Laboratory	SPEC	SPEC	SPEC	SPEC	Spec	Spec	Spec
	Lab. Number	K2527-10B	K2527-11B	K2527-12B	K2527-13B	K2527-15B	K2527-16B	K2527-17B
Constituent	Units							
Date Organics Analyzed	-					12/5/2011	12/2/2011	12/4/2011
Trichloroethylene	ug/kg						1.8 J	
Acetone	ug/kg		7.6 J			17	39 J	11
Carbon Disulfide	ug/kg						1.7 J	
Hexamethylcyclotrisiloxane	ug/kg						5.5 NJ	8.5 NJ
Octamethylcyclotetrasiloxane	ug/kg				12 NJ			150 NJ
Methyl Acetate	ug/kg					12 J		
Unknown	ug/kg	6.0 J	6.2 J	4.8 J				12 J

Notes:
"J" - denotes an estimated value
"B" - denotes the analyte was detected in the blank
"N" - denotes a tentatively identified compound

TABLE 6-4
SUMMARY OF VOCS DETECTED IN POST-CONFIRMATORY SOIL SAMPLES
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Loureiro
Engineering • Construction • EH&S • Energy • Waste

	Location ID	SB-046	SB-046	SB-046	SB-046	SB-046	SB-046	SB-046
	Sample ID	1245111	1245112	1245113	1245114	1245115	1245116	1245117
	Sample Date	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011	11/29/2011
	Sample Time	12:52	12:55	13:03	13:07	13:10	13:13	13:16
	Sample Depth	17.5' - 20'	20' - 22'	22' - 24'	24' - 26'	26' - 28'	28' - 30'	30' - 32'
	Laboratory	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC	SPEC
	Lab. Number	K2527-18C	K2527-19B	K2527-20B	K2527-21B	K2527-22B	K2527-23B	K2527-24B
Constituent	Units							
Date Organics Analyzed	-							
Trichloroethylene	ug/kg							
Acetone	ug/kg							
Carbon Disulfide	ug/kg							
Hexamethylcyclotrisiloxane	ug/kg	8.4 NJ						
Octamethylcyclotetrasiloxane	ug/kg	61 NJ						
Methyl Acetate	ug/kg							
Unknown	ug/kg	11 J	8.1 J	7.2 J	5.7 J	7.5 J	5.5 J	6.8 J

Notes:
"J" - denotes an estimated value
"B" - denotes the analyte was detected in the blank
"N" - denotes a tentatively identified compound

TABLE 6-4
SUMMARY OF VOCS DETECTED IN POST-REMEDIATION SOIL SAMPLES
DeWalt Service Center, 56-15 Queens Boulevard, Woodside, New York

Loureiro
Engineering • Construction • EH&S • Energy • Waste

	Location ID	SB-046	SB-046	SB-046				
	Sample ID	1245118	1245119	1245120				
	Sample Date	11/29/2011	11/29/2011	11/29/2011				
	Sample Time	13:26	13:58	14:07				
	Sample Depth	32' - 34'	36' - 38'	38' - 40'				
	Laboratory	Spec	SPEC	SPEC				
	Lab. Number	K2527-25B	K2527-26B	K2527-27B				
Constituent	Units							
Date Organics Analyzed	-	12/2/2011						
Trichloroethylene	ug/kg	3.3 J						
Acetone	ug/kg			19				
Carbon Disulfide	ug/kg							
Hexamethylcyclotrisiloxane	ug/kg		5.3 NJ	6.2 NJ				
Octamethylcyclotetrasiloxane	ug/kg		40 NJ	140 NJ				
Methyl Acetate	ug/kg							
Unknown	ug/kg		8.1 J	11 J				

Notes:
"J" - denotes an estimated value
"B" - denotes the analyte was detected in the blank
"N" - denotes a tentatively identified compound

FIGURES

1000 0 1000 2000 3000

SCALE IN FEET

N

MAP REFERENCE :

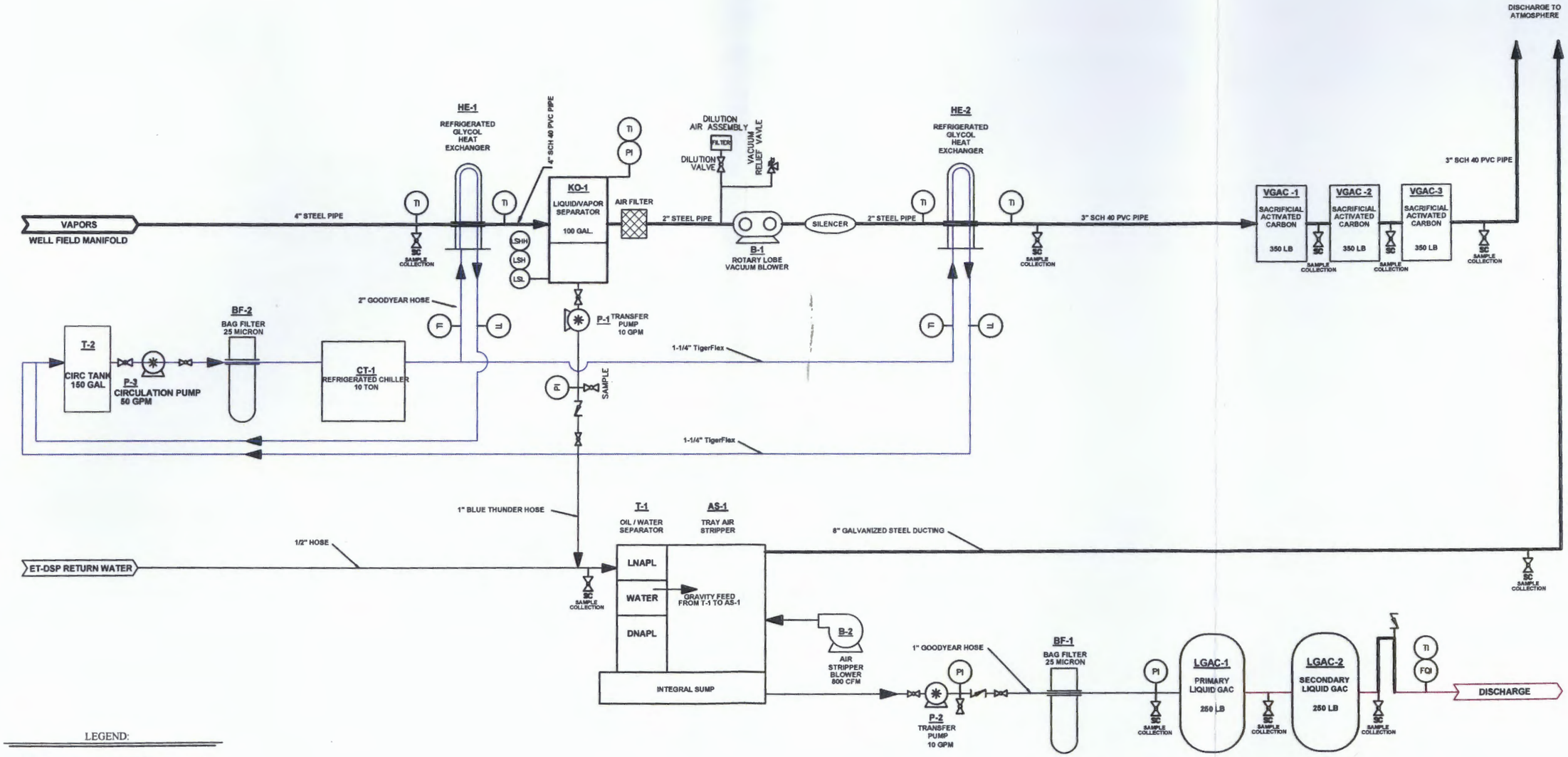
PORTION OF 7.5 MINUTE SERIES MAP FOR THE BROOKLYN, NY QUADRANGLE. TAKEN FROM TOPO!® CD VERSION 4.2.6 . © 2006 NGHT, INC. © 2006 TELE ATLAS NORTH AMERICA, INC.

3-PHASE ELECTRICAL RESISTIVE SOIL HEATING/VAPOR EXTRACTION SYSTEM
INTERIM REMEDIAL MEASURE CONSTRUCTION COMPLETION REPORT
DEWALT SERVICE CENTER, 56-15 QUEENS BOULEVARD, WOODSIDE, NEW YORK (BLOCK 1329, LOT 1)

SITE LOCATION MAP

Comm.No.	FIGURE 1-1	Loureiro
07MD012		

G:\AUTOCAD\PROJECTS\07MD803\CCR\5VE IRM CCR\07MD012-F1-1 USGS.DWG Tab:F1-1 Saved: 3/4/2013 10:12 AM Plotted: 3/5/2013 1:11 PM



LEGEND:

- LNAPL AND CONDENSED NAPL VAPORS
- STEAM
- VAPORS
- WASTE WATER AND UNTREATED GROUNDWATER
- MUNICIPAL WATER
- TREATED WATER
- COMPRESSED AIR

REFERENCE:

"SHEET M–1 PROCESS FLOW DIAGRAM TREATMENT SYSTEM MCMILLAN–MCGEE BLACK AND DECKER 5615 QUEENS BLVD., WOODSIDE, NY". MK ENVIRONMENTAL, INC. 7150 SOUTH MADISON STREET WILLOWBROOK, IL 60527, 830–920–1104. DATED 4–28–10.

3-PHASE ELECTRICAL RESISTIVE SOIL HEATING/VAPOR EXTRACTION SYSTEI

INTERIM REMEDIAL MEASURE CONSTRUCTION COMPLETION REPORT

REMEDIATION SYSTEM PROCESS FLOW DIAGRAM

Comm.No.	FIGURE 2-1	Loureir
07MD012		

DRAWINGS

APPENDIX A

Remedial Action Work Plan Approval Letter

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
One Hunters Point Plaza
47-40 21st Street, Long Island City, 11101
Phone: (718) 482-4995 • **Fax:** (718) 482-4098
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

March 4, 2010

David N. Scotti, P.G.
Loureiro Engineering Associates, Inc.
100 Northwest Drive
Plainville, Connecticut 06062

Re: Remedial Action Work Plan for DeWalt, Delta Porter Cable Service Center
56-15 Queens Boulevard, Woodside, NY
Spill Number 0811202

Dear Mr. Scotti,

The Department of Environmental Conservation (Department) and New York State Department of Health have reviewed the Remedial Action Work Plan (Plan) for the DeWalt Delta Porter Cable Service Center prepared by Loureiro Engineering Associates and dated November 2009. The Department finds the Plan acceptable, provided the following items are addressed:

- The detailed design of the in situ thermal-enhanced soil vapor extraction system will need to demonstrate that eluted vapors (from groundwater) will be captured by the mitigation system.
- The vertical extent of contamination is not delineated at SB-13. An additional boring will need to be advanced in this location. If additional contamination is found at depths not anticipated, the system design will need to be modified to address this contamination.
- The Plan must be signed and sealed by a NYS licensed Professional Engineer.

Since this site is being handled under a stipulation agreement, once remediation is complete, if the Department requires, the owner must file a deed restriction on the property. The deed restriction must be submitted to the Department for approval prior to filing. This would be done in lieu of an environmental easement, which was specified in the Plan.

The site owner and its contractors are solely responsible for safe execution of all invasive and other remedial work performed under Plan, and in particular, are responsible for the structural integrity of excavations and structures and utilities onsite and offsite that may be adversely affected by those excavations, and to obtain any permits or approvals that may be required in that regard. Further, the site owner and its contractors are solely responsible for implementation of all appropriate health and safety measures during performance of invasive and other remedial work performed under the Plan, and to obtain any permits or approvals that may be required.

If you have any questions, please contact me at 718-482-4977.

Sincerely,

Jennifer Kann,
Environmental Engineer

ec: Chris Doroski, NYSDOH

APPENDIX B

Permits and City Agency Approvals

NYC™ Buildings

Work Permit Department of Buildings

Permit Number: *420179595-01-EQ-FN*

Issued: *06/16/2010* Expires: *12/31/2010*

Issued to: JAMES ADAMS

Address: *QUEENS 56-15 QUEENS BOULEVARD*

Business: LOUREIRO CONTRACTORS INC

Contractor No: GC-603971

Description of Work:

ALTERATION TYPE 3 - CONSTRUCTION EQUIPMENT - FENCE ERECT WOOD FENCE AS PER PLANS FILED HEREWITH. NO CHANGE IN USE, EGRESS OR OCCU PANCY

Review is requested under Building Code: 2008

To see a Zoning Diagram (ZD1) or to challenge a zoning approval filed as part of a New Building application or Alteration application filed after 7/13/2009, please use "My Community" on the Buildings Department web site at www.nyc.gov/buildings.

Emergency Telephone Day or Night: 311

Borough Commissioner: Commissioner of Buildings:

Tampering with or knowingly making a false entry in or falsely altering this permit is a crime that is punishable by a fine, imprisonment or both.

OP-35A (5/10)

17994B

12:46 THE CITY OF NEW YORK

DEPARTMENT OF BUILDINGS QUEENS BOROUGH OFFICE

I-N-V-O-I-C-E

>>>>>>>>>>>> INVOICE NO.: 40841849 INVOICE DATE: 06/16/10 <<<<<<<<<<<<

PERMIT NO/TYPE 420179595 EQUIPMENT FENCE

APPLICANT ADAMS JAMES

PREMISE QUEENS 56-15 QUEENS BOULEVARD

BLOCK 01329 LOT 00001 BIN 4031142

TOTAL PERMIT FEE	130.00	>>>>> NON FEE EXEMPT <<<<<	
PAYMENTS RECEIVED	0.00		
CURRENT PAYMENT	0.00	CASH	
CC IF FILED	0.00		35.00
BALANCE DUE	0.00		
--CIVIL PENALTY	0.00		
-- RECORDS PAYMENT	35.00	0521100470000500--	
--RENEWAL PAYMENT	0.00		
--LANDMARKS PAYMENT	0.00		

Type or print all information. See reverse for instructions. OMB No. 2040-0042 Approval Expires 12/31/2011

INVENTORY OF INJECTION WELLS

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF GROUND WATER AND DRINKING WATER

(This information is collected under the authority of the Safe Drinking Water Act)

1. DATE PREPARED *(Year, Month, Day)*: 2010, 4, 22

2. FACILITY ID NUMBER:

PAPERWORK REDUCTION ACT NOTICE

The public reporting burden for this collection of information is estimated at about 0.5 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, Director, Collection Strategies Division (2822), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, and to the Office of Management and Budget, Paperwork Reduction Project, Washington, DC20503.

3. TRANSACTION TYPE *(Please mark one of the following)*

- [ ] Deletion
- [X] First Time Entry
- [ ] Entry Change
- [ ] Replacement

4. FACILITY NAME AND LOCATION

A. NAME *(last, first, and middle initial)*: Dewalt, Delta, Porter Cable Service Center

B. STREET ADDRESS/ROUTE NUMBER: 56-15 Queens Boulevard

C. LATITUDE: DEG 40 | MIN 44 | SEC 32.

D. LONGITUDE: DEG -73 | MIN 54 | SEC 32.

E. TOWNSHIP/RANGE

TOWNSHIP	RANGE	SECT	1/4 SECT

F. CITY/TOWN: Woodside

G. STATE: NY

H. ZIP CODE: 11377

I. NUMERIC COUNTY CODE: Queens

J. INDIAN LAND *(mark "x")*: [ ] Yes [X] No

5. LEGAL CONTACT:

A. TYPE *(mark "x")*: [X] Owner [ ] Operator

B. NAME *(last, first, and middle initial)*: Biagioni, Linda H.

C. PHONE *(area code and number)*: 410-716-3545

D. ORGANIZATION: Black & Decker (U.S.), Inc.

E. STREET/P.O. BOX: 701 E. Joppa Rd.

F. CITY/TOWN: Towson

G. STATE: MD

H. ZIP CODE: 21286-5502

I. OWNERSHIP *(mark "x")*

- [X] PRIVATE
- [ ] PUBLIC
- [ ] SPECIFY OTHER
- [ ] STATE
- [ ] FEDERAL

6. WELL INFORMATION:

A. CLASS AND TYPE		B. NUMBER OF WELLS		C. TOTAL NUMBER OF WELLS	D. WELL OPERATION STATUS				
		COMM	NON-COMM		UC	AC	TA	PA	AN
V	5X26	10		0 10	10				
				0					
				0					
				0					
				0					
				0					
				0					

COMMENTS *(Optional)*: See Attachment 1 for additional details on the "wells" that will be installed.

KEY:

- DEG = Degree
- MIN = Minute
- SEC = Second
- SECT = Section
- 1/4 SECT = Quarter Section
- COMM = Commercial
- NON-COMM = Non-Commercial
- AC = Active
- UC = Under Construction
- TA = Temporarily Abandoned
- PA = Permanently Abandoned and Approved by State
- AN = Permanently Abandoned and not Approved by State

Dewalt, Delta, Porter-Cable Service Center
56-15 Queens Boulevard, Woodside, New York
April 22, 2010

Attachment 1
Environmental Protection Agency – Inventory of Injection Wells

Loureiro Engineering Associates, Inc. (LEA), on behalf of Black & Decker (U.S.), Inc. (Black & Decker), will be remediating soil impacted with volatile organic compounds (VOCs) at the Dewalt, Delta, Porter-Cable Service Center (Dewalt) located at 56-15 Queens Boulevard in Woodside, New York (the Site). This remediation is being executed under a Stipulated Agreement entered into between Black & Decker and New York State Department of Environmental Conservation (NYSDEC) on June 17, 2009. Ms. Jennifer Kann serves as the NYSDEC Project Manager for this Site.

The VOCs in soil will be remediated using soil vapor extraction (SVE) enhanced through electro-thermal heating of the soil. The soils to be remediated are located beneath the eastern portion of the parking lot to a depth of 35 feet below grade (fbg). Groundwater beneath this property is located at a depth of approximately 70 fbg. The subsurface will be heated using a total of ten electrodes that are 8-inches in diameter and extend to a depth of approximately 35 fbg. City water obtained from an exterior spigot on the site building will be injected through water hoses that are connected to the electrodes. The system will inject a maximum of 3 gallons of water per minute into the subsurface through the electrodes. The purpose of the injected water is two-fold: to cool the electrodes and to help transport electrical current evenly through the subsurface. The water that enters the subsurface formation through the electrodes will be captured by a series of seven, 2-inch diameter, multi-phase extraction wells, and will be returned to the surface. The remediation system will be designed to capture 100 percent of the water that is introduced into the formation. None of the injected water will reach the underlying groundwater. Once the water is retrieved at the surface, it will undergo treatment prior to discharging to the New York City combined sewer system. LEA estimates that once the remediation system is brought on-line, it will be operational for approximately six months.

Any questions regarding the information supplied on the inventory form or the remediation technology may be directed to Mr. David N. Scotti, LEA Project Manager, via telephone at (860) 747-6181 or email at dnscotti@loureiro.com.

NYC
Environmental Protection

Caswell F. Holloway
Commissioner

Vincent Sapienza, P.E.
Deputy Commissioner
Bureau of Wastewater Treatment

96-05 Horace Harding Expwy
Corona, NY 11368

Tel. (718) 595-4906
Fax (718) 595-6950
vsapienza@dep.nyc.gov

December 1, 2010

Black & Decker (U.S.) Inc.
701 East Joppa Road
Towson, MD 21286-5502
Attn: Linda Biagioni

Re: Wastewater Discharge, Black & Decker, 56-15 Queens Blvd., File # C-4825

Dear Ms. Biagioni:

This Letter of Approval shall supersede the Letter of Approval issued on November 4, 2010.

This is in response to the May to October 2010 submissions, requesting for permission to discharge up to **4,320 gallons per day (gpd)** of wastewater generated from the Electro Thermal Dynamic Stripping Process for an environmental remediation system at 56-15 Queens Boulevard, Queens, NY 11377. The wastewater will be treated through one 69 gallon oil/water (phase) separator, one 260 gallon air stripper, one 25 micron bag filter, and two 250 lb carbon units, per provided schematic and information, before discharging to an on-site storm drain. The storm drain leads to the existing 12" combined sewer located at 57th Street between Queens Boulevard and 43rd Avenue in Queens, NY.

Based upon the information, schematic and analytical data submitted, you are hereby conditionally authorized, to discharge up to 4,320 gpd of the wastewater, treated through the above system, per provided schematic and information, as specified in your submissions, **for a period of 170 days**, to the combined sewer at the above mentioned location. **This Letter of Approval shall expire at midnight on November 3, 2011.**

You must contact the Division of Air, Noise, Permitting, and Policy regarding the air stripper. You are also required to follow manufacturer specifications for the operation and maintenance of the selected equipment.

This conditional approval, however, is subject to your obtaining a discharge Approval, specifying allowable flow rates, from the Division of Permitting and Connections, Bureau of Water and Sewer Operations, if discharges exceed 10,000 gpd. **This Letter of Approval is contingent upon permittee's compliance with any other Federal, State or Local laws applicable to the permitted activity.**

You must notify this section in writing prior to the commencement of discharge. In addition, you are required to hold the wastewater to the maximum extent practicable during heavy wet weather events. Refer to File # C-4825 in any correspondence to this office.

This Letter of Approval is an Order of the Commissioner of the Department of Environmental Protection. Please be advised that failure to comply with this Letter of Approval may result in the issuance of Notices of Violation (returnable to the New York City Environmental Control Board) and/or revocation of the Letter of Approval. Notices of Violation carry penalties of up to $10,000 a day, per violation.

If you have any questions concerning this matter, please contact Mr. Sean Hulbert, Engineer, at (718) 595-4715.

Sincerely,

Frances Leung, P.E., Chief
Industrial Inspections and
Permitting Section

NYC Buildings

NYC.gov always open

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NYC Department of Buildings

Application Details

Premises: 56-07 QUEENS BOULEVARD QUEENS
BIN: 4031142 Block: 1329 Lot: 1

Job No: 420179595
Document: 01 OF 1
Job Type: A3 - ALTERATION TYPE 3

Document Overview	Items Required	Virtual Job Folder	All Permits	Schedule A	Schedule B
Fees Paid	Forms Received		All Comments	C/O Summary	Plumbing Inspections
	Plan Examination			Print Letter of Completion	

This job is not subject to the Department's Development Challenge Process. For any issues, please contact the relevant borough office.

Last Action: SIGNED OFF 12/07/2010 (X)
Application approved on: 05/28/2010

Pre-Filed: 04/27/2010 **Building Type:** Other **Estimated Total Cost:** $0.00
Date Filed: 04/27/2010 **Fee Structure:** STANDARD **Filing Method:** E-FILED
Review is requested under Building Code: 2008

Job Description Comments

1 Location Information (Filed At)
House No(s): 56-15 **Street Name:** QUEENS BOULEVARD
Borough: Queens **Block:** 1329 **Lot:** 1 **BIN:** 4031142 **CB No:** 402
Work on Floor(s): 0OG **Apt/Condo No(s):**

2 Applicant of Record Information
Name: KEVIN B BYRNE
Business Name: KEVIN B. BYRNE ARCHITECTS, PC **Business Phone:** 718-548-6092
Business Address: 3254 CAMBRIDGE AVENUE BRONX NY 10463 **Business Fax:**
E-Mail: **Mobile Telephone:**
License Number: 019467
Applicant Type: ☐ P.E. ☒ R.A ☐ Sign Hanger ☐ Other

Directive 14 Applicant
Name: KEVIN B BYRNE
Business Name: KEVIN B. BYRNE ARCHITECTS, PC **Business Phone:** 718-548-6092
Business Address: 3254 CAMBRIDGE AVENUE BRONX NY 10463 **Business Fax:**
E-Mail: **Mobile Telephone:**
Applicant Type: RA **License Number:** 019467
Previous Applicant of Record
Not Applicable

3 Filing Representative
Name: JASON BYRNES
Business Name: JAM CONSULTANTS, INC. **Business Phone:** 212-244-4427

NYC Buildings

NYC Department of Buildings
280 Broadway, New York, NY 10007

Robert D. LiMandri, Commissioner

Letter of Completion

KEVIN B BYRNE
3254 CAMBRIDGE AVENUE
BRONX, NY 10463

Re: 56-15 QUEENS BOULEVARD, QUEENS
Job #: 420179595
Block: 1329 Lot: 1

Dear KEVIN B BYRNE:

Please be advised that the work related to the above application is completed and was signed off in the Building Information System (BIS) on 12/07/2010.

Because this job was filed as Directive 14 of 1975, the owner retained a registered professional engineer or registered architect, who certified that he/she inspected the work approved on this application and that it complies with the applicable laws, rules and regulations of the Department of Buildings.

Based on the nature of the work filed on this application a new certificate of occupancy is not required.

Very truly yours,

Borough Commissioner
QUEENS

Letter Generated on: 12/08/2010

NYC
Environmental Protection

Caswell F. Holloway
Commissioner

James J. Roberts, P.E.
Deputy Commissioner
Jroberts@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373

June 7, 2010

Robin L. McKinney
Senior Project Scientist
Loureiro Engineering Associates
100 Northwest Drive
Plainville, CT 06062

RE: DTQ-167-10
56-15 Queens Boulevard
Block No. 1329 Lot No. 001
Borough of Queens

Dear Mr. McKinney:

This office is in receipt of your letter dated May 21, 2010, requesting a dye test to ascertain whether the above captioned environmental remediation system is connected to the City sewers system.

On May 27, 2010, representatives of the Engineering Field Investigation Unit performed a dye test pertaining to the above referenced location. Uranine dye was administered into a 2" environmental remediation pipe. A trace of dye was observed in the downstream manhole of existing 12" diameter sewer in the bed of 57th Street.

The result of dye test merely confirms that the pipe is connected to the sewer system as noted above. Our testing cannot establish the size, type, material, condition slope or alignment of the system.

In addition this letter does not constitute a certification by the agency that the subject premises as note above are in compliance with Department of Environmental Protection Rules and Regulations.

Very truly yours,

MSafari

Mark Safari, P.E., Chief
Inspection Section

APPENDIX C

LEA Standard Operating Procedures

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Soil Sampling

SOP ID: 10006
Date Initiated: 02/20/90
Revision No. 009: 01/18/06

Approved By: _____ ***01/18/06***
David Brisson **Date**
Senior Project Geologist

_____ ***01/18/06***
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	02/20/90	
001-004	-	No record.
005	07/19/00	Revisions to template, including new logo.
006	05/16/01	Revisions to Sections 4.2.1, 4.2.2; add Section 4.2.3.
007	07/27/01	Updated to conform with new SOP format.
008	12/31/01	Minor revisions throughout.
009	01/18/06	Removed use of wood spatula

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Soil Sampling

1. Purpose and Scope

This document discusses procedures for collection of soil samples for analysis. Methods for collection and quality assurance/quality control (QA/QC) requirements are covered under separate standard operating procedures (SOPs). The procedures outlined in this document are in accordance with American Society of Testing Materials (ASTM) Standard D 420 and the Environmental Protection Agency (EPA) document entitled, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846). These procedures may vary slightly according to project-specific requirements.

2. Definitions

2.1. Field Forms: For the purpose of document and data control, a form is a document used in the conduct of company business to collect data, including approvals where required. Completed forms providing objective evidence of quality related activities are retained as quality records.

3. Equipment

3.1. Equipment required for the collection of soil samples shall include:

- Stainless steel spatula.
- Decontamination solutions, including distilled water, 10 percent methanol, 10 percent nitric acid.
- Hand towels.
- Polyethylene plastic sheeting.
- Sample collection jars.
- Clean disposable gloves.
- Field documentation.
- Indelible ink marker.
- Cooler, cold packs.
- Chain of custody seals and sample labels.
- Balance for weighing samples (for samples collected for the Loureiro Engineering Associates, Inc. (LEA) Analytical Laboratory, if needed).
- Utility knife.

- Re-sealable plastic bags.

4. Procedures

4.1. Preliminary Sampling Procedures

4.1.1. Sample Bottles

4.1.1.1. A laboratory request form shall be completed and submitted to the laboratory with the following information:

- Project name.
- LEA commission number.
- Date of submittal and date needed.
- Quantity of sample locations and sample points at each location.
- Type(s) of samples.
- Analytes, detection limits and QA/QC needed.
- Cooler(s) required.
- Number of chain of custody forms requested.

4.1.1.2. Check bottles against laboratory request form for completeness. The bottles should also be checked for damage and cleanliness. Confirm with laboratory personnel the adequacy of the preservatives used.

4.1.1.3. The total number of sample sets shall be increased by 10 percent to allow for possible breakage during transport to sites or other contingencies. At a minimum one additional sample bottle set shall be obtained per event.

4.1.1.4. Obtain preprinted labels and paperwork through the LEA information management system.

4.1.1.5. Label/date bottles in the field prior to sample collection. Check for accuracy.

4.1.1.6. A cooler with adequate ice or cold packs should be obtained from the laboratory to insure that the collected samples remain at 4 degrees Celsius during transport. Packing material should also be obtained to insure against breakage during transport.

4.1.2. Site Preparation

4.1.2.1. A level table shall be placed within the exclusion zone and covered with polyethylene sheeting.

4.1.2.2. Decontaminated spatulas shall be placed on the table. Sample bottles shall be placed in a convenient location and in order of sample collection.

4.1.2.3. PID and plastic bags shall be placed on the table for VOC screening, if necessary.

4.2. Cleaning and Decontamination

4.2.1. Prior to collecting a soil sample, the LEA representative will ensure that all necessary sampling equipment is clean and decontaminated according to the procedure outlined in Section 4.2.3 or according to the site specific work plan if different than below.

4.2.2. Upon completion of all sampling requirements and prior to leaving the site, all equipment used for sampling shall be cleaned and decontaminated according to the procedure outlined in Section 4.2.3 or according to the site specific work plan if different than below. All generated decontamination fluids shall be containerized and disposed of in accordance with the site-specific work plan and all municipal, state, and federal requirements.

4.2.3. The decontamination procedure of durable sampling equipment will be accomplished via swabbing the surfaces with a solvent. The order of decontamination is as follows:

- Detergent swab.
- DI water rinse.
- Hexane rinse (to be used if separate-phase petroleum product, other than gasoline is present).
- DI water rinse.
- 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
- DI water rinse.
- Methanol rinse (less than 10 percent solution).
- Air dry.

4.3. Sampling Procedures

4.3.1. All personal protective equipment (PPE) should be donned and maintained in accordance with the site-specific work plan or health and safety plan during all sampling procedures. In the event that no PPE has been specified for a particular sampling event, disposable latex gloves should be donned, as a minimum, during all sampling procedures.

4.3.2. The particular soil sampling device (i.e., hand auger, split spoon, etc.) shall be retrieved from the point of collection and placed on a level table covered in polyethylene sheeting.

4.3.3. Using a decontaminated stainless steel spatula, the soil shall be transferred directly into soil sampling containers. Care should be taken to completely fill the sample container intended for VOC analysis. Large void spaces within the container shall be minimized by packing, not agitation.

4.3.4. Wipe the rim of the sample container with a clean paper towel to remove excess solids, which would prevent adequate sealing of the sample container and seal the container.

The order of sample collection shall be as follows:

- Samples to be analyzed for volatile organic compounds (VOCs) at the LEA Analytical Laboratory.
- Samples to be analyzed for VOCs using appropriate EPA methodologies.
- Samples to be screened for total VOCs with a total volatile organic analyzer.
- Samples to be analyzed for other organic and inorganic constituents.

4.3.5. As required, affix a custody seal, noting the date and time of collection across the cap/bottle interface and on the sample label. Place and secure sample within cooler and complete all sample collection documentation. Alternatively, a custody seal shall be used to seal the entire cooler rather than individual sample containers.

4.4. Post Sampling Procedures

4.4.1. As required, upon completion of all sampling procedures for a particular site, secure the lid of the cooler using packaging tape with the chain of custody inside.

4.4.2. If the laboratory is local, transport the samples directly to the laboratory and present them to the sample manager. The representative of LEA should witness the verification of the chain of custody and obtain a carbon copy for filing in the project notebook.

4.4.3. If the laboratory is distant, arrange for transport with a reputable carrier service. Typically, the laboratory specifies the carrier to be used and provides the shipping papers. The cooler and samples shall be secured for transport, and all mailing documentation secured onto the top of the cooler. Unless otherwise specified, delivery shall be overnight. Friday shipments should be mailed for Saturday delivery, once confirmed that the laboratory can accept them on Saturday. The laboratory shall provide confirmation of acceptance noting the temperature of the temperature blank and any deviations from the chain of custody.

4.5. Documentation

4.5.1. The following general information shall be recorded in the field log book and/or on the appropriate field forms:

- Project and site identification.
- LEA commission number.
- Field personnel.
- Name of recorder.
- Identification of borings.
- Collection method.
- Date and time of collection.
- Types of sample containers used, sample identification numbers and QA/QC sample identification.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis method(s).
- Field observations on sampling event.
- Name of collector.
- Climatic conditions, including air temperature.
- Internal temperature of field and shipping (cooled) containers.

- Chronological events of the day.
- Status of total production.
- Record of non productive time.
- QA/QC data.

4.5.2. The following information shall be recorded on the Daily Field Report QA Checklist:

- Reviewer's name, date, and LEA commission number.
- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

4.5.3. The following information shall be recorded on the chain of custody record:

- Client's name and location.
- Date and time of sample collection.
- Sample number.
- Container type, number, size.
- Preservative used.
- Signature of collector.
- Signatures of persons involved in the chain of possession.
- Analyses to be performed.
- Type and number of samples.

4.5.4. The following information shall be provided on the sample label using an indelible ink pen:

- Sample identification number.
- Date and time of collection.
- Place of collection.
- Parameter(s) requested (if space permits).

4.5.5. The following information shall be recorded on the sample collection data sheet:

- Client name, location and LEA commission number.
- Boring or sampling location identification number.
- Date and time of collection.
- Sample number.
- Depth sample was obtained.
- Field instrumentation reading.

5. Quality Assurance/Quality Control

5.1. One trip blank sample should accompany the sampling set for each field crew and each field day for which VOC samples are collected.

5.2. One equipment blank sample should be collected for each field crew and each field day. Equipment blank samples should be analyzed for the same suite of analytes as the soil samples.

5.3. For QA/QC purposes, one duplicate sample will be collected for every twenty samples. The duplicate sample set will be analyzed for the same suite of analytes as the soil samples.

6. References

6.1. ASTM Standard D 420

6.2. EPA, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846).

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

SOP ID: 10015
Date Initiated: 12/27/94
Revision No. 002: 01/15/02

Approved By: */s/ Kimberly C. Clarke* *01/15/02*
Kimberly C. Clarke **Date**
Senior Project Scientist

/s/ Nick D. Skoularikis *01/15/02*
Nick D. Skoularikis **Date**
Director Of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	12/27/94	
001	11/20/96	No record
002	01/15/02	Formatting and minor revisions throughout

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

1. Purpose and Scope

This document presents the methods and procedures used to describe unconsolidated sedimentary materials for geological purposes in a uniform and consistent manner. It includes procedures for properly recording the observations by providing guidelines for completing boring logs and submitting those logs for computer entry. This Standard Operating Procedure (SOP) refers only to geologic logging of soils and sediments (including artificial fill and other man-made deposits) and specifically is not intended to describe logging of soils or sediments for geotechnical or other engineering purposes. Although the SOP presents a system for describing sediments, it is not intended to be a definitive reference for classifying sedimentary materials, nor is it intended to replace experience or training. Individuals using this SOP should be trained and competent in field methodologies and geologic logging prior to commencing field activities.

2. Definitions

2.1. None

3. Equipment

3.1. Equipment required for the geologic logging of soil/sediment samples shall include the following items:

- Tape measure or scale.
- Hand lens.
- Color chart.
- Grain-size comparator.
- Field forms.
- Indelible marker(s).
- Small table.
- Field Paperwork.
- Clipboard.

4. Procedures

4.1. Sample Collection

Samples of soil and unconsolidated sedimentary materials will be collected in general accordance with the SOPs for Soil Sampling (SOP ID 10006), Hand Auger Borings (SOP ID 10003), Hollow Stem Auger Soil Borings (SOP ID 10008), and Geoprobe® Probing and Sampling (SOP ID 10011). Those SOPs include procedures for decontamination of equipment required for sample collection, as well as providing the methodologies for sample collection and documentation.

4.2. Descriptions of Unconsolidated Sedimentary Materials

4.2.1. General Sediment Description Guidelines

For the purposes of geologically logging unconsolidated soils and sedimentary materials, a Modified Burmister method of description and classification should be used. The Modified Burmister Sediment Classification System (or simply, Burmister System) is intended as a rapid field method for identifying and classifying sediments. The system is based upon visual identification of the generalized grain-size distribution and description of the physical characteristics of the sample.

A Burmister System description is comprised of three parts: a color descriptor; a grain-size descriptor; and modifier(s). The color descriptor indicates the overall color or colors of the wet sample. The descriptor consists of a color name or names and (if possible) the color code from a standard color reference (for example, a Munsell[7] Color Chart). The grain-size description indicates the predominant grain size in the sample, as well as the relative percentages of other grain sizes present.

Modifiers are used to further describe the geologic character of the sample. Modifiers may include descriptions of moisture content, sorting, sphericity, angularity, sedimentary structures or other pertinent information.

4.2.2. Color Description

The color of the wet sediment should be determined with reference to a standard color comparator (for example, a Munsell[7] Color Chart) for rocks or sediment. The included color descriptor should contain both the color name and, when a color comparator is used, the appropriate hue-chroma value code, for example "Reddish brown (5YR 4/4)". The color of a sample should always be gauged when the sample is wet, or it should be noted otherwise.

4.2.3. Predominant Grain-Size Description

The first step in describing a sediment sample is visually estimating the size range and percentage of the various grain sizes in the sample. Reference should be made to standard geologic comparators for assessment of the grain size(s).

The primary grain-size descriptor indicates the predominant grain size, as judged visually, of the sample. The descriptor is always capitalized and underlined. Possible descriptors include: CLAY, SILT, SAND, and GRAVEL (GRANULES, PEBBLES, COBBLES, and BOULDERS). These correspond to the standard Wentworth size-classification scheme used for describing sediments for geologic purposes. Size classifications for CLAY through GRAVEL are presented in Table 1. The descriptor should also include an indication of the relative size range of the sample within the predominant grain size (for example, "fine-to-medium sand", "coarse sand", etc.). Although Table 1 includes divisions of the silt category, this is applicable only to sediment samples analyzed by pipette or hydrometer and cannot be distinguished in the field.

The presence of other grain sizes, in addition to the predominant material is also included in the grain-size descriptor. Appropriate grain sizes are the same as for the predominant grain size of the material (clay, silt, etc.), however only the initial letter of the word is capitalized. The description should also include an indication of the relative amount of the minor components. Appropriate indicators for the relative percentages present are provided in Table 2.

It is generally not considered possible to visually distinguish between clay and silt. Estimation of the silt/clay content of a sample should be based upon the plastic properties of the sample. The plastic properties of the sample may be estimated by taking an approximately 1 cubic centimeter ball of the sediment and attempting to roll a thread of the material between the palms of the hand. The minimum size of the thread which may be rolled may be compared to the values presented in Table 3 and the plasticity estimated. A comparison of the minimum thread diameter which may be formed with the information presented in Table 3 provides an approximate silt/clay content estimate for sand-silt-clay sediments and composite clay sediments.

4.2.4. Modifiers

Various modifiers may be added to the basic sediment description to further describe the geologic character of the sample.

For sand or coarser-sized material, the relative degree of sorting, the sphericity, and angularity should also be recorded. Sorting may be visually estimated. Sphericity and angularity, however, should be made with reference to an accepted comparator. A chart illustrating various degrees of sphericity and angularity is attached as Figure 1.

The mineralogy of the sample should also be recorded. Reference should be made to the relative percentages, grain size(s), and sphericity of the mineral particles (especially where it differs significantly from that of the predominant grain-size material).

Other information which should be recorded for each sample includes an estimate of the density and cohesiveness of the sample (made from blow counts where applicable, or other specific instrumentation where appropriate), the relative moisture content of the sample, visible sedimentary structures, and any odors or staining noticeable during logging. Tables 3 and 4 present appropriate terms for describing the plasticity, density, and cohesiveness of sediment samples.

Especially important is an indication that a specific portion of the material may represent "sluff" or material collapsed from the borehole walls.

4.3. Written Sediment Descriptions

The written sediment description may be made as either an unabbreviated or an abbreviated description. Both methods should relate the same information, however the abbreviated description is better suited for field use.

In an unabbreviated description, all of the words of the description should be written out in their entirety. The descriptor should include pertinent information regarding the sample's size gradation, consistency, color, and relative grain size, as described previously. The color descriptor should precede the primary sediment component name, while additional details such as the plasticity, mineralogy, visible sedimentary structures, etc., should follow the sediment component name.

An example of an unabbreviated description is:

Red-brown (5YR 4/4), fine to coarse SAND, little fine Gravel, little Silt, moist, moderately well sorted, low sphericity, Gravel waterworn, Sand subangular, micaceous.

Since the Burmister system is intended to provide a means for describing uniform sediments, three "special" cases should be addressed.

First, the Burmister system is intended only to describe the sediment. Where a genetic classification of the material is significant, it should be added as a separate statement at the end of the description. For example:

> **Olive gray (5Y 4/2), coarse to fine SAND, some fine Gravel, little Silt, moist, poorly sorted, sub-rounded to angular, dense. TILL.**

A genetic classification should only be used when the origin of the material is very clear and not simply a field interpretation of possible depositional environment.

Second, in the case where the sediment sample is heterogeneous (for example, a varved silt and clay), each component should be described individually, and reference should be made to the relative percentages of each component and to the interlayering. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY and SILT, alternately layered, medium to high overall plasticity. Layers: CLAY layers, 3/8" to 5/8" thick, comprise 60%" of sample. SILT layers, 1/8" to 3/8" thick, comprise 40%" of sample. VARVED CLAY and SILT.**

Third, when one material grades uniformly into a distinct sediment type, the individual components should be described separately and the gradation noted. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY, medium overall plasticity, grading into soft, reddish-brown (5YR 4/4), SILT, trace Clay, low overall plasticity.**

In the abbreviated sediment descriptions, the sample information is presented in a manner analogous to that for the unabbreviated description substituting standard abbreviations for specific portions of the text. Abbreviations for the identifying terms in the Burmister system are presented in Tables 2, 3, and 4. Mineralogic and geologic abbreviations may be found in standard geologic and mineralogic texts and field manuals. Except for the use of abbreviations, the abbreviated description is completely analogous to the unabbreviated description.

For the sake of consistency in describing unconsolidated sedimentary materials, the description should follow the order and general definitions presented in Table 5.

4.4. Recording Descriptions

4.4.1. Geologic Boring Logs

Attached to this SOP is a copy of LEA's standard geologic boring log form. This log should be completed for each boring that is completed. The heading information is self-explanatory. The body of the log contains space for information for each sampled interval in the boring. The following information should be recorded:

Depth Interval	The upper and lower depths from which the sample was collected.
Sample No.	The sample number, as obtained from LEA Data Management, assigned to this sample.
Recovery	The length of the recovered sample and the length of the sampler (in consistent units). The percent recovery will be calculated by the LEA Data Management program.
Blows/6"	The number of blow counts per 6" interval for the sample. Alternately, the downhole pressure or other pertinent information regarding the required drilling or sampling force.
Sample Description	The sample description using the guidelines and order presented in Section 3.0 and Table 5.
PID/FID	The headspace reading from a PID or FID in ppm.

The comments section of the form should be used to record general observations regarding drilling conditions, backfilling of the borehole, or other pertinent information regarding drilling the borehole.

4.5. Computer Data Entry

After a project is completed, copies of the Geologic Boring Log forms should be submitted for computer data entry. A completed copy of the Geologic Soil Boring/well Completion Log Request Form should be attached to the log forms.

5. Quality Assurance/Quality Control

5.1. Soil and sediment logging will be conducted in accordance with this SOP to ensure quality and consistency in field activities.

5.2. Field paperwork will be reviewed by office staff personnel and/or project manager to ensure completeness and accuracy in logging records.

6. References

6.1. None

END OF DOCUMENT

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification	
Use Wire Squares	4096	4,096,000	-20	Boulder	GRAVEL
	1024	1,024,000	-10		
	256	256,000	-8		
				Cobble	
	64	64,000	-6		
				Pebble	
	16	16,000	-4		
5	4	4,000	-2		
				Granule	
6	3.36	3,360	-1.75		
7	2.83	2,830	-1.50		
8	2.38	2,380	-1.25		
10	2.0	2,000	-1.00		
				Very Coarse Sand	SAND
12	1.68	1,680	-0.75		
14	1.41	1,410	-0.50		
16	1.19	1,190	-0.25		
18	1.00	1,000	0.00		
				Coarse Sand	
20	0.84	840	0.25		

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
25	0.71	710	0.50	
30	0.59	590	0.75	
35	0.50	500	1.00	
				Medium Sand
40	0.42	420	1.25	
45	0.35	350	1.50	
50	0.30	300	1.75	
60	0.25	250	2.00	
				Fine Sand
70	0.210	210	2.25	
80	0.177	177	2.50	
100	0.149	149	2.75	
120	0.125	125	3.00	
				Very Fine Sand
140	0.105	105	3.25	
170	0.088	88	3.50	
200	0.074	74	3.75	

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
230	0.0625	62.5	4.00	
				Coarse Silt MUD
270	0.053	53	4.25	
325	0.044	44	4.50	
Analyzed by Pipette or Hydrometer	0.037	37	4.75	
	0.031	31	5.0	
				Medium Silt
	0.0156	15.6	6.0	
				Fine Silt
	0.0078	7.8	7.0	
				Very Fine Silt
	0.0039	3.9	8.0	
				Clay (Note: Some use 2: (or 9N) as the clay boundary.)
	0.0020	2.0	9.0	
	0.00098	0.98	10.0	
	0.00049	0.49	11.0	
	0.00024	0.24	12.0	
	0.00012	0.12	13.0	

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
	0.00006	0.06	14.0	

Table 2
Modified Burmister System Descriptors

Fractions		Proportion Descriptors		
(+)	Major Fraction	Quantity	Descriptor	Abbreviation
(-)	Minor Fraction	35% - 50%	and	a
e.g., a medium to coarse SAND which is predominantly medium grained would be written as: m(+) - c SAND		20% - 35%	some	s
		10% - 20%	little	l
		1% - 10%	trace	t
Modifiers: (+) Upper a of the range (-) Lower a of the range				

Table 3
Plasticity of Sediment Samples

Material	Symbol	Feel	Ease of Rolling Thread	Minimum Thread Diameter	Plasticity Index	Plasticity
Clayey SILT	CyM	Rough	Difficult	1/4"	1 to 5	Slight (Sl)
SILT & CLAY	M & C	Rough	Less Difficult	1/8"	5 to 10	Low (L)
CLAY & SILT	C & M	Smooth, dull	Readily	1/16"	10 to 20	Medium (M)
Silty CLAY	MyC	"Shiny"	Easy	1/32"	20 to 40	High (H)
CLAY	C	Waxy, very shiny	Easy	1/64"	40 +	Very High (VH)

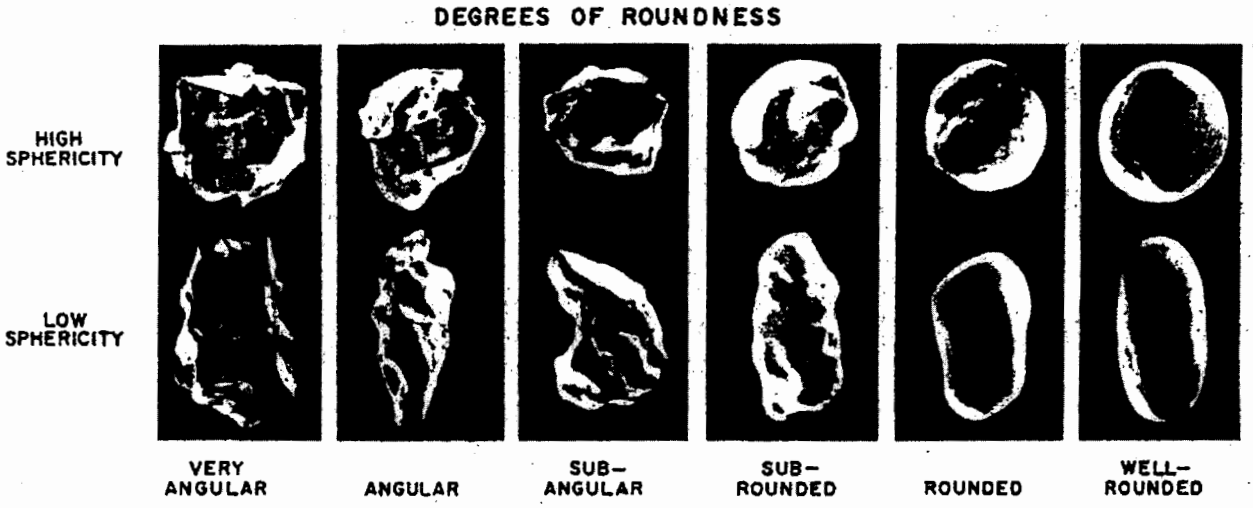
Table 4
Density and Cohesiveness of Sediment Samples

Density of Cohesionless Soils		Consistency of Cohesive Soils	
Blow Counts	Relative Density	Blow Counts	Consistency
0 to 4	Very Loose	0 to 2	Very Soft
5 to 9	Loose	2 to 4	Soft
10 to 29	Medium Dense	4 to 8	Medium
30 to 49	Dense	8 to 15	Stiff
50 to 79	Very Dense	15 to 30	Very Stiff
80 or more	Extremely Dense	30 or more	Hard

Table 5
Description of Sediment Properties

Sediment Parameter	Properties
Color	The color of the sample should be described for the wet sediments. If possible the color should be referenced to a standard color chart such as a Munsell7 Color Chart.
Primary Grain Size	Primary grain size refers to the size of the predominant sedimentary size class within the material (as judged visually). The grain size divisions should conform to the standard Wentworth Scale divisions, as shown in Table 1.
Secondary Grain Size(s)	Secondary grain size(s) refer to material which, as a grain-size group, comprises less than the majority of the sediment. Aside from stating the size classification, the relative percentage of the material must be stated. The grain size divisions should conform to the standard Wentworth Scale divisions as shown in Table 1. To describe the approximate percentage of the secondary grain size(s) present, qualifiers shown in Table 2 should be used.
Moisture Content	The moisture content of the sample should be described as dry, slightly moist, moist, or wet. Gradation from one state to another should be recorded as, for example, moist to wet, or moisty wet.
Sorting	The relative degree of sorting of the sediment should be indicated as poor, moderate, good, or very good. The degree of sorting is a function of the number of grain size classes present in the sample; the greater the number of classes present the poorer the sorting. In addition, for samples composed only of sand, the relative degree of sorting is a function of the number of sand-size subclasses present.
Sphericity	Sphericity is a measure of how well the individual grains, on average, approximate a sphere. The average sphericity of the sand and larger size fractions should be described as low, moderate or high. A chart illustrating various degrees of sphericity is presented in Figure 1.
Angularity	Angularity, or roundness, refers to the sharpness of the edges and corners of a grain (or the majority of the grains). Five degrees of angularity are shown in Figure 1: Angular (sharp edges and corners, little evidence of wear); Subangular (edges and corners rounded, faces untouched by wear); Subrounded (edges and corners rounded to smooth curves, original faces show some areas of wear); Rounded (edges and corners rounded to broad curves, original faces worn away); and, Well Rounded (no original edges, faces, or curves, no flat surfaces remain on grains).
Sedimentary Structures	Sedimentary structures are such things as varved layers, distinct bedding, or stratification.
Density -or- Cohesiveness	The density of cohesion of a sample (for the purposes of this application) refer to the sample's resistance to penetration by a sampling device. Density is used in reference to sediments primarily silt-size and coarser while cohesiveness is used in reference to primarily clay-sized sediments. Density or cohesiveness can be assessed from the number of blows from "standard" split-spoon sampling (i.e., 140# hammer, 30" fall, 2" X 2" (O.D., 1 3/8" I.D.)) split-spoon samplers according to the scale in Table 3.

FIGURE 1

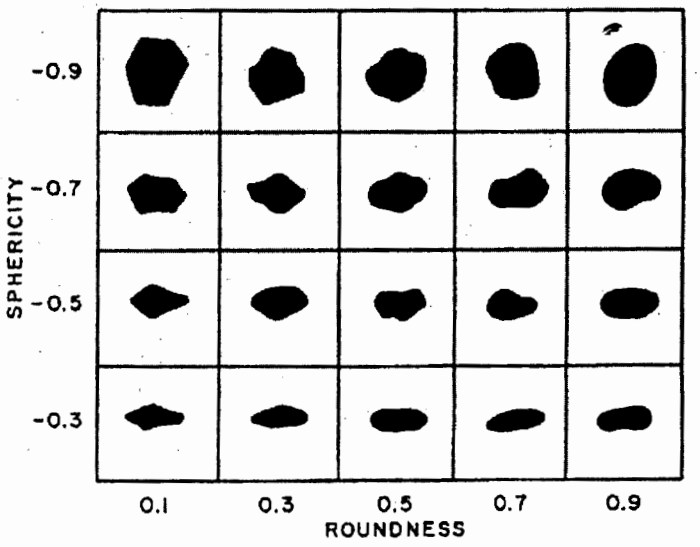


SPHERICITY

0.3	LOW
0.5 & 0.7	MODERATE
0.9	HIGH

ROUNDNESS

0.1	ANGULAR
0.3	SUBANGULAR
0.5	SUBROUNDED
0.7	ROUNDED
0.9	WELL ROUNDED



Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Collecting and Preserving Soil and Sediment Samples for Laboratory Determination of Volatile Organic Compounds

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Laboratory and Data Validation Manager

04/01/12
Nick D. Skoularikis **Date**
Director of Quality

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Standard Operating Procedure
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Collecting and Preserving Soil and Sediment Samples for Laboratory Determination of Volatile Organic Compounds

1. Purpose and Scope

1.1. Background

Volatile organic compounds (VOCs) are lost from soil and sediment samples (hereinafter referred to as soil samples) due to volatilization and biodegradation during collection, storage and analysis. This leads to low-biased results. Some commonly used techniques are prone to relatively large losses and results that are potentially biased quite low. Such techniques involve collection of disturbed soil samples and storage in soil jars without air-tight seals. This standard operating procedure (SOP) describes soil sample collection and preservation techniques designed to minimize such losses. The procedure below has been adapted from the referenced guidance document issued by the Connecticut Department of Environmental Protection (DEP, February 2006).

2. Definitions

2.1. En Core® Sampler: is a disposable volumetric sampling device designed to assist field personnel in taking soil samples with minimal handling and maximum accuracy. (Example Supplier: En Novative Technologies, Inc. Telephone number: 888-411-0757)

2.2. Low Concentration Samples: the specific concentration may vary between laboratories, but generally "low" refers to a concentration below approximately 200 µg/kg.

2.3. High Concentration Soil Samples: the specific concentration may vary between laboratories, but generally "high" refers to any concentration greater than 200 µg/kg.

2.4. Undisturbed samples are those for which the sampling device minimizes break-up of the structure of the soil to the extent practicable. Undisturbed samples can be collected using such techniques as:

- Coring, such as the methods utilizing split-spoon sampling devices, MacroCores ™, and large-bore direct-push samplers;
- Bulk sampling, for example, undisturbed soil volumes collected using a backhoe bucket from sidewalls of trenches and excavations where direct access to the sampling location (sidewall or bottom) is not safe; and
- Direct collection of sub-samples from the subsurface.

3. Equipment

- Electronic field balance accurate to 0.1 grams.
- Water.
- Methanol.
- Sodium bisulfate solution.
- Magnetic stir bar.
- VOA vials (40 ml).
- 20 gram sample container (for percent solids). A different size container may also be suitable.
- En Core®-type Sampler (5, 10 and 25 gr samplers).
- Decontamination solutions, including distilled water, 10 percent methanol, 10 percent nitric acid.
- Clean disposable gloves.
- Re-sealable bags.
- Utility knife.
- Stainless steel spatula or dedicated wood spatula.
- Paper towels.
- Indelible ink marker.
- Field paperwork.
- Chain of custody seals and sample labels.

4. Preliminary Sampling Procedures

4.1. Sample Bottles

4.1.1. It is recommended that a laboratory request form be completed and submitted to the laboratory with the following information:

- Project name.
- LEA commission number.
- Date of submittal and date needed.
- Quantity of sample locations and sample points at each location.
- Type(s) of samples.
- Analytes, detection limits and QA/QC needed.

- Cooler(s) required.
- Number of chain of custody forms requested.

4.1.2. Check bottles against laboratory request form for completeness. The bottles and/or En Core®-type Sampler should also be checked for damage and cleanliness. Confirm with laboratory personnel the adequacy of the preservatives used.

4.1.3. The total number of sample sets shall be increased by 10 percent to allow for possible breakage during transport to sites or other contingencies. At a minimum one additional sample bottle set shall be obtained per event.

4.1.4. Obtain preprinted labels and paperwork through the LEA information management system.

4.1.5. Label/date bottles and/or En Core®-type Sampler in the field prior to sample collection. Check for accuracy.

4.1.6. A cooler should be obtained from the laboratory and adequate ice or cold packs should be provided to ensure that the collected samples remain at 4 degrees Celsius during transport. Packing material should also be obtained to ensure against breakage during transport.

4.2. Site Preparation

4.2.1. A level table shall be placed within the exclusion zone and covered with polyethylene sheeting.

4.2.2. Decontaminated spatulas shall be placed on the table. Sample bottles and En Core®-type Sampler shall be placed in a convenient location and in order of sample collection.

4.2.3. PID and plastic bags shall be placed on the table for VOC screening, if necessary.

4.3. Cleaning and Decontamination

4.3.1. Prior to collecting a soil sample, the LEA representative will ensure that all necessary sampling equipment is clean and decontaminated according to the procedure outlined in Section 4.1.3.3 or according to the site specific work plan if different than below. Disposable equipment does not have to be decontaminated.

4.3.2. Upon completion of all sampling requirements and prior to leaving the site, all equipment used for sampling shall be cleaned and decontaminated according to the procedure outlined in Section 4.2.3 or according to the site specific work plan if different than below. All generated decontamination fluids shall be containerized and disposed of in accordance with the site-specific work plan and all municipal, state, and federal requirements.

4.3.3. The decontamination procedure of durable sampling equipment will be accomplished via swabbing the surfaces with a solvent. The order of decontamination is as follows:

- Detergent swab.
- DI water rinse.
- Hexane rinse (to be used if separate-phase petroleum product, other than gasoline is present).
- DI water rinse.
- 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
- DI water rinse.
- Methanol rinse (less than 10 percent solution).
- Air dry.

4.4. Personal Protective Equipment

4.4.1. All personal protective equipment (PPE) should be donned and maintained in accordance with the site-specific work plan or health and safety plan during all sampling procedures. In the event that no PPE has been specified for a particular sampling event, disposable latex gloves should be donned, as a minimum, during all sampling procedures. All LEA cardinal rules shall be followed. At a minimum, steel-toe shoes, hard hats, and safety glasses shall be worn at all times, as well as the company-provided vest. Noise protection is required when drilling equipment operate in the vicinity.

4.5. Overview of Sampling Approach

The soil sample collection procedure for determination of VOCs is a two-step process:

Step 1 – Collect an undisturbed soil sample, as defined below, from the subsurface, or expose the targeted area from where a sub-sample for laboratory analysis will be collected,

Step 2 – Collect a representative sub-sample from the undisturbed sample or directly from the exposed subsurface.

4.6. Collection of Undisturbed Samples

When collecting samples for laboratory determination of VOCs, the device used to collect the undisturbed soil sample shall be removed as soon as possible from the subsurface; and most importantly, **the sub-samples that are intended for VOC determination must be collected as soon as possible (ideally within five minutes of collection of the undisturbed sample) to reduce loss of VOCs due to volatilization.** Attempts must be made to further minimize loss of VOCs by managing the sample collection environment (i.e. limiting sun, wind, heat, etc.).

Planning and careful preparation are critical for a successful sampling event. Checklists should be used to ensure that all necessary equipment and supplies are present and in proper working order and that the following conditions are achieved:

- Undisturbed soil to be collected for sub-sampling should be collected in a manner that controls the acquisition of the samples such that they do not "stack up" awaiting logging and sub-sampling;
- Cores should not be stored in small- or large-diameter sampling devices or capped liners (brass, acetate, lexan, polycarbonate etc.);
- Cores should not be exposed to extreme weather conditions, such as direct sunlight, rain and wind, and sub-sample collection should occur in an area that minimizes exposure to the elements (e.g. under cover, shady areas); and
- Undisturbed soil samples cannot be transferred from the core sampler to a secondary container (empty sample bottle, re-sealable bag, aluminum foil, or sampling bowls) for future sample collection.

Leaving samples in core tubes, split-spoons, covered liners, or intermediate containers will lead to VOC losses and will thus yield poor quality data.

To the extent practicable, undisturbed samples should always be collected. However, in some cases, collection of a disturbed sample using a hand auger may be necessary to characterize source areas or other critical locations. If disturbed soil samples must be collected, the rationale for collecting such disturbed samples

must be provided. However, under no circumstances should a sub-sample be collected from a disturbed sample that was previously used for field-screening purposes.

4.7. Collection of the Soil Sub-Sample for Determination of VOCs

Sub-samples are those samples that are submitted to the laboratory for analysis for VOCs. Sub-sampling of the undisturbed soil sample must be performed using a dedicated or decontaminated small-diameter sampler. Sub-samples must be collected as soon as possible from the undisturbed sample (ideally within five minutes) after the undisturbed soil sample is collected.

5. Overview of Sub-Sampling Devices

Sub-sampling of the large-diameter or bulk sampling device for VOCs must be performed with the use of a dedicated or decontaminated small-diameter core sampler. The small-diameter core sampler should fit inside the mouth of the sample container to avoid loss of sample, prevent damage to the sealing surfaces or container threads and ease the soil transfer process.

5.1. Procedure for Obtaining Test Samples to Determine Sub-Sample Volume

The purge and trap laboratory procedure used to determine volatile organic compounds requires approximately equal amounts of soil and liquid to be used in the analysis. If the ratio of soil to liquid is too high, the soil will not be adequately dispersed in the liquid, leading to poor results. If the amount of soil is too low, the detection limits will be increased, potentially rendering the results to be of limited use. It is better to use a slightly lower weight of soil than a higher weight, as the regulatory limits are, in general, significantly higher than the typical laboratory reporting limit for volatile analytes.

The small-diameter core sampler must be able to deliver a minimum of 5 grams of sample ($\approx$ 3 cm^3 of sample, assuming a density of 1.7 g/cm^3) into a 40-ml VOA vial. While most small-diameter core samplers can only be used for sampling and placement into the appropriate sample containers, only the En Core® -type samplers can be used for sampling, storage, and transportation of the sample to the laboratory.

It is important that the small-diameter core sampler provide the required mass of sample material. As such, a test sample (of similar matrix to that being sampled) may be collected and weighed to determine the amount of soil needed to obtain the required mass of sample material for each type of small-diameter core sampler and analytical method.

5.1.1. The procedure for obtaining a test sample is as follows:

5.1.1.1. Using a small electronic portable scale with an accuracy of 0.1 grams, weigh the empty small-diameter core sampler (e.g., disposable syringe) to the nearest 0.1 grams. The scale must be calibrated before use and intermittently checked during the day to ensure accurate weight measurement. Calibration information must be recorded in the field logbook. A translucent cover can be placed over the scale during the weighing process to negate variations caused by wind.

5.1.1.2. Push the small-diameter core sampler test sample into the matrix to collect the required mass of material (3 cm^3 should yield approximately 5 grams of sample [wet weight]).

5.1.1.3. Wipe clean any soil adhering to the outside of the small-diameter core sampler before weighing.

5.1.1.4. If the weight is above the required amount, remove excessive soil by extruding a small portion of the core and cutting it away with a decontaminated trowel or spatula. If the weight is below the weight limit, obtain additional soil by reinserting the small-diameter core sampler into the soil core. Re-weigh after each addition or removal of sample from the small-diameter core sampler until the target weight is attained. Note the sample volume and amount in the small-diameter core sampler.

5.1.1.5. Discard the test sample appropriately.

5.1.1.6. Use the volume of the test sample as a guide in collecting the appropriately sized sub-sample of a similar matrix. **Additional test samples should be weighed whenever a change in the matrix is observed.**

5.2. Overview of Procedure for Collection of Sub-Samples

The goal of soil sampling for the purposes of evaluating concentrations of contaminants in soil is to obtain a representative soil sample in accordance with the data quality objectives for the project. Often, this is accomplished using an appropriate small-diameter core sampler.

Different sample matrices (e.g., sand, gravel, clay, fill) will be encountered and may warrant slightly different sub-sampling field techniques. The goal for all techniques is to collect the sub-sample as quickly as possible while minimizing disruption. Environmental professionals should use good judgment as to how to handle samples that do not fit into the samplers and must describe the rationale for any deviations from this guidance.

The procedure for obtaining soil sub-samples is as follows:

5.2.1. Once the sampling interval has been selected, trim off the exposed surface of the matrix to expose a fresh surface. A loss of VOCs from the surface of the matrix will occur even if the matrix has been exposed for a short period of time (during screening, etc.). Removal of the unwanted surficial material can be accomplished by scraping the matrix surface with a decontaminated spatula or trowel. Soil sampling must commence immediately once a fresh surface has been exposed.

5.2.2. If hand augering, collect the sub-sample directly from the bottom of the hand auger immediately after pulling it from the ground. Do not attempt to remove the soil from the hand auger first. Hand augering may be needed occasionally to establish utility clearance.

5.2.3. Using the test sample as a guide, push the small-diameter core sampler into the matrix to collect a volume of material that will yield the required mass of sample (wet weight) as determined by the analytical method.

5.2.4. Depending upon the texture, depth or moisture content, insert the small-diameter core sampler straight into the matrix, on an angle. Multiple insertions can be made to obtain the required sample weight.

5.2.5. After sample collection, wipe the outside of the small-diameter core sampler to remove any excess material adhering to the barrel.

5.2.6. Immediately open the sample container and extrude the soil core into the sample container that will be submitted to the laboratory. Avoid splashing any preservative, if present, out of the sample container by holding the container at an angle while slowly extruding the soil core into the sample container. Do not immerse the small-diameter core sampler into the preservative. If an En Core®-type sampler is to be used for storage and shipment, prepare the sampler for shipment according to manufacturers instructions.

5.2.7. Collect the required number of sample containers or En Core® -type samplers based on the chosen preservation and analytical methods, as discussed in the subsequent section on soil preservation methods.

5.2.8. Include an additional sample for determination of soil moisture content and sample screening.

5.2.9. Ensure the threads and cap of the sample container or En Core®-type sampler are free of soil particles. Use a clean paper towel to remove soil particles from the threads and sealing surface of the sample container or En Core® -type sampler. The presence of soil particles will compromise the container's seal and may result in loss of preservative or VOCs. This loss ultimately may invalidate the sample analysis. Always make sure the sample lid is firmly secure.

5.2.10. Record the laboratory and field identification numbers in the field notes and on the chain of custody. Record the sample identification information on the sample container using a suitable marker. Container labels with wire or rubber band attachments can be used, provided they can be removed easily for sample weighing. Do not attach any additional adhesive-backed labels or tape to the sample containers unless requested by laboratory or specified in manufacturer instructions. This will increase the weight of the sample container and the laboratory will not be able to determine the sample weight.

5.2.11. After sample collection, immediately return the containers to an iced cooler. Sample containers from different locations should be placed in separate re-sealable bags to help avoid cross-contamination. The laboratory sample number or field sample identification number may be placed on the bag and cross-referenced on the chain of custody. The laboratory performing the analysis will determine the sample weight.

6. Preservation of the Soil Sample

6.1. Overview of the Soil Preservation Procedure

The preservation of samples for VOC analysis can be initiated either at the time of sample collection or in the laboratory. This section deals with the preservation of soil samples in the field using chemical and physical preservation methods.

It is important that the laboratory analytical methods, field preservation methods, appropriate sample containers and sample holding times are determined prior to mobilizing to the field. It is also necessary to consider that additional sample

containers maybe required for various quality control/ quality assurance (QA/QC) samples such as matrix-spike and matrix-spike duplicates (MS/MSD). The number of extra containers required varies by laboratory and analytical procedure.

In addition to the various chemical preservation methods, samples must be physically preserved (e.g. iced or frozen) in the field immediately upon sample collection. It is important to match up the correct physical preservation method with the appropriate sample container and field chemical preservation method. According to USEPA Contract Laboratory Protocol (CLP) Guidance for Field Samplers, the physical preservation methods are described as:

Iced – soil and sample containers are cooled to 4° ± 2°C.
Frozen – soil and sample containers are cooled to between -7° to -15° C.

Sample containers that will be frozen should be placed on their side prior to freezing process to prevent breakage. Additional aliquots for screening and moisture determination need only be iced and kept cooled at 4° ± 2°C; these sample containers should not be frozen. ***Sample containers and En Core®-type samplers should not be frozen below -20° C, as the integrity of the container seals, o-rings and septum may be compromised by the freezing, resulting in the loss of VOCs upon thawing of the sample.***

In addition, the use of dry ice to freeze samples immediately upon sample collection or for use during shipment is not recommended. Dry ice, which is at a temperature of -78.5 ° C, will lower the temperature of the sample container below the design specifications, causing damage to the glass, septum, seals, o-rings, and cap. In addition, dry ice has specific handling, storage and shipping requirements that outweigh its usefulness to the field sampling team.

6.2. Sub-Soil Sample Collection Procedures

When collecting soil sub-samples for determination of volatile organic compounds, up to four types of samples may be required:

- A high-concentration-level sample (two options)
- A low-concentration-level sample (four options)
- An SPLP/TCLP sample
- A sample for percent solids determination

When the expected VOC concentrations are not known, it is recommended to collect both the high- and low-concentration samples. The analysis procedure should be coordinated with the laboratory. For example, one approach would be to analyze one first (and if needed, the second one).

Additional samples may be necessary for matrix spikes and matrix spike duplicates. Field and trip blanks also may be required.

An overview of the various options for sample collection procedures is attached as
Figure 1.

6.3. High-Concentration Sub-sample Collection Procedures

There are two options for collection of the high-concentrations sample: collection of the sample in a methanol preserved VOA vial or using En Core®-type samplers.

6.3.1. OPTION 1 – High Concentration Sample, Methanol Preservation

Supplies:

- Electronic field balance accurate to 0.1 grams
- Minimum of one VOA vial (40 ml), pre-weighed and containing 5 or 10 ml of methanol
- Sub-sampling device

6.3.1.1. Label the vials as appropriate. Do not add excessive labels (e.g. more weight) to the pre-weighed vials.

6.3.1.2. Weigh the vials to confirm the recorded vial weight.

6.3.1.3. Select the area to be sampled as soon as possible after the soil is exposed.

6.3.1.4. Obtain a test sample, using the coring device and field balance, to determine approximately how much volume of soil will yield equal grams of soil to methanol (5 or 10 ± 1 grams). This step may be skipped when the amount of soil needed for a particular matrix at a site has been determined.

6.3.1.5. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.3.1.6. Rapidly insert the syringe into the soil to obtain the sample. Quickly extrude the sample into the vial containing the methanol. Wipe off the threads and cap; seal the vial.

6.3.1.7. Using the field balance, weigh and record the weight of the vial. A record of the weight must be submitted with the samples to the laboratory.

6.3.1.8. Place sample in cooler with ice.

6.3.1.9. Collect separate sample for percent solids, if necessary.

6.3.2. OPTION 2 - High-Concentration Sample, Using En Core®-Type Samplers

Supplies:

- One 5 or 10-gram En Core®-type Sampler

6.3.2.1. Label the sample as appropriate.

6.3.2.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.3.2.3. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.3.2.4. Rapidly insert the sampler into the soil to obtain the sample. Quickly wipe the contact areas to remove any soil particles, close and seal the device.

6.3.2.5. Place devices in re-sealable pouch, place in cooler on ice.

6.3.2.6. Collect separate sample for percent solids, if necessary.

6.3.2.7. Samples must be frozen, preserved or analyzed within 48 hours of collection.

6.4. Low-Concentration Sub-Sample Collection Procedures

There are four options for collecting low-concentration soil samples:

- Collection in VOA vials containing water.
- Collection in empty VOA vials.
- Collection in VOA vials containing sodium bisulfate.
- Collection using En Core®-type devices.

All of the procedures using VOA vials are essentially the same, except for the media contained in the vial. It should be noted that sodium bisulfate preservation might lead to formation of acetone in samples containing high amount of humic material. Additionally, certain analytes, such as styrene, vinyl chloride, trichloroethylene (TCE), may be decomposed by the bisulfate, leading to low-biased results. Also carbonate rich soils may effervesce. The effervescing will result in significant losses of VOCs, and in such cases the sodium bisulfate cannot be used. Environmental professionals should use caution in using this preservation technique. **For these reasons, the DEP recommends use of the one of the other low-level preservation options. If the sodium bisulfate preservation option is used, the data should be considered in relation to the conceptual site model.**

6.4.1. OPTION 1 - Low-Concentration Sample, Using VOA Vials Containing Water

Supplies:

- Electronic field balance accurate to 0.1 grams.
- 2 VOA vials (40 ml), pre-weighed and containing 5 ml of water and a magnetic stir bar.
- Sub-sampling device.

6.4.1.1. Label the vials as appropriate. Do not add excessive labels (e.g. more weight) to the pre-weighed vials.

6.4.1.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.4.1.3. Obtain a test sample, using the coring device and field balance, to determine approximately how much volume of soil will yield 5 grams of soil. Note that the sample weight should be within 1 gram of the nominal weight, e.g. 5± 1 gram. This step may be skipped when the amount of soil needed for a particular matrix at a site has been determined.

6.4.1.4. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.4.1.5. Rapidly insert the syringe into the soil to obtain the first 5-gram sample. Quickly extrude the sample into one of the two vials containing the water. Wipe off the threads and cap; seal the vial.

6.4.1.6. Repeat steps 6.4.1.4 & 6.4.1.5 for the second vial containing water.

6.4.1.7. Using the field balance, weigh and record the weight of each vial. A record of the weight must be submitted with the samples to the laboratory.

6.4.1.8. Place all samples in cooler with ice.

6.4.1.9. Collect separate sample for percent solids, if necessary.

6.4.1.10. Samples must be frozen or analyzed within 48 hours of collection.

6.4.2. OPTION 2 - Low-Concentration Sample, Collection in Empty VOA Vials

Supplies:

- Electronic field balance accurate to 0.1 grams.
- 2 VOA vials (40 ml), pre-weighed containing a magnetic stir bar.
- Sub-sampling device.

6.4.2.1. Label the vials as appropriate. Do not add excessive labels (e.g. more weight) to the pre-weighed vials.

6.4.2.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.4.2.3. Obtain a test sample using the coring device and field balance, to determine approximately how much volume of soil will yield 5 grams of soil. Note that the sample weight should be within 1 gram of the nominal weight, e.g. 5± 1 gram. This step may be skipped when the amount of soil needed for a particular matrix at a site has been determined.

6.4.2.4. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.4.2.5. Rapidly insert the syringe into the soil to obtain the first 5-gram sample. Quickly extrude the sample into one of the two vials. Wipe off the threads and cap; seal the vial.

6.4.2.6. Repeat steps 6.4.2.4 & 6.4.2.5 for the second vial.

6.4.2.7. Using the field balance, weigh and record the weight of each vial. A record of the weight must be submitted with the samples to the laboratory.

6.4.2.8. Place all samples in cooler with ice.

6.4.2.9. Collect separate sample for percent solids, if necessary.

6.4.2.10. Samples must be frozen or analyzed within 48 hours of collection.

6.4.3. OPTION 3: Low-Concentration Sample, Collection in VOA Vials Containing Sodium Bisulfate

Supplies:

- Electronic field balance accurate to 0.1 grams.
- 2 VOA vials (40 ml), pre-weighed containing 5 ml sodium bisulfate solution and a magnetic stir bar.
- Sub-sampling device.

6.4.3.1. Label the vials as appropriate. Do not add excessive labels (e.g. more weight) to the pre-weighed vials.

6.4.3.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.4.3.3. Obtain a test sample using the coring device and field balance to determine approximately how much volume of soil will yield 5 grams of soil. Note that the sample weight should be within 1 gram of the nominal weight, e.g. 5 ± 1 gram. This step may be skipped when the amount of soil needed for a particular matrix at a site has been determined.

6.4.3.4. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.4.3.5. Rapidly insert the syringe into the soil to obtain the first 5-gram sample. Quickly extrude the sample into one of the two vials containing the bisulfate solution. Wipe off the threads and cap; seal the vial.

6.4.3.6. Repeat steps 6.4.3.4 and 6.4.3.5 for the second vial.

6.4.3.7. Using the field balance, weigh and record the weight of each vial. A record of the weight must be submitted with the samples to the laboratory.

6.4.3.8. Place all samples in cooler with ice.

6.4.3.9. Collect separate sample for percent solids, if necessary.

6.4.4. **OPTION 4 - Low-Concentration Sample, Collection Using En Core®-Type Devices**

Supplies:

- Two 5-gram En Core®-type sampling devices

6.4.4.1. Label the sample as appropriate.

6.4.4.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.4.4.3. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.4.4.4. Rapidly insert the sampler into the soil to obtain the first sample. Quickly wipe the contact areas to remove any soil particles, close and seal the device. Place device in re-sealable pouch

6.4.4.5. Repeat steps 6.4.4.3 and 6.4.4.4 for the second En Core®-type device.

6.4.4.6. Place both devices in re-sealable pouches, place in cooler on ice.

6.4.4.7. Collect separate sample for percent solids, if necessary.

6.4.4.8. Samples must be frozen, preserved or analyzed within 48 hours of collection.

6.5. Collection of Soil Samples for TCLP or SPLP Volatile Organic Analysis

The holding time for soil samples to begin the leaching procedure for TCLP or SPLP extraction for VOC analysis is 14 days from collection. If the environmental professional requests the laboratory to hold the samples until the results of the total (e.g., mass) analysis for VOCs is available, the total analysis

must be available within a time-frame that will permit the environmental professional to give the laboratory sufficient notice to be able to start the SPLP/TCLP leaching within the 14-day holding time.

Supplies:

- 25-gram En Core®-Type Sampler.

6.5.1.1. Label the sampler as appropriate.

6.5.1.2. Select the area to be sampled as soon as possible after the soil is exposed.

6.5.1.3. Scrape away the surface material from the area to be sampled to expose fresh soil.

6.5.1.4. Rapidly insert the sampler into the soil to obtain the sample. Wipe off the threads and cap; seal the sampler.

6.5.1.5. Place sampler in re-sealable pouch and place in cooler with ice.

6.5.1.6. Samples must be frozen or leached within 48 hours of collection.

6.6. Collection of Soil Samples for Percent Solids Determination

A laboratory typically can use any container submitted for analysis to determine the percent solids of a soil, **except a container submitted for VOC analysis.** If the other laboratory analyses, besides volatile organic compounds (either total or TCLP/SPLP volatiles), are to be performed on soil for a given sampling interval and location, a separate container(s) will be needed for the other tests. The percent solids determination can then be performed using the soil in the container(s) for the other tests. In the event that only VOCs are to be determined for a given soil sample, the environmental professional must collect additional sample (no more than 20 grams would be needed) in a separate container for submittal to the laboratory. Typically, a small plastic container would suffice, although any container would do.

7. References

7.1. State of Connecticut, Department of Environmental Protection, *Guidance for Collecting and Preserving Soil and Sediment Samples for Laboratory Determination of Volatile Organic Compounds,* Version 2.0, February 28, 2006.

7.2. United States Environmental Protection Agency (EPA), *Behavior and Determination of Volatile Organic Compounds in Soil*, EPA/600/R-93/140, May 1993.

7.3. United States Army Corps of Engineers (USACE), Chemical Preservation of Volatile Organic Compounds in Soil Subsamples, Hewitt, A.D., USACE Special Report 95-5, February 1995.

7.4. Hewitt, A.D. and Lukash, N., USACE, *Obtaining and Transferring Soils for In-Vial Analysis of Volatile Organic Compounds*, USACE Special Report 96-5, February 1996.

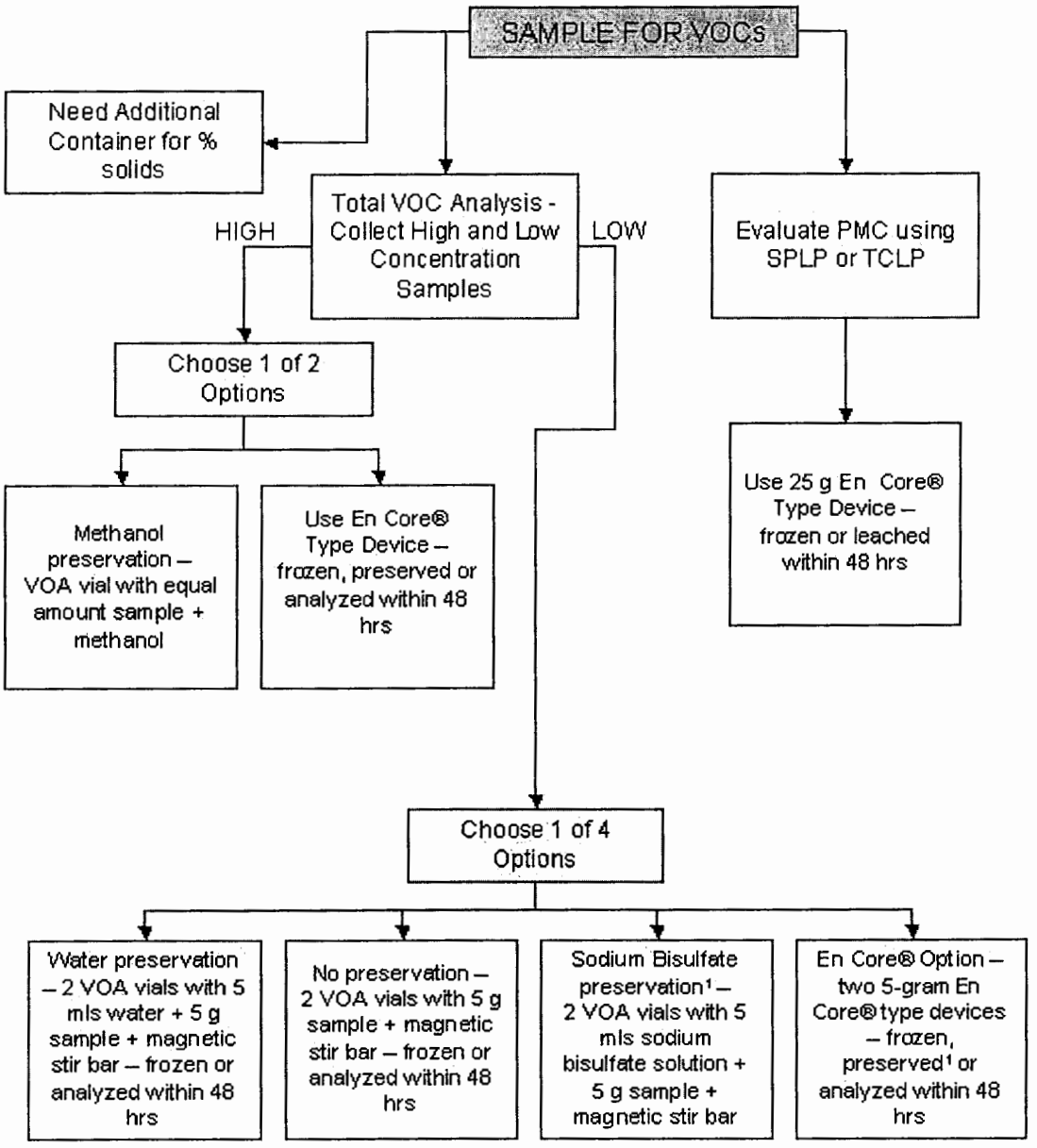
7.5. USACE, *Sample Collection and Preparation Strategies for Volatile Organic Compounds in Solids* (October 1998). http://clu-in.org/download/stats/sampling.pdf.

7.6. Hewitt, A.D., USACE, *Preparing Soil Samples for Volatile Organic Compound Analysis*, USACE Special Report 97-11, April 1997.

7.7. Hewitt, A.D., USACE, *Storage and Preservation of Soil Samples for Volatile Organic Compound Analysis*, USACE Special Report 99-5, May 1999.

7.8. Connecticut Department of Environmental Protection Laboratory Quality Assurance and Quality Control Workgroup, *Rationale for Preservation of Soil and Sediment Samples for Determination of Volatile Organic Compounds*, October 2005, http://www.epoc.org.

Figure 1 – Sample Collection Flow Chart



1. Not appropriate for all circumstances – see Section 4.4 of this document

APPENDIX D

Geologic Boring Logs

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 03/25/2010	**Boring ID** E-01
Commission Number 07MD803.		**End Date** 03/26/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Paul Gelinas	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Dark brown coarse SAND, dry, and medium to coarse Gravel	0.0
2-		100		Red coarse SAND, dry, traces of coarse Gravel, and boulder (6") at 4'	0.0
4-		100		As Above	0.0
6-		100		Dark brown medium to coarse SAND, dry and medium to coarse Gravel, trace Cobbles (4"-8")	0.0
8-		100		As Above	0.0
10-		100		As Above	0.0
12-		100		Red brown medium to coase SAND, dry, and medium Gravel, traces of coarse Gravel	0.0
14-		100		As Above	0.0
16-		100		Brown medium SAND, dry, and fine Gravel, traces of coarse Gravel	1.0
18-		100		Brown medium to fine SAND, dry, traces of Grey Silt and fine Gravel	3.8
20-		100		Brown medium to fine SAND, dry, trace of Grey Silt, and fine Gravel	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/25/2010 **End Date** 03/26/2010	**Boring ID** **E-01**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Paul Gelinas **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		Brown medium to coarse SAND, dry, and medium to coarse Gravel	0.0
28-		100		Brown medium to coarse SAND, dry, and medium to coarse Gravel, trace Cobbles (3"-5")	0.0
30-		100		Brown medium to coarse SAND and medium to coarse Gravel, dry	0.0
32-		100		As Above	0.0
34-		100		Brown fine SAND, traces of fine to medium Gravel, dry	0.0
35				BOB 35'	

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/25/2010 **End Date** 03/25/2010	**Boring ID** **E-02**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** at Hours **Depth** at Hours		**Logged by** Paul Gelinas **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Dark brown medium to coarse SAND, dry	0.2
2-		100		As Above	0.2
4-		100		Dark brown medium SAND, dry, and Cobbles, 2"-4"	0.8
6-		100		Dark brown coarse SAND, dry, and red brown medium Sand, dry	0.8
8-		100		Dark brown coarse SAND, dry, and Cobbles (3"-4")	3.0
10-		100		Brown medium to coarse SAND, with some fine to coarse Gravel, some Cobbles (2"-4"), moist	0.0
12-		100		As Above	0.0
14-		100		As Above	0.0
16-		100		Red brown fine SAND, trace of fine Gravel, moist	0.0
18-		100		As Above	0.0
20-		100		Red brown fine to coarse SAND, traces of fine to coarse Gravel, moist	15.7
22-		100		As Above, more coarse Gravel	6.2

Project: B&D Woodside NY ESAs		**Start Date** 03/25/2010	**Boring ID** E-02
Commission Number 07MD803.		**End Date** 03/25/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Paul Gelinas	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red GRAVEL, medium Sand, trace medium Gravel	1.9
26-		100		Dark brown fine to coarse SAND and fine to coarse GRAVEL	2.0
28-		100		As Above	0.2/1.1
30-		100		6": Boulder at 30' 18": Brown fine SAND, dry	0.0
32-		100		Brown fine to coarse SAND, dry, some fine to coarse Gravel, trace Cobbles (4"-??)	0.0
34- 35		100		Top 6": Brown SILT, dense, dry, 8" Cobble at 34.5' Bottom 6": Brown fine to coarse SAND, trace small to medium Gravel BOB 35'	0.0

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/19/2010 **End Date** 03/22/2010	**Boring ID** **E-03**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Rick Brainerd **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		4": Asphalt 4"-16": Brown fine to coarse SAND, loose, damp Red brown fine to coarse SAND, some fine to coarse Gravel and Cobbles, trace Silt, loose, moist	55.1
2-		100		As Above	47.3
4-		100		As Above	61.7
5-		60		Brown fine to coarse SAND and Gravel, some fine to coarse Cobbles, little Silt, loose, dry 8" Cobble at 5'	57.0
6-		60		Brown fine to coarse SAND nad Gravel, some fine to coarse Cobbles, little Silt, loose, dry 8" Cobble at 8'	112.2
8-		60		As Above	262
10-		100		Red brown fine to coarse SAND, little fine to coarse Gravel, trace Silt and Cobbles, loose, damp	70.5
12-		100		12'-13': As Above 13'-14': Brown fine to coarse GRAVEL and COBBLES, little fine to coarse Sand and Silt, loose, damp	73.2
14-		100		As Above, Brick fragments	75.5
16-		100		Brown fine to coarse SAND and fine to coarse Gravel, little Silt and small to medium Cobbles, loose, damp	229
18-		100		As Above	86.6
20-		75		20'-21': Brown fine to coarse SAND, little fine to coarse Gravel, little Silt, loose, damp Red brown fine to coarse SAND, trace fine to medium Gravel and Silt, loose, damp	9.1
22-		75		As Above	41.3

Project: B&D Woodside NY ESAs		**Start Date** 03/19/2010	**Boring ID** E-03
Commission Number 07MD803.		**End Date** 03/22/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		75		24-25': As Above 25'-26': Broken Sandstone	14.9
26-		75		26'-27': Broken Sandstone Red brown fine to coarse SAND, trace fine to medium Gravel and Silt, loose, damp	35.8
28-		100		As Above	75.8
30-		100		Red brown fine to very fine SAND, little small Gravel, loose, dry	27.8
32-		100		As Above	18.6
34-		100		As Above	5.2
35				BOB 35'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date**	**Boring ID**
Commission Number 07MD803.		03/16/2010	**E-04**
Client Black & Decker HHI		**End Date**	
Location Black & Decker - Woodside NY		03/16/2010	
Drilling Contractor Boart-Longyear		**Logged by**	keith volkert
Drilling Method Roto Sonic		**Drilling Foreman**	Larry Hunsberger
Sampling Method Sample bag		**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small angular Gravel, trace Silt, loose, dry	0.0
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10-		100		As Above	0.0
12-		100		As Above	0.0
14-		100		Top 12": As Above Bottom 12": Dark brown fine to very fine SAND, some small Gravel, trace Silt, loose, strong odor	0.0
16-		100		As Above, (bottom 12")	651
18-		100		Red brown fine to very fine SAND, some medium Sand and small to large round Gravel, trace Silt, loose, dry	855
20-		100		As Above	163
22-	1139646	100		Red orange brown fine to very fine SAND, some small Gravel, trace Silt, loose, dry	5.1

Project: B&D Woodside NY ESAs		**Start Date** 03/16/2010	**Boring ID** E-04
Commission Number 07MD803.		**End Date** 03/16/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** keith volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-	1139647	100		As Above	0.0
26-	1139648	100		As Above	0.0
28-	1139649	100		As Above	0.0
30-	1139650	100		Orange red brown fine to very fine SAND, little Silt, loose, dry	0.0
32- 33	1139651, 1139652	100		As Above BOB 33'	0.0

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/22/2010 **End Date** 03/22/2010	**Boring ID** **E-05**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** at Hours **Depth** at Hours		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Black fine to very fine SAND and small to large semi-rounded Gravel, loose, dry	16.9
2-		100		As Above	2.3
4-		100		As Above	4.2
6-		100		Black to brown fine to very fine SAND and small to large Gravel, loose, dry	1.9
8-		100		Brown fine to very fine SAND and Gravel, loose, dry	0.0
10-		100		As Above	1.1
12-		100		As Above	2.4
14-		100		Red brown fine to very fine SAND and small to medium Gravel, loose, dry	0.9
16-		100		Top 12": As Above Bottom 12": Red orange fine to very fine SAND, some Silt and small to medium Gravel, moderately dense, dry	0.1
18-		100		Red brown fine to very fine SAND and small to large Gravel, loose, dry	1.0
20-		100		Red brown fine to very fine SAND, little small to medium Gravel, trace Silt, loose, dry	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/22/2010 **End Date** 03/22/2010	**Boring ID** **E-05**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		As Above	0.0
28-		100		As Above	0.0
30-		100		As Above	0.1
32-		100		As Above	1.0
34-		100		As Above	0.9
35				BOB 35'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/18/2010 **End Date** 03/19/2010	**Boring ID** **E-06**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** 8" Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Rick Brainerd **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-				Dark brown to black medium to fine SAND and GRAVEL, trace Silt, loose, dry Several small to medium Cobbles	5.7
2-				Large rock at 2fbg Granite	NA
4-				As Above	NA
6-				As Above	NA
8-				Red brown fine to coarse SAND and fine to coarse Gravel, little Silt, with small to medium Cobbles, loose, moist	3.8
10-				As Above	10.7
12-				As Above	2.8
14-				As Above	2.2
16-				Red brown fine to coarse SAND, some fine to coarse Gravel, trace Silt, little fine to medium Cobbles, loose, moist	11.4
18-				As Above to 19 fbg	6.8
19-		100		Red to brown fine to coarse SAND and fine to coarse Gravel, little Silt, little medium Cobbles, loose, moist	59.1
20-		100		As Above	86.6
22-		100		As Above, trace Cobbles 8" Cobble at 24fbg	129

Project: B&D Woodside NY ESAs		**Start Date** 03/18/2010	**Boring ID** E-06
Commission Number 07MD803.		**End Date** 03/19/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Rick Brainerd	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method 8" Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red brown fine to coarse SAND, some fine to coarse Gravel, trace Silt and fine to medium Cobbles, damp, loose	182
26-		100		As Above, 27fbg: fine to coarse SAND, trace Silt and fine to coarse Gravel, loose, damp	239
28-		100		As Above	107
30-		100		As Above	441
32-		100		As Above BOB at 34'	331
34					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 03/17/2010	**Boring ID** E-07
Commission Number 07MD803.		**End Date** 03/17/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		8"; Asphalt Brown fine to very fine SAND and GRAVEL, loose, trace Silt, dry	NT
2-		100		As Above	NT
4-		100		As Above	NT
6-		100		As Above	NT
8-		100		As Above	NT
10-		100		As Above, large Gravel 14" of hard drilling (rocks) at 13'-14'	NT
12-		100		As Above, large Gravel	NT
14-		100		Dark brown fine to very fine SAND, some Silt and small to large Gravel, dry	NT
16-		100		As Above 6" boulder at about 18'	NT
18-		100		Brown fine to very fine SAND and small to large Gravel, trace Silt, loose, dry	NT
20-		100		Red brown fine to coarse SAND and fine and coarse Gravel, trace Silt, loose, wet	25.1
22-		100		As Above, little small Cobble, about 8" Cobble at 23 fbg	32.8

Project: B&D Woodside NY ESAs		**Start Date** 03/17/2010	**Boring ID** E-07
Commission Number 07MD803.		**End Date** 03/17/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above, moist	48.2
26-		100		As Above, no Cobbles, moderately dense, 27 fbg: Red to brown fine to coarse SAND, little fine to coarse Gravel, trace Silt, moderately dense, damp	28.1
28-		100		As Above, trace fine to coarse Gravel	15.3
30-		100		As Above, about 4" Cobbles at about 31 fbg	17.3
32-		100		As Above	11.1
34- 35		100		As Above BOB 35'	8.8

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/24/2010 **End Date** 03/24/2010	**Boring ID** **E-08**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** at Hours **Depth** at Hours		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Dark brown fine to very fine SAND and small to large Gravel, loose, dry	12.1
2-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	3.6
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10-		100		Light brown fine to very fine SAND, small to large Gravel, loose, dry	0.0
12-		100		As Above	0.0
14-		100		As Above	0.0
16-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
18-		100		As Above	0.0
20-		100		Dark brown, coarse SAND, dry, traces of fine Gravel	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/24/2010 **End Date** 03/24/2010	**Boring ID** **E-08**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** **at** **Hours** **Depth** **at** **Hours**		**Logged by** Paul Gelinas **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		Dark brown, coarse SAND, dry, and medium to coarse Gravel (1"-3")	0.0
28-		100		As Above	0.0
30-		100		Dark brown coarse SAND, traces of Gray Silt, dry	0.0
32-		100		As Above	0.0
34- 35		100		As Above BOB at 35'	0.0

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 03/23/2010	**Boring ID** E-09
Commission Number 07MD803.		**End Date** 03/23/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		Top 12": As Above Rock starting at 5'	0.0
6-		83		Rock	0.0
8-		83		Rock to 11'	0.0
10- 11		83		BOB 11', offset	0.0

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY	**Start Date** 03/24/2010 **End Date** 03/24/2010	**Boring ID** **E-09a**

Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Larry Hunsberger
Sampling Method	Sample bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
2-		100		As Above, rock at 5'	0.0
4-		100		Rock	0.0
6-		40		Rock	0.0
8-		40		Rock until 11', offset	0.0
10					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date**	**Boring ID**
Commission Number 07MD803.		04/01/2010	**E-09b**
Client Black & Decker HHI		**End Date**	
Location Black & Decker - Woodside NY		04/02/2010	
Drilling Contractor Boart-Longyear	**Logged by**	Paul Gelinas	
Drilling Method Roto Sonic	**Drilling Foreman**	Larry Hunsberger	
Sampling Method Sample bag	**Drill Rig**	Spider	
Groundwater Observation	**Surface Elevation**		
Depth at Hours	**Latitude**		
Depth at Hours	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Dark brown coarse SAND, dry, loose, and medium to coarse Gravel, trace Cobbles (3"-4")	0.3
2-		100		As Above	0.1
4-		100		Cobble at 48"-56" Medium to coarse Gravel, loose, dry, traces of dark brown coarse Sand, loose, dry	0.0
6-		100		Dark brown coarse SAND, dry, loose, and medium to coarse Gravel, traces of Cobble (4"-8")	0.3
8-		100		As Above	0.0
9.5-		100		As Above	
10-		100		Boulder (10'-10.5'), and coarse GRAVEL	0.0
11-		100		Coarse GRAVEL, and Cobble (4"-6"), traces of dark brown, medium to coarse Sand, dry, loose	0.0
12-		100		As Above	0.0
14-		100		Dark brown, coarse SAND, dry, loose, and medium to large Gravel, traces of Cobble (4")	0.0
15.5-		100		Dark brown, fine to medium SAND, dry, loose, and fine to medium Gravel, traces of Cobble (4"-5")	0.0
18-		100		As Above Boulder at 19' 9" - 20'	0.0
20-		100		Boulder - top 4", red, coarse SAND, dry, loose, and medium to coarse Gravel, traces of Cobble (4")	0.3
22-		100		Dark brown, medium to coarse SAND, dry, loose, medium to coarse Gravel, traces of Cobble (4")	0.0

Project: B&D Woodside NY ESAs		**Start Date** 04/01/2010	**Boring ID** E-09b
Commission Number 07MD803.		**End Date** 04/02/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Paul Gelinas	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		Brown, fine SAND, dry, dense, traces of fine to medium Gravel	0.4
28-		100		As Above	0.3
30-		100		Dark brown fine to medium SAND, dry, loose, traces of fine to medium Gravel	0.0
32-		100		Dark brown fine SAND, dry, dense, traces of grey Silt and fine Gravel	0.0
34-		100		Brown fine SAND, dry, loose, traces of grey Silt and fine Gravel	0.0
35				BOB at 35'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date**	**Boring ID**
Commission Number 07MD803.		03/23/2010	**E-10**
Client Black & Decker HHI		**End Date**	
Location Black & Decker - Woodside NY		03/23/2010	
Drilling Contractor Boart-Longyear	**Logged by** Keith Volkert		
Drilling Method Roto Sonic	**Drilling Foreman** Larry Hunsberger		
Sampling Method Sample bag	**Drill Rig** Spider		
Groundwater Observation	**Surface Elevation**		
Depth at Hours	**Latitude**		
Depth at Hours	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Light brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		Red brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10-		100		As Above	0.0
12-		100		Light brown fine to very fine SAND and small to large round Gravel, loose, dry	0.0
14-		100		As Above	0.0
16-		100		As Above Rock at 18' (8"-10" thick)	0.0
18-		100		Light brown fine to very fine SAND and small to large Gravel, round, loose, dry	0.0
20-		100		Red brown fine to very fine SAND and small to large round Gravel, loose, dry	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY	**Start Date** 03/23/2010 **End Date** 03/23/2010	**Boring ID** **E-10**

Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Larry Hunsberger
Sampling Method	Sample bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		As Above	0.0
28-		100		As Above	0.0
30-		100		As Above	0.0
32-		100		Brown fine to very fine SAND and small to large Gravel (rounded), loose, dry	0.0
34-		100		As Above	0.0
35				BOB 35'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY	**Start Date** 04/07/2010 **End Date** 04/07/2010	**Boring ID** **T-01**

Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Adam Anderson
Sampling Method	Sample Bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-	1139656	100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.1
2-		100		As Above	0.1
4-		100		As Above	0.0
6-		100		Bottom 12": Rock	0.0
8-		100		Rock	0.0
10-		100		Rock	0.0
12-		100		Brown fine to very fine SAND and small to large Gravel and cobbles, loose, dry	0.0
14-		100		As Above	0.0
16-		100		As Above	0.0
18-		100		As Above	0.0
20-		100		Top 12": Brown fine to very fine SAND and Rock Bottom 12": Red brown fine to very fine SAND, trace small to medium Gravel, loose, dry	0.0
22-		100		As Above (bottom 12")	0.1

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 04/07/2010 **End Date** 04/07/2010	**Boring ID** **T-01**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample Bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Keith Volkert **Drilling Foreman** Adam Anderson **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.1
26-		100		As Above	0.2
28-		100		As Above	0.0
30-		100		Red brown fine to very fine SAND, little small to medium Gravel, trace Silt, loose, dry	0.0
32-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
34-		100		As Above	0.0
36				BOB 36'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 04/06/2010	**Boring ID** T-02
Commission Number 07MD803.		**End Date** 04/06/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Adam Anderson	
Sampling Method Sample Bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-	1139655	100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10-		100		Reddish brown fine to very fine SAND and small to large Gravel, trace Silt, loose, dry	2.1
12-		100		As Above	12.6
14-		100		As Above	20.1
16-		100		As Above	0.9
18-		100		As Above	0.5
20-		100		Brown fine to very fine SAND, some small to large Gravel, trace Silt, loose, dry	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY	**Start Date** 04/06/2010 **End Date** 04/06/2010	**Boring ID** T-02

Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Adam Anderson
Sampling Method	Sample Bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red orange brown fine to very fine SAND, some small to medium Gravel, loose, dry	0.0
26-		100		As Above	0.1
28-		100		Red brown fine to very fine SAND, trace small Gravel, loose, dry	0.0
30-		100		As Above	0.0
32-		100		As Above, some small Gravel	0.0
34-		100		As Above	0.0
35.5				BOB 35.5'	

GEOLOGIC BORING LOG

Project: UST/Soil Removal & Reporting		**Start Date** 04/07/2010	**Boring ID** T-03
Commission Number 07MD803.007		**End Date** 04/12/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear	**Logged by** Keith Volkert		
Drilling Method Roto Sonic	**Drilling Foreman** A. Anderson/J. Tidewell		
Sampling Method Sample Bag	**Drill Rig** Spider		
Groundwater Observation	**Surface Elevation**		
Depth at Hours	**Latitude**		
Depth at Hours	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		Rock	0.0
10-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
12-		100		As Above	0.0
14-		100		Reddish brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
16-		100		As Above	0.0
18-		100		As Above	0.0
20-		100		Red brown fine to very fine SAND, some small to medium Gravel, loose, dry	0.0
22-		100		As Above, trace small Gravel	0.0

Project: UST/Soil Removal & Reporting		**Start Date** 04/07/2010	**Boring ID** T-03
Commission Number 07MD803.007		**End Date** 04/12/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** A. Anderson/J. Tidewell	
Sampling Method Sample Bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.1
26-		100		As Above	0.1
28-		100		Dark red brown fine to very fine SAND, trace Silt, some small to medium Gravel, loose, dry	0.0
30-		100		As Above	0.0
32-		100		As Above	0.2
34-		100		As Above BOB 36'	0.1
36					

GEOLOGIC BORING LOG

Project: UST/Soil Removal & Reporting		**Start Date** 04/12/2010	**Boring ID** T-04
Commission Number 07MD803.007		**End Date** 04/12/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear	**Logged by** Keith Volkert		
Drilling Method Roto Sonic	**Drilling Foreman** Joe Tidewell		
Sampling Method Sample Bag	**Drill Rig** Spider		
Groundwater Observation	**Surface Elevation**		
Depth at Hours	**Latitude**		
Depth at Hours	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.1
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		Top 12": Rock Bottom 12": Brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
8-		100		As Above (bottom 12")	0.1
10-		100		Light brown fine to very fine SAND and small to large Gravel, loose, dry	0.2
12-		100		As Above	0.0
14-		100		As Above	0.0
16-		100		As Above	0.0
18-		100		As Above	0.0
20-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
22-		100		Red brown fine to very fine SAND, some small to medium Gravel, trace Silt, loose, dry	0.0

Project: UST/Soil Removal & Reporting		**Start Date** 04/12/2010	**Boring ID** T-04
Commission Number 07MD803.007			
Client Black & Decker HHI		**End Date** 04/12/2010	
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Joe Tidewell	
Sampling Method Sample Bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		Red brown fine to very fine SAND, little small Gravel, loose, dry	0.0
28-		100		As Above	0.0
30-		100		As Above	0.0
32-		100		As Above	0.0
34-		100		As Above	0.0
36				BOB 36'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 03/30/2010	**Boring ID** X-01
Commission Number 07MD803.			
Client Black & Decker HHI		**End Date** 03/30/2010	
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.1
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10.-		100		Red brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
12-		100		As Above	0.2
14-		100		Red brown fine to very fine SAND and small Gravel, little Silt, loose, dry	0.1
16-		100		As Above	0.0
18-		100		As Above	0.1
20.-		100		Red brown fine to very fine SAND, trace small Gravel, loose, dry	0.0
22-		100		As Above	0.0

Project: B&D Woodside NY ESAs		**Start Date** 03/30/2010	**Boring ID** X-01
Commission Number 07MD803.		**End Date** 03/30/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		Red brown fine to very fine SAND, trace small Gravel, loose, dry	0.1
28-		100		As Above	0.1
30.-		100		Red brown fine to very fine SAND and small to medium Gravel, loose, dry	0.2
32-		100		As Above	0.0
34-		100		As Above BOB 36'	0.0
36					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date** 03/31/2010	**Boring ID** X-02
Commission Number 07MD803.		**End Date** 03/31/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Rock	0.0
2-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.8
4-		100		As Above	0.0
6-		100		As Above	0.2
8-		100		As Above	0.1
10-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.3
12-		100		Reddish brown fine to very fine SAND and small to large Gravel, loose, dry	0.1
14-		100		As Above, trace Silt	0.2
16-		100		As Above, trace Silt	0.0
18-		100		Rock	1.1
20-		100		Rock	0.0
22-		100		Rock	0.0

Project: B&D Woodside NY ESAs		**Start Date** 03/31/2010	**Boring ID** X-02
Commission Number 07MD803.		**End Date** 03/31/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at Hours		**Latitude**	
Depth at Hours		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red brown fine to very fine SAND, some small to large Gravel, little Silt, loose, dry	0.1
26-		100		As Above	0.0
28-		100		Red brown fine to very fine SAND, little small to medium Gravel, loose, dry	0.1
30-		0		No recovery Drilling through Rock Rock core did not break off No recovery BOB 36'	
36					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/29/2010 **End Date** 03/29/2010	**Boring ID** **X-03**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** at Hours **Depth** at Hours		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
2-		100		As Above	0.1
4-		100		As Above	0.1
6-		100		As Above	0.3
8-		100		Red orange brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
10.-		100		As Above	0.0
12-		100		As Above, trace Silt	0.4
14-		100		As Above	0.0
16-		100		As Above	0.1
18-		100		Red brown fine to very fine SAND, little small Gravel, loose, dry	0.1
20.-		100		Red orange brown fine to very fine SAND, little small Gravel, loose, dry	0.1
22-		100		As Above	1.1

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/29/2010 **End Date** 03/29/2010	**Boring ID** **X-03**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Brown red fine to very fine SAND and small to large Gravel, loose, dry	0.2
26-		100		As Above	0.0
28-		100		As Above	0.1
30.-		100		As Above	0.0
32-		100		Rock	0.0
34-		100		Rock	0.0
36				BOB 36'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/31/2010 **End Date** 03/31/2010	**Boring ID** **X-04**
Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Larry Hunsberger
Sampling Method	Sample bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		As Above	0.1
6-		100		As Above	0.0
8-		100		As Above	0.2
10.-		100		Red brown fine to very fine SAND and small to medium Gravel, trace Silt, loose, dry	0.0
12-		100		As Above	0.0
14-		100		As Above	0.1
16-		100		Red brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
18-		100		As Above	0.1
20.-		100		Orange red brown fine to very fine SAND and small to medium Gravel, loose, dry	23.2
22-		100		As Above	18.5

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 03/31/2010 **End Date** 03/31/2010	**Boring ID** **X-04**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Keith Volkert **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red brown fine to very fine SAND, some small to medium Gravel, little Silt, loose, dry	16.8
26-		100		Red brown fine to very fine SAND, little small to medium Gravel, loose, dry	9.7
28-		100		As Above	10.4
30.-		100		As Above	0.0
32-		100		As Above	0.0
34-		100		As Above	0.0
36				BOB 36'	

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs		**Start Date**	**Boring ID**
Commission Number 07MD803.		03/31/2010	**X-05**
Client Black & Decker HHI		**End Date**	
Location Black & Decker - Woodside NY		03/31/2010	
Drilling Contractor Boart-Longyear		**Logged by**	Keith Volkert
Drilling Method Roto Sonic		**Drilling Foreman**	Larry Hunsberger
Sampling Method Sample bag		**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Brown fine to very fine SAND, and small to medium Gravel, loose, dry	0.0
2-		100		As Above	0.0
4-		100		As Above	0.0
6-		100		As Above	0.0
8-		100		As Above	0.0
10-		100		As Above	0.0
12-		100		As Above	0.0
14-		100		As Above	0.0
16-		100		Red brown fine to very fine SAND, and small to large Gravel, loose, dry	1.2
18-		100		As Above	2.6
20-		100		Orange red brown fine to very fine SAND, some small to medium Gravel, trace Silt, loose, dry	0.0
22-		100		Brown fine to very fine SAND, some small to large Gravel, loose, dry	0.0

Project: B&D Woodside NY ESAs		**Start Date** 03/31/2010	**Boring ID** X-05
Commission Number 07MD803.		**End Date** 03/31/2010	
Client Black & Decker HHI			
Location Black & Decker - Woodside NY			
Drilling Contractor Boart-Longyear		**Logged by** Keith Volkert	
Drilling Method Roto Sonic		**Drilling Foreman** Larry Hunsberger	
Sampling Method Sample bag		**Drill Rig** Spider	
Groundwater Observation		**Surface Elevation**	
Depth at **Hours**		**Latitude**	
Depth at **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		Red brown fine to very fine SAND, little small to medium Gravel, trace Silt, loose, dry	0.8
26-		100		Red brown fine to very fine SAND, trace small Gravel, loose, dry	0.1
28-		100		As Above	0.0
30-		100		As Above	0.0
32-		100		Rock	0.0
34-		100		Rock BOB 36'	0.0
36					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 04/06/2010 **End Date** 04/06/2010	**Boring ID** **X-06**
Drilling Contractor	Boart-Longyear	**Logged by**	Keith Volkert
Drilling Method	Roto Sonic	**Drilling Foreman**	Adam Anderson
Sampling Method	Sample Bag	**Drill Rig**	Spider
Groundwater Observation		**Surface Elevation**	
Depth **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-	1139654	100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
2-		100		As Above at 3': Dark brown fine to very fine SAND and small to large Gravel, little Silt, loose, moist	0.0
4-		100		As Above	0.0
6-		100		Brown fine to very fine SAND and small to large Gravel (cobbles), loose, dry	0.0
8-		100		As Above Rock at 9'	0.0
10-		100		Rock at 10' Dark brown fine to very fine SAND and small to large Gravel, trace Silt, loose, dry	0.1
12-		100		As Above	0.0
14-		100		Reddish brown fine to very fine SAND and small to large Gravel, loose, dry	0.0
16-		100		Rock at 16' to 18'	0.1
18-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.1
20-		100		Brown fine to very fine SAND and small to large Gravel, loose, dry	0.1
22-		100		As Above	0.2

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 04/06/2010 **End Date** 04/06/2010	**Boring ID** **X-06**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample Bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Keith Volkert **Drilling Foreman** Adam Anderson **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above	0.0
26-		100		As Above	0.0
28-		100		Top 12": As Above Bottom 12": Rock	0.0
30-		100		Brown fine to very fine SAND and small to medium Gravel, loose, dry	0.0
32-		100		Orange brown fine to very fine SAND, little small to medium Gravel, loose, dry	0.1
34-		100		Red brown fine to very fine SAND, trace medium Gravel, loose, dry BOB 36'	0.0
36					

GEOLOGIC BORING LOG

Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 04/01/2010 **End Date** 04/01/2010	**Boring ID** **X-07**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth** at Hours **Depth** at Hours		**Logged by** Paul Gelinas **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-		100		Dark brown fine SAND, loose, dry, and medium to coarse Gravel, trace Cobbles (4")	0.2
2-		100		As Above	0.3
4-		100		Red fine to medium SAND, loose, dry, and medium to coarse Gravel, trace Cobbles (4")	2.4
6-		100		As Above	0.0
8-		100		As Above	0.2
10-		100		Dark brown medium to fine SAND, loose, dry, and medium Gravel, traces of Cobble (3-4")	0.6
12-		100		As Above	0.0
14-		100		As Above	0.0
16-		100		Purple medium to coarse SAND, loose, dry, and medium to coarse Gravel	0.0
18-		100		Dark brown medium to coarse SAND, loose, dry, and medium to coarse Gravel	0.0
20-		100		Dark brown medium to coarse SAND, loose, dry, and fine to medium Gravel	0.7
22-		100		As Above	1.0

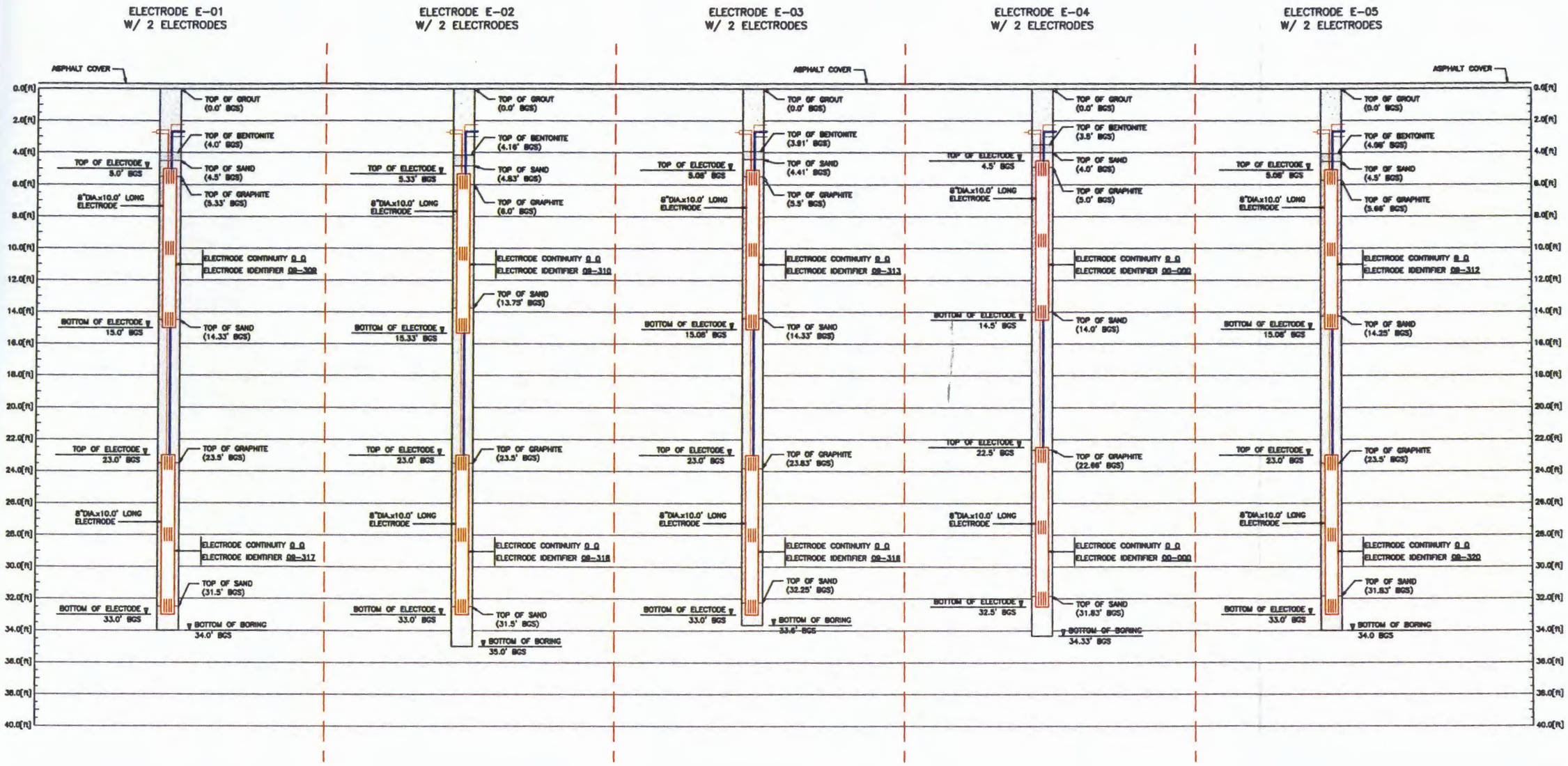
Project: B&D Woodside NY ESAs **Commission Number** 07MD803. **Client** Black & Decker HHI **Location** Black & Decker - Woodside NY		**Start Date** 04/01/2010 **End Date** 04/01/2010	**Boring ID** **X-07**
Drilling Contractor Boart-Longyear **Drilling Method** Roto Sonic **Sampling Method** Sample bag **Groundwater Observation** **Depth at Hours** **Depth at Hours**		**Logged by** Paul Gelinas **Drilling Foreman** Larry Hunsberger **Drill Rig** Spider **Surface Elevation** **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-		100		As Above, trace purple medium to coarse Sand, loose, dry	0.0
26-		100		Brown fine SAND, loose, moist, trace grey Silt	0.0
28-		100		As Above	0.0
30-		100		As Above, trace fine to medium Gravel	0.0
32-		100		Light brown fine SAND, loose, dry, trace fine to medium Gravel	0.0
34-		100		As Above BOB at 36'	0.0
36					

APPENDIX E

Electrode, MPE Well and Sensor Well Diagrams

ELECTRODE WELLS



GENERAL NOTES:

1. ALL ELECTRODE BORINGS ARE 10" IN DIAMETER
2. SAND USED TO BACKFILL BORING IS TYPE FILTER SILICA #0

CREATORS OF ET-DSP™

MCMILLAN-MCGEE CORP.

REV.	DATE (D/M/Y)	DESCRIPTION	DRAWN BY	CHK'D BY	Approved Dist
A	06/10/2010	CONSTRUCTION COMPLETION	AG	GP	RJ

LPE

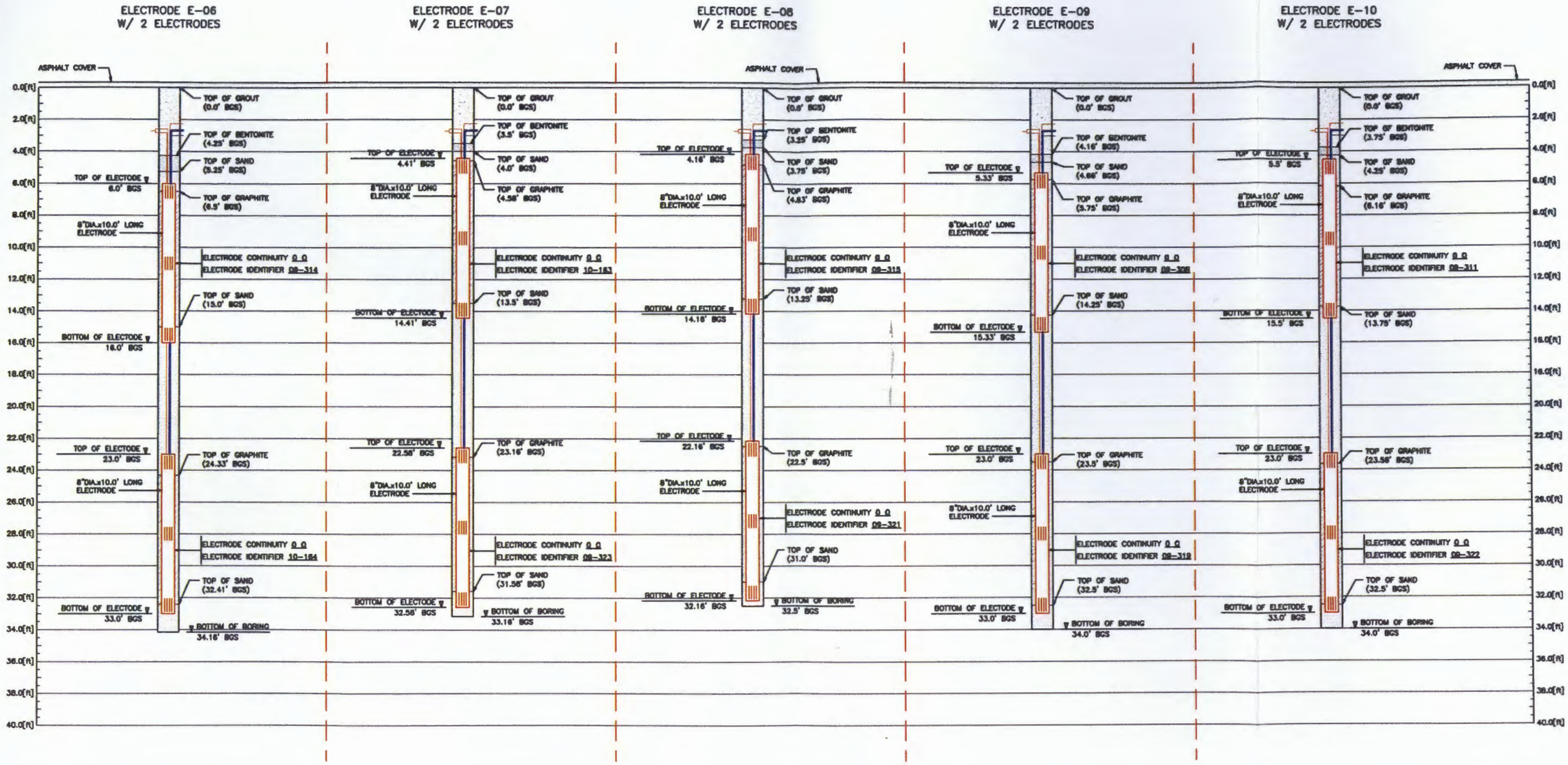
DATE

DRAWING NUMBER:

SCALE: NOT TO SCALE

DeWalt, Delta, Porter-Cable
Service Center
56-15 Queens Boulevard
Woodside, New York

ELECTRODE WELLS



GENERAL NOTES:

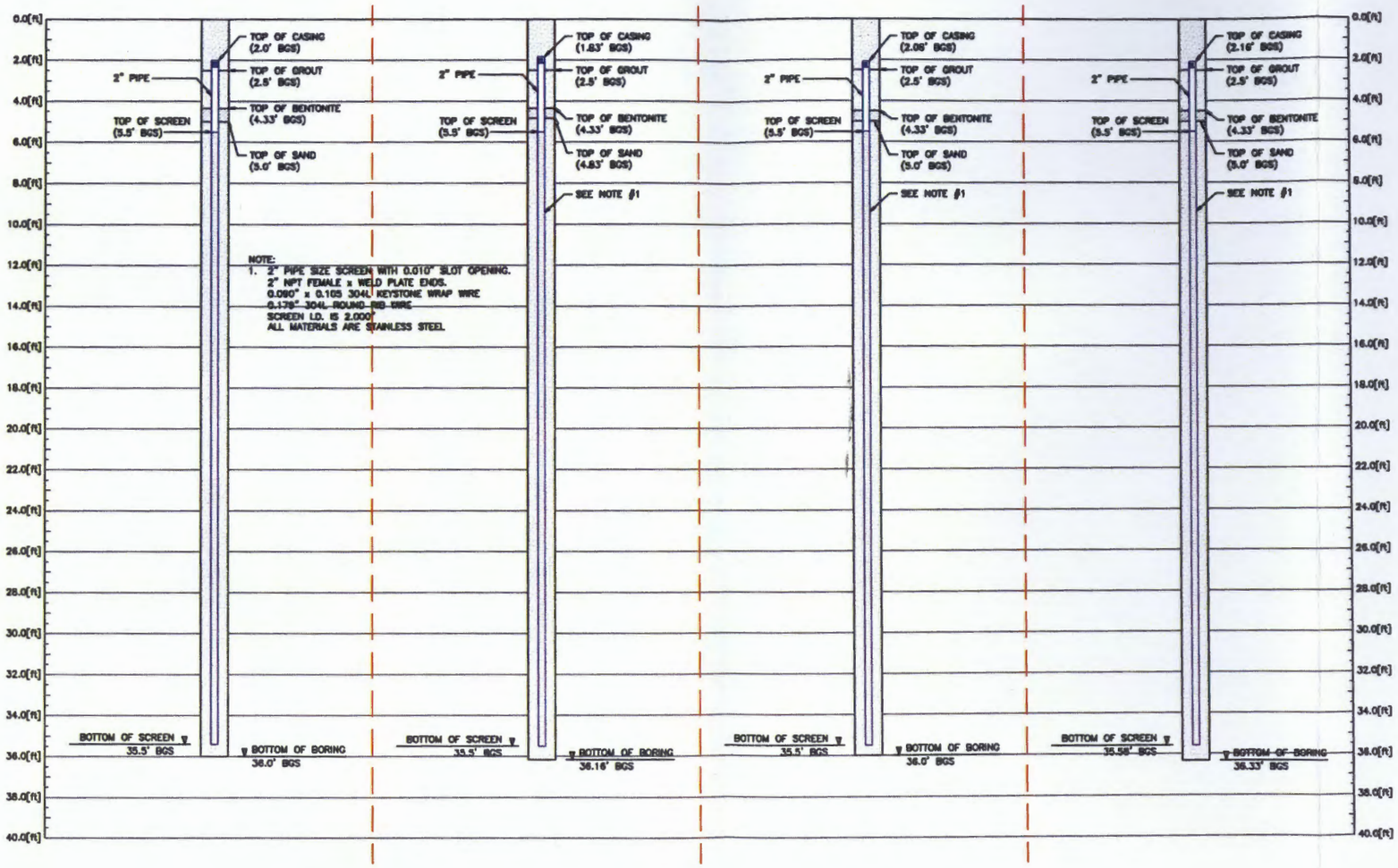
1. ALL ELECTRODE BORINGS ARE 10" IN DIAMETER
2. SAND USED TO BACKFILL BORING IS TYPE FILTER SILICA #0

CREATORS OF ET-DEP™
MCMILLAN-MCGEE CORP.

LPS							
	A	07/15/2019	CONSTRUCTION COMPLETION	AS	CP	SJ
DATE	REV.	DATE (DD/MM/YY)	DESCRIPTION	DRAWN BY	CHK/ ENGR	Approved Dist.
	DRAWING NUMBER:			SCALE: NOT TO SCALE		

DeWalt, Delta, Porter-Cable
Service Center
56-15 Queens Boulevard
Woodside, New York

EXTRACTION WELLS



GENERAL NOTES:

1. ALL EXTRACTION WELL BORINGS ARE 6" IN DIAMETER
2. SAND USED TO BACKFILL BORING IS TYPE FILTER SILICA #0

MCMILLAN-MCGEE CORP.

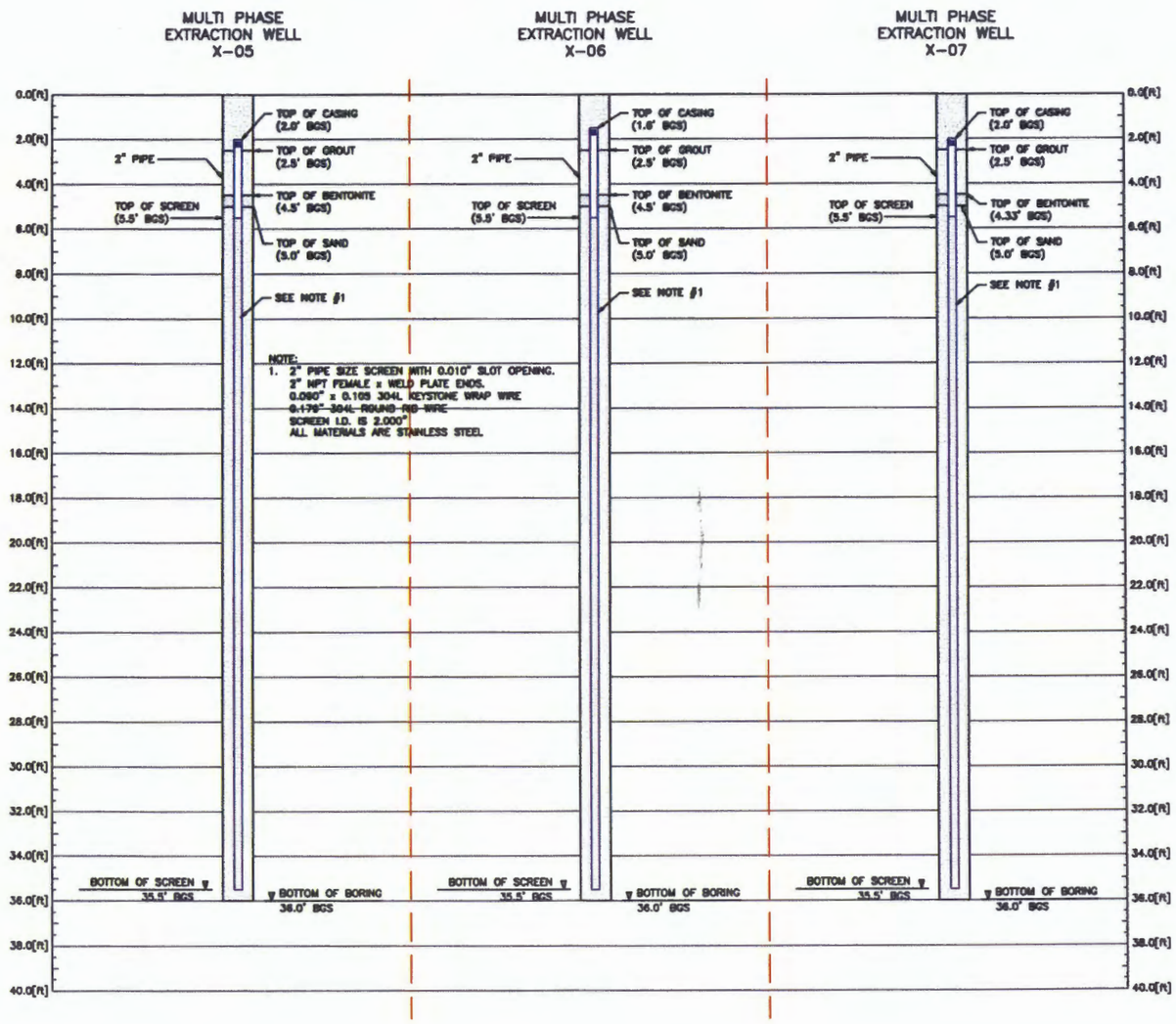
REV.	DATE (D/M/Y)	DESCRIPTION	DRAWN BY	ORG/ CHKR	Approved Dist.
A	02/10/2010	CONSTRUCTION COMPLETION	AG	GP	RJ

DRAWING NUMBER:

SCALE: NOT TO SCALE

DeWalt, Delta, Porter-Cable
Service Center
56-15 Queens Boulevard
Woodside, New York

EXTRACTION WELLS



GENERAL NOTES:

1. ALL EXTRACTION WELL BORINGS ARE 6" IN DIAMETER
2. SAND USED TO BACKFILL BORING IS TYPE FILTER SILICA #0

CREATORS OF ET-DSP™
MCCLELLAN-MCGEE CORP.

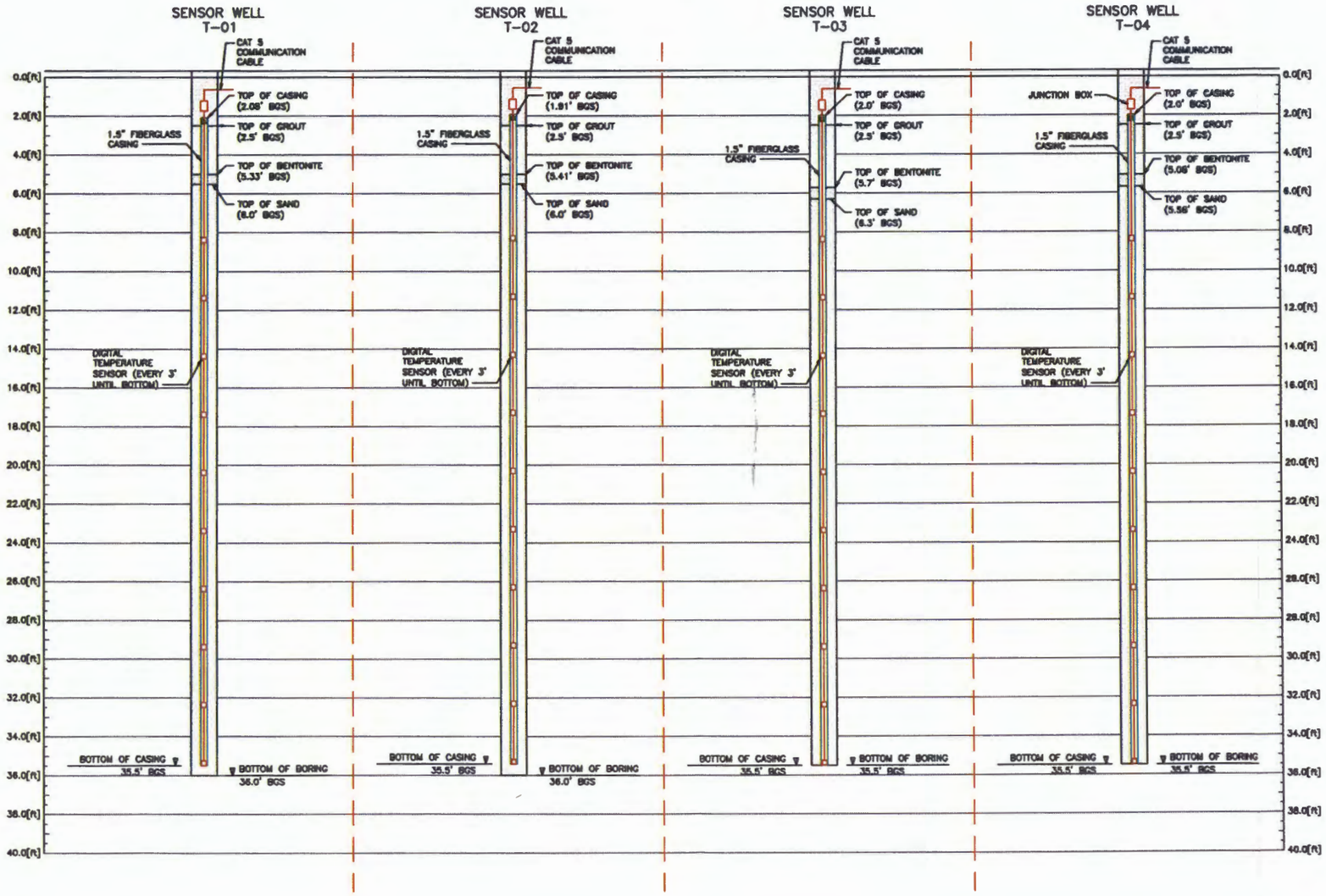
REV.	DATE (D/M/Y)	DESCRIPTION	DRAWN BY	CHKD BY	Approved Dist.
A	05/10/2010	CONSTRUCTION COMPLETION	AG	GP	RJ

DRAWING NUMBER:

SCALE: NOT TO SCALE

DeWalt, Delta, Porter-Cable Service Center
56-15 Queens Boulevard
Woodside, New York

DIGITAM SENSOR WELLS



GENERAL NOTES:

1. ALL SENSOR WELLS BORINGS ARE 6" IN DIAMETER
2. SAND USED TO BACKFILL BORING IS TYPE FILTER SILICA #1

LPT

CREATORS OF ET-DSP™
MCMILLAN-MCGEE CORP.

REV.	DATE (D/M/Y)	DESCRIPTION	DRAWN BY	ORIG ENGR	Approved (Init
A	08/10/2010	CONSTRUCTION COMPLETION	AS	GF	RJ

DRAWING NUMBER:

SCALE: NOT TO SCALE

DeWalt, Delta, Porter-Cable
Service Center
56-15 Queens Boulevard
Woodside, New York

APPENDIX F

Waste Disposal Documentation

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-00[illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
[illegible]		(877) 818-0083	000037387 VES

5. Generator's Name and Mailing Address: BLACK & DECKER (U.S.) INC, 100 NORTHWEST DRIVE, PLAINVILLE, CT [illegible]

Generator's Phone: [illegible]

Generator's Site Address (if different than mailing address): BLACK & DECKER(U.S.) INC., 58-15 QUEENS BLVD, WOODSIDE, NY [illegible]

6. Transporter 1 Company Name: VEOLIA ES TECHNICAL SOLUTIONS — U.S. EPA ID Number: [illegible]

7. Transporter 2 Company Name: [illegible] — U.S. EPA ID Number: [illegible]

8. Designated Facility Name and Site Address: [illegible] — U.S. EPA ID Number: [illegible]

Facility's Phone: [illegible]

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. [illegible] HAZARDOUS WASTE LIQUID, N.O.S. [illegible]	001	DM	00400	[illegible]	[illegible]
X	2. [illegible] HAZARDOUS WASTE SOLID [illegible]	009	DM	03600	[illegible]	[illegible]
	3. [illegible] NON REGULATED SOLID [illegible]	005	DM	02000	[illegible]	[illegible]
	4. [illegible] NON REGULATED SOLID [illegible]	005	DM	02000	[illegible]	[illegible]

14. Special Handling Instructions and Additional Information [illegible] ER Service Contracted by VEITS VEOLIA ES TECHNICAL SOLUTIONS LLC LATHAM NY IS FUNCTIONING AS THE PRIMARY EXPORTER TO CANADA EXPORTING FOR [illegible]

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
PAUL GELINAS AS AGENT FOR BLACK AND DECKER (U.S.) INC.	[signature]	04	28	10

16. International Shipments ☐ Import to U.S. ☒ Export from U.S. Port of entry/exit: Champlain NY
Transporter signature (for exports only): [signature] Date leaving U.S.: 5/6/10

17. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1	PETER F. KAVANAUGH	[signature]	04	28	10
Transporter 2	Ronald Roe	[signature]	05	06	10

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132T	H132T		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year
[illegible] MARIO	[signature]	05	07	10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

NONHAZARDOUS WASTE MANIFEST

1. Please type (or print)	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1
	N Y D 0 5 8 5 7 4 9 2 2		

GENERATOR

3. Generator's Name and Mailing Address
Black& Decker c/o Loueiro Eng
100 Northwest Dr
Plainville, CT 06062

4. Generator's Phone (860) 747-6181

A. Nonhazardous Waste Manifest Document Number: UIS A 0325891

B. G.S.I. (Gen. Site Address)
Black & Decker
56-15 Queens Blvd
Woodside, NY 11377

5. Transporter 1 Company Name	6. US EPA ID Number
UNITED INDUSTRIAL SERVICES	C T D 0 2 1 8 1 6 8 8 9

C. S.T.I. (Trans. Lic. Plate #) 592844

D. Tran. Phone (203) 238-6745

7. Transporter 2 Company Name	8. US EPA ID Number

E. S.T.I. (Trans. Lic. Plate #)

F. Tran. Phone ( )

9. Designated Facility Name and Site Address	10. US EPA ID Number
BRIDGEPORT UNITED RECYCLING 50 CROSS STREET BRIDGEPORT, CT 06610	C T D 0 0 2 5 9 3 8 8 7

G. State Facility's ID (Not Required)

H. Facility's Phone 203 3341665

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. NON DOT / NON RCRA REGULATED MATERIAL NONE, NONE, NONE	0 0 1	C M	0002	Y	EPA NONE STATE CT03
b.					EPA STATE
c.					EPA STATE
d.					EPA STATE

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
1) P022610002RL - EMERGENCY RESPONSE GUIDE # N/A EMERGENCY PH# (203)238-6745

CAN#2093 I032410 0093 19

1830065 NET

Point of Departure:

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable State laws and regulations.

Printed/Typed Name	Signature	Month	Day	Year
X Paul Gelinas As agent for Black & Decker (U.S.) Inc.		3	25	10

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Kim Wyman		03	25	10

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space
9.15 TONS

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Deborah Duquette		03	26	10

COPY 2 FACILITY MAILS TO GENERATOR

NONHAZARDOUS WASTE MANIFEST

Please type (or print)	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1
	N·Y·D·0·5·8·5·7·4·9·2·2		1 of 1

GENERATOR

3. Generator's Name and Mailing Address
Black Decker c/o Loueiro Eng
100 Northwest Dr
Plainville, CT 06062

4. Generator's Phone (860) 747-6181

A. Nonhazardous Waste Manifest Document Number: UIS A 0322888

B. G.S.I. (Gen. Site Address)
Black & Decker
56-15 Queens Blvd
Woodside, NY 11377

5. Transporter 1 Company Name: UNITED INDUSTRIAL SERVICES
6. US EPA ID Number: C.T.D.0.2.1.8.1.6.8.8.9

C. S.T.I. (Trans. Lic. Plate #): 392944

7. Transporter 2 Company Name
8. US EPA ID Number

D. Tran. Phone (203) 238-6745

9. Designated Facility Name and Site Address
BRIDGEPORT UNITED RECYCLING
50 CROSS STREET
BRIDGEPORT, CT 06610

10. US EPA ID Number: C.T.D.0.0.2.5.9.3.8.8.7

E. S.T.I. (Trans. Lic. Plate #)

F. Tran. Phone ( )

G. State Facility's ID (Not Required)

H. Facility's Phone 203 3341656

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON DOT / NON RCRA REGULATED MATERIAL NONE, NONE, NONE	0.0.1	C.M	00020	Y	EPA NONE / STATE CR05
b.					EPA / STATE
c.					EPA / STATE
d.					EPA / STATE

J. Additional Descriptions for Materials Listed Above
soil
a.
c.
b.
d.

K. Handling Codes for Wastes Listed Above

	Interim	Final		Interim	Final
a.		H141	c.		
b.			d.		

15. Special Handling Instructions and Additional Information
1) F022610002RL - EMERGENCY RESPONSE GUIDE # N/A EMERGENCY PH# (203)238-6745
21300165 NET
CAN# 2028 J040710 0137 101

Point of Departure:

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable State laws and regulations.

Printed/Typed Name	Signature	Month	Day	Year
X KEITH VOLKERT Agent for Black Decker (U.S.) Inc	X Agent for Black and Decker (U.S.) Inc	04	13	10

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Ken Wyman		04	13	10

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
10.65 TONS

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Deborah Duquette		04	13	10

COPY 2 FACILITY MAILS TO GENERATOR

VEOLIA ENVIRONMENTAL SERVICES

7196

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD 0 5 8 5 7 4 9 2 2	1	(877) 818-0087	ZZ 00193448

GENERATOR

5. Generator's Name and Mailing Address
BLACK & DECKER (U.S.) INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 860 747-8181

Generator's Site Address (if different than mailing address)
BLACK & DECKER(U.S.), INC.
56-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name
FREEHOLD CARTAGE INC
U.S. EPA ID Number: NJD 0 5 4 1 2 5 1 6 4

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-6132
U.S. EPA ID Number: NOT REQ 0 5 0

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	x x 1	CM	20 (EST. WEIGHT) ADD.	T	NONE
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) W123737 A:HLR123737 -J- ER Service Contracted by VESTS

INT'L

15. GENERATOR S/OFFEROR S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELINAS AGENT FOR BLACK AND DECKER (U.S.) INC
Signature:
Month 05 Day 06 Year 10

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Shipment

Transporter 1 Printed/Typed Name: AL JOHNSON
Signature:
Month 05 Day 06 Year 10

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Shipping Document Tracking Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a

Printed/Typed Name: Mary Maloney
Signature: Mary Maloney
Month 05 Day 11 Year 10

DESIGNATED FACILITY TO GENERATOR

VEOLIA ENVIRONMENTAL SERVICES

FCT819

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD055574922	1	(877) 818-0087	ZZ 00193444

5. Generator's Name and Mailing Address

BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062

Generator's Phone: 860 747-8181

Generator's Site Address (if different than mailing address)

BLACK & DECKER(U.S.), INC.
58-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name — U.S. EPA ID Number

FREEHOLD CARTAGE INC — NJD054126164

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104

Facility's Phone: 585 223-6132 — NOT REQ 050

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL) 18.35 TON	1	CM	20	T	NONE / L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1) W.123737 A:HLR123737 -|- ER Service Contracted by VESTS

BCN 9450

15. GENERATOR S/OFFEROR S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: AS PAUL GELINAS AS AGENT FOR BLACK AND DECKER (U.S.) INC — Signature — Month: 4 Day: 22 Year: 10

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Shipment

Transporter 1 Printed/Typed Name: LARRY GAMBELLINI — Signature — Month: 4 Day: 22 Year: 10

Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Shipping Document Tracking Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a

Printed/Typed Name: Sandra Duffy — Signature — Month: 5 Day: 3 Year: 10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

VEOLIA
ENVIRONMENTAL SERVICES

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD065574922	1	(877) 219-0087	ZZ 00193445

GENERATOR

5. Generator's Name and Mailing Address: BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 800 747-8181

Generator's Site Address (if different than mailing address): BLACK & DECKER(U.S.), INC.
56-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name: FREEHOLD CARTAGE INC — U.S. EPA ID Number: NJD054126184

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-8132 — U.S. EPA ID Number: NOT REQ 050

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	01	C/M	EST 18	T	NONE / L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) W:129737 A:HLR129737 -I- ER Service Contracted by VESTS

15. **GENERATOR S/OFFEROR S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELWAS AS AGENT FOR BLACK&DECKER (US), INC. — Signature: [signature] — Month: 4 Day: 23 Year: 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Shipment
Transporter 1 Printed/Typed Name: Robert Dalbas — Signature: Robert Dalbas — Month: 04 Day: 23 Year: 10
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Shipping Document Tracking Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a
Printed/Typed Name: Sabrina Ravallette — Signature: Sabrina Ravallette — Month: 4 Day: 26 Year: 10

DESIGNATED FACILITY TO GENERATOR

VEOLIA
ENVIRONMENTAL SERVICES

FCL '14

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD055574922	1	(877) 813-0087	ZZ 00193446

GENERATOR

5. Generator's Name and Mailing Address
BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 860 747-8181

Generator's Site Address (if different than mailing address)
BLACK & DECKER(U.S.), INC.
58-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name
FREEHOLD CARTAGE INC
U.S. EPA ID Number: NJD054128164

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-5132
U.S. EPA ID Number: NOT REQ 050

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	001	CM	EST. 15	T	NONE / L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) W.123737 A:HLR123737 -|- ER Service Contracted by WESTS

Box # 0003

INT'L

15. GENERATOR S/OFFEROR S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELINAS AS AGENT FOR BLACK & DECKER (U.S.) INC.
Signature:
Month: 4 Day: 23 Year: 10

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Shipment
Transporter 1 Printed/Typed Name: JOHN M. SEBJAN SR.
Signature:
Month: 04 Day: 23 Year: 10

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Shipping Document Tracking Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a
Printed/Typed Name: Sayra Duffy
Signature:
Month: 5 Day: 4 Year: 10

DESIGNATED FACILITY TO GENERATOR

VEOLIA
ENVIRONMENTAL SERVICES

746

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD058574922	1	(877) 918-0087	ZZ 00193457

5. Generator's Name and Mailing Address
BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 860 747-5181

Generator's Site Address (if different than mailing address)
BLACK & DECKER(U.S.), INC.
56-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name: FREEHOLD CARTAGE INC — U.S. EPA ID Number: NJD054126184

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY.
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-6132
U.S. EPA ID Number: NOT REQ 050

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	1	CM	11 LBS	T	NONE / L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) W.123737 A:HLR123737 -|- ER Service Contracted by VESTS
BOX # 9436

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELINAS AGENT ON BEHALF OF BLACK AND DECKER (U.S.), INC. — Signature — Month 4 Day 28 Year 10

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Shipment
Transporter 1 Printed/Typed Name: LARRY GUMBELTON — Signature — Month 4 Day 28 Year 10
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Shipping Document Tracking Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year
19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)
1 | 2. | 3. | 4.
20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a
Printed/Typed Name: Mary Maloney — Signature — Month 05 Day 08 Year 10

DESIGNATED FACILITY TO GENERATOR

VEOLIA
ENVIRONMENTAL SERVICES

796

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	NYD058574822	1	(877) 818-0087	ZZ 00193447

GENERATOR

5. Generator's Name and Mailing Address
BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 860 747-6181

Generator's Site Address (if different than mailing address)
BLACK & DECKER(U.S.), INC.
58-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name
FREEHOLD CARTAGE INC
U.S. EPA ID Number: NJD054126184

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-6132
U.S. EPA ID Number: NOT REQ 050

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes		
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	01	C/M	EST 15	T	NONE		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) W.123737 A:HLR123737 -|- ER Service Contracted by VESTS

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELINAS, AS AGENT FOR BLACK AND DECKER (U.S.), INC. | Signature | Month 4 Day 29 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Shipment
Transporter 1 Printed/Typed Name: Robert Baldos | Signature | Month 4 Day 29 Year 10
Transporter 2 Printed/Typed Name: | Signature | Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Shipping Document Tracking Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a
Printed/Typed Name: Sabrina Ranalletta | Signature: Sabrina Ranalletta | Month 5 Day 6 Year 10

DESIGNATED FACILITY TO GENERATOR

VEOLIA
ENVIRONMENTAL SERVICES

880

SHIPPING DOCUMENT	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Shipping Document Tracking Number
	N Y D 0 5 6 5 7 4 8 2 2	1	(877) 818-0087	ZZ 00193456

GENERATOR

5. Generator's Name and Mailing Address
BLACK & DECKER (U.S.), INC.
100 NORTHWEST DRIVE
PLAINVILLE, CT 06062
Generator's Phone: 860 747-8181

Generator's Site Address (if different than mailing address)
BLACK & DECKER(U.S.), INC.
56-15 QUEENS BLVD
WOODSIDE, NY 11377

6. Transporter 1 Company Name
TREEHOLD CARTAGE INC
U.S. EPA ID Number: N J D 0 5 4 1 2 5 1 6 4

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HIGH ACRES LANDFILL & RECYCL
425 PERINTON PARKWAY
FAIRPORT, NY 14450-9104
Facility's Phone: 585 223-6132
U.S. EPA ID Number: N O T R E Q 0 5 0

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Codes		
	1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL)	01	CM	15 EST	T	NONE		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) W123737 A:HLR123737 -I- ER Service Contracted by VESTS

INT'L

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: PAUL GELINAS AS AGENT FOR BLACK AND DECKER (U.S.), INC.
Signature:
Month: 4 Day: 30 Year: 10

16. International Shipments ☐ Import to U.S ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Shipment

Transporter 1 Printed/Typed Name: Robert Daldos
Signature: Robert Daldos
Month: 4 Day: 30 Year: 10

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

SIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Shipping Document Tracking Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a

Printed/Typed Name: Sabrina Ransellette
Signature: Sabrina Ransellette
Month: 5 Day: 3 Year: 10

DESIGNATED FACILITY TO GENERATOR

FCI

BILL OF LADING

$ 219820

MANIFEST / DOCUMENT NO.

White - Original
Yellow - FCI Billing
Blue - FCI Office/Customer
Green - Returned by TSDF
Gold - Retained by Generator

$ 219820

Loureiro

Engineering • Construction • EH&S • Energy • Waste

February 11, 2014

New York State Department of Environmental Conservation
47-40 21st Street
Long Island City, New York 11101-5401

Attn: Ms. Dana Kaplan, Environmental Engineer I

RE: Revised Thermal SVE Interim Remedial Measure Construction Completion Report
DeWalt Service Center - 56-15 Queens Boulevard, Woodside, New York
Site No.: C241129

Dear Ms. Kaplan:

Enclosed please find one copy of the revised 3-Phase Electrical Resistive Soil Heating/Vapor extraction System Interim Remedial Measure Construction Completion Report for the above referenced site. As requested in your e-mail dated November 15, 2013, the revised report includes additional performance data obtained during operation of the thermally enhanced soil vapor extraction system from August 4, 2010 through July 21, 2011.

If you should you have any questions concerning the enclosed report, please feel free to contact me at 860-410-2904.

Sincerely,

LOUREIRO ENGINEERING ASSOCIATES, INC.

Kevin J. Bitjeman, L.E.P
Senior Project Manager

CC: Kathryn Hinckley, Stanley Black & Decker