Remedial Action Work Plan

PELHAM PLAZA
PELHAM, NEW YORK
SITE NO. V00110-3

Volunteer: Levin Properties, L.P.
North Plainfield, New Jersey

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ABBREVIATIONS AND ACRONYMS

APE	Annual Project Evaluation
AST	aboveground storage tank
BTEX	benzene, toluene, ethyl benzene and xylenes
C&D	construction and demolition
DNAPL	dense non-aqueous phase liquid
DVR	Data Validation Report
ELAP	Environmental Laboratory Approval Program
ENGINEER	A registered Professional Engineer in the state of New York
GAC	granular activated carbon
gpm	gallons per minute
HASP	Health and Safety Plan
HVAC	heating, ventilation, and air conditioning
LNAPL	light non-aqueous phase liquid
MGP	manufactured gas plant
MSB	Matrix Spike Blank
msl	mean sea level
ms/msd	matrix spike/matrix spike duplicate
MSW	Municipal Solid Waste
NAPL	non-aqueous phase liquid
NAVD88	North American Vertical Datum of 1988
NYSDEC	New York State Department of Environmental
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OM&M	Operation, Monitoring, and Maintenance
OSHA	Occupational Safety and Health Administration
OTB	Off-Track Betting
Ppbv	part per billion-volume
PID	photoionization detector

PPE	personal protective equipment
ppm	parts per million
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RAWP	Remedial Action Work Plan
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOCs	semivolatile organic compounds
SWPPP	Stormwater Pollution Prevention Plan
TAGM	Technical Administrative Guidance Memorandum
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
VCA	Voluntary Cleanup Agreement
VOCs	volatile organic compounds

0.0 EXECUTIVE SUMMARY

The Pelham Plaza Shopping Center is an approximate twenty acre retail center situated along Boston Post Road and Pelham Parkway in the Village of Pelham Manor. This site formerly consisted of a manufactured gas plant (MGP) that was operated by various predecessors of Consolidated Edison of New York, Inc. (Con Edison) until approximately 1951 and a liquid petroleum-air gas production plant with petroleum off-loading and storage facilities that were operated by Con Edison until 1968. These manufactured gas and purification operations resulted in the production of by-products and their presence as purifier waste materials and coal tar residuals, or non-aqueous phase liquids (NAPL) in soil and groundwater at the Site were determined through site investigation activities conducted in several phases between 1989 and 2004. The presence of volatile and semi volatile organic compounds in the groundwater and subsurface soil and vapors is the basis for the proposed remedial actions.

The Remedial Action Work Plan (RAWP) was developed and its objectives are to: 1) Reduce or mitigate the impact to the public health or the environment related to the soil and groundwater contamination found at the Site, 2) Implement engineering and institutional controls that result in the long term protection of public health and the environment for the restricted commercial/retail use, and 3) Assure that post construction Operation, Maintenance, and Monitoring Plans are in place relative to the installed engineering and institutional controls and that they continue to protect the public and the environment from possible risks.

Description of Selected Remedy

The remedy components that are proposed in this RAWP to satisfy the objectives outlined above and conform to applicable, officially promulgated standards include:

- removal of approximately 1,600 cubic yards of purifier wastes in the vicinity of the on-Site Mandee's Building and removal of approximately 50,000 cubic yards of grossly contaminated soils in other portions of the Site through excavation and off-site disposal (approximately 35% of total excavated volume),
- prevention of dense non-aqueous phase liquid (DNAPL) migration into Eastchester Creek through the installation of a sheet pile barrier wall,
- active recovery of NAPL via the installation of engineered recovery systems,
- hydraulic control of the Site through groundwater extraction and treatment,
- installation of a cap system over the entire Site to prevent exposure to contaminated soil and limit the infiltration of precipitation,
- installation of sub-slab ventilation systems for the Mandee's and former Kmart buildings, and

- long-term operation, monitoring and maintenance of the Site through the implementation of a Site Management Plan and imposition of an environment easement reflecting the required institutional and engineering controls.

Major RAWP Activities

Pre-Remedy Site Investigations – Additional site investigations will be performed prior to the finalization of the remedial design to allow for better delineation of the vertical and horizontal extent of wastes in the western portion of the site, assure grossly contaminated soils are not present in seven areas of the eastern portion of the site, and evaluate the dewatering needs for excavation activities. These investigations will generally involve digging of test pits with a conventional backhoe or excavator.

Source Removal- Soils – Three areas of grossly contaminated soils and one area of purifier wastes have been identified through site investigations. These materials will be excavated using conventional track mounted excavation equipment. The excavations will be conducted under NYSDEC oversight and use appropriate odor control measures. The excavations may vertically extend below the water table generally to a depth of 20 feet, or deeper if deemed technically feasible or practicable under the circumstances. The excavations will generally extend horizontally until the excavation sidewalls are observed to be free of grossly contaminated soils and/or former MGP piping/structures have been removed to the extent technically feasible within the property boundaries. The excavated grossly contaminated soils and former MGP piping and structures will be trucked off-site to an approved disposal facility. The excavations will be backfilled using segregated non-grossly contaminated soils and clean fill from off-site sources.

Barrier Wall and Hydraulic Control – The installation of a sheet pile barrier wall to bedrock along the alignment of Eastchester Creek within the Site will be completed in order to minimize the discharge of NAPL to the creek. In order to maintain verticality of the wall, tie back rods will be embedded into bedrock. In addition, groundwater pumping will be conducted to prevent groundwater from mounding behind the hydraulic barrier wall. Dissolved contaminates in the recovered groundwater will be treated by an on-site system and then discharged to the Eastchester Creek.

NAPL Recovery – This activity will include the removal of both light non-aqueous phase liquids (LNAPL) and DNAPL from the saturated zone using a portion of the existing well network at the Site as well as additional recovery wells. The LNAPL is generally located along the barrier wall and will be recovered as part of the groundwater pumping associated with the barrier wall. DNAPL is located in the central and southwestern portions of the site and will be recovered using pumps installed in eight recovery wells. All recovered LNAPL and DNAPL will be pumped into appropriate tankage and shipped off-site for disposal or recycling.

Sub-Slab Depressurization Systems – Sub-slab depressurization/venting systems will be installed in the Mandee's building and the renovated Kmart building to eliminate the potential pathway of subsurface vapors to an enclosed space. The general components of the depressurization systems include: perforated piping installed in existing sub-base below the building slab or saw cut trenches, header piping to a blower unit, a blower and associated discharge piping to the atmosphere at an elevation above the roof of the building.

Capping – A cap will encompass the entire site to prevent incidental exposure to contaminated soils. Final grading will include placement of a minimum of two feet of clean soil in landscaped areas (including 6 inches of top soil to support vegetation) and a minimum of 6 inches of asphalt paving in roadways and parking lots or of concrete in building slabs and foundations. Where applicable, an indicator such as orange plastic snow fence will be placed to demarcate the cover soil from the subsurface soil. Clean soil would constitute soil with no analytes exceeding NYSDEC TAGM 4046 soil cleanup objectives or local site background as determined by the procedure in NYSDEC Draft DER 10 ("Technical Guidance for Site Investigation and Remediation").

Site Management Plan – A Site Management Plan (SMP) will be developed to: (a) address residual contaminated soils or fill that may be excavated from the site during future redevelopment; (b) provide the installation of a sub-slab depressurization system or other mitigation measures for newly constructed buildings; c) identify any property use restrictions; and (d) provide for the long-term operation and maintenance of the components of the remedy. The plan will set requirements for soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations

Institutional Controls – An Environmental Easement will be established for the Site that will (a) require compliance with the approved SMP; (b) limit the use and development of the property to restricted commercial/industrial uses only; c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; (d) contain restrictive terms that the environmental easement can only be amended or extinguished by the Commissioner of the NYSDEC; and (e) require the property owner to complete and submit to the NYSDEC an annual certification. This annual submittal would contain certification that the institutional controls and engineering controls are still in place, allow the NYSDEC access to the site, and that nothing has occurred that would impair the ability of the remedy to protect public health or the environment, or constitute a violation or failure to comply with the SMP.

1.0 INTRODUCTION

In 1997, Levin Properties, LP (Levin or the Volunteer) entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) at the Pelham Plaza Shopping Center (herein after referred to as the Site). The VCA was amended in June 1998 to include investigation of a former tire store at the Site, and an updated VCA was entered into between Levin and the NYSDEC in July 2002. The Site is located almost entirely at 847 Pelham Parkway in Pelham Manor, New York, with the southeast portion of the property including the building occupied by New York City Off-Track Betting (OTB) being located in the Bronx, New York (Figure 1.0.1).

The Site formerly consisted of an oven gas type and carbureted water gas type manufactured gas plant (MGP) that was operated by various predecessors of Consolidated Edison of New York, Inc. (Con Edison) until approximately 1951 and a liquid petroleum-air gas production plant with petroleum off-loading and storage facilities that were operated by Con Edison until 1968. The Site now consists of retail stores and surrounding parking areas. The intended future use of the Site will continue to be for retail/commercial use (after implementation of the remedy and redevelopment of the commercial building formerly occupied by Kmart). Previous site investigations were conducted by AKRF, Inc. in 1993 through 2003 to define the nature and extent of soil and groundwater contamination. In 2004, Malcolm Pirnie evaluated the potential for soil vapor intrusion into structures that will remain after redevelopment. Detailed descriptions of Site history, scope of previous site investigations, geology, hydrogeology, and nature and extent of contamination are provided in the approved Phase I Site Investigation Report (June 2004) and the approved Phase II Site Investigation Report (January 2005). The Site Investigation documents were prepared by AKRF, Inc. and Malcolm Pirnie, Inc and are now known collectively as the Site Investigation Report.

The remedy detailed in this Remedial Action Work Plan (RAWP) is based on the findings of the previous site investigations, the Conceptual RAWP, and NYSDEC comments on the various drafts of this document. Malcolm Pirnie completed the Site Investigation Report in January 2005. Malcolm Pirnie prepared a Conceptual Remedial Action Work Plan (cRAWP) in April 2004 based on the findings of the previous site investigations. An Interim Remedial Measures (IRM) Work Plan for the Mandee's building at the Site was approved by the NYSDEC in July 2005.

The objective of the IRM is to lessen the potential for exposure to VOCs in the indoor air of the Mandee's building. This objective will be accomplished by removal of any purifier wastes and/or grossly contaminated soils adjacent to the Mandee building (Area E of the RAWP) and controlling the potential migration of VOCs into the Mandee's building with an active sub-slab depressurization ventilation system. Additional indoor air and soil gas samples will then be collected from within the Mandee's building and below the floor slab to evaluate the effects of removal action and active ventilation measures on the potential pathway. Based on the post excavation indoor air and soil gas results and observations, additional measures may be required to fine tune the IRM remedial approach and/or to further assess or mitigate the potential VOC migration pathway to the building.

Several pre-remedial site investigation activities have been conducted or will be performed during the remedial design period and include: additional test pitting in the western portion of the site to further define potential excavation areas, geotechnical borings along the alignment of the proposed barrier wall, pump testing to support the hydraulic control system and the groundwater treatment system, identification of location of subsurface utilities, excavation of test pits in the eastern portion of the property to evaluate whether NAPL/coal tar is present in the shallow vadose zone, and subsurface vapor intrusion studies for the strip mall adjacent to the Kmart building since redevelopment plans include their reuse.

1.1 Work Plan Objectives

The overall objective of this RAWP is to present a plan to the NYSDEC which: 1) Reduces or mitigates the significant threats to the public health or the environment related to the soil and groundwater contamination found at the Site, 2) Implements engineering and institutional controls that result in the long term protection of public health and the environment for the restricted commercial/retail use, and 3) Assures that post construction Operation, Maintenance, and Monitoring Plans are in place relative to the installed engineering and institutional controls and that they continue to protect the public and the environment from possible risks. These remedial action work plan objectives presented in Section 1.2 fulfill the requirements of the July 2002 Voluntary Cleanup Agreement between the NYSDEC and the Volunteer.

1.2 Remedial Objectives

The remedial objectives are to remove purifier wastes (purifier waste is a mixture of wood chips and iron filings that were used to remove impurities from manufactured gas) and grossly contaminated soils (soil that is saturated with non aqueous phase liquids (NAPL) and/or coal tar) from several areas of the Site where these materials are present and are potentially impacting soil and groundwater, to install engineering controls for mitigating potential exposure pathways not addressed by removal activities, and to establish institutional controls to assure that the remedy goals are achieved/maintained into the future. The goal is to remediate the Site such that a beneficial reuse can be realized in a manner that is protective of human health and the environment. The focus of the RAWP is on the potential health risks to construction/utility workers, tenant employees, and customers or other short duration visitors to the Site generally associated with the contaminants of concern related to the former MGP operations.

The remedy in this work plan is based on the findings of the Site Investigation Report (Phase I dated July 2004 and Phase II dated January 2005). The remedial strategy is consistent with 6 NYCRR 375-1.10(c)(1) through (c)(6):

- Protective of Human Health & Environment
- Compliance with New York Standards, Criteria, and Guidelines
- Short-Term Effectiveness
- Long-Term Effectiveness & Permanence
- Reduction of Toxicity, Mobility, or Volume
- Implementability

The remedy components that are proposed in this RAWP to satisfy these objectives include:

- removal of purifier wastes at the Mandee's Building and removal of grossly contaminated soils in other portions of the Site through soil excavation and off-site disposal,

- prevention of DNAPL migration into Eastchester Creek through the installation of a barrier wall,
- active recovery of NAPL via the installation of an engineered system,
- hydraulic control of the Site through groundwater extraction and treatment,
- installation of a cap system over the entire site to prevent exposure to contaminated soil and limit the infiltration of precipitation, and
- long-term operation, monitoring and maintenance of the site through the implementation of an environment easement that Levin will grant to the State of New York in accordance with Article 71, Title 36 of the New York Environmental Conservation Law (Environmental Easement) and compliance with the Site Management Plan
- installation of sub-slab ventilation systems for the Mandee's and Kmart buildings, and
- installation of sub-slab ventilation system or other appropriate mitigation measures if deemed necessary by the NYSDEC and NYSDOH at that time for any new construction.

1.3 Site Location and Description

The Site is approximately 20 acres and is situated along Boston Post Road and Pelham Parkway in the Village of Pelham Manor and known as Block 5655, Lot 300 on the Tax Map of the Town of Pelham. A small portion of the Site, including the building occupied by New York City OTB, is located in the Bronx, New York (Figure 1.0.1). The Site is occupied by retail facilities surrounded by asphalt-paved parking, with vehicle access provided from both Boston Post Road and Pelham Parkway. All aspects of future Site redevelopment will be managed by an Environmental Easement and by a NYSDEC approved Site Management Plan.

In the Voluntary Cleanup Agreement dated July 2002 the Site was divided into three operable units. As outlined in the Phase II Site Investigation Report: Operable Unit 2 (OU-2) includes the existing main shopping center building and attached retail space, with a footprint of approximately 150,000 square feet, in roughly the middle of the site; Operable Unit 1 (OU-1) is the remainder of the site; and OU-3 is Eastchester Creek. OU-

3 has been further defined to include only that small, sandy, beach-like area in the southwestern corner of the Site that is outside the indented section of the proposed hydraulic barrier. The shoreline in this area is not protected by a bulkhead and forms a moderately sloping stream bank and mudflat during low tide. While this area is part of the Site, Con Edison will address OU-3 pursuant to a separate VCA between the NYSDEC and Con Edison. The Pelham Plaza RAWP addresses all aspects of OU 1 & 2, and also reduces the potential impact of the Site on the creek and OU-3. For remedial design purposes, some aspects of the remedy, including the hydraulic barrier, require construction in the creek on or slightly outside the formal Site boundary. Figure 1.0.2 depicts the general limits of the Site and the operable units.

1.4 Site History

Con Edison and several of its predecessor companies, including the Pelham Gas Light Company and Westchester Lighting Company, occupied the Site starting in the late 1800s and operated a manufactured gas plant there until approximately 1951. Until approximately 1947, the plant was capable of producing both carbureted water gas and coal gas, but produced carbureted water gas almost exclusively. In 1947, a liquid petroleum processing system was installed at the plant and it started producing petroleum gas in addition to water gas. In 1951, carbureted water gas MGP operations ended when Con Edison converted its gas supply operations to natural gas. Between 1951 and 1968, Con Edison installed liquid propane-air gas production facilities at the Site to provide stand-by gas supply in the event of a natural gas shortage.

In 1965, Barbara Realty Company purchased the property from Con Edison. As part of the purchase agreement, the southern portion of the Site was leased to Con Edison for continued operation of the liquid petroleum/oil gas and liquid propane-air gas processing facilities. Barbara Realty Company then sold the property to Douglaston Associates in 1966. Later in 1966, John Hancock Mutual Life Insurance Company became the fee owner of the property and entered into a ground lease with Barbara Realty Company, predecessor in interest to Levin, the current ground lessee and operator of the shopping center at the Site. The main shopping center that currently occupies the Site was constructed by early 1966. Construction of the separate retail facilities located adjacent to the main building and in the northeastern corner of the Site was completed in

1967. In September 1998, the Site was sold by Hancock Mutual Life Insurance Company to Janice H. Levin, and the property subsequently passed into her estate; trusts created under the estate are the current owners.

In 1968, Con Edison ceased operations of the liquid petroleum/oil gas and liquid propane-air gas processing facilities, demolished all remaining MGP structures, and terminated their lease. After Con Edison vacated the Site, the southern portion of the property was converted to an asphalt-paved parking lot. A Site plan indicating the locations of the former structures at the Site, which takes into account the previous Site uses, is provided as Figure 1.0.2. A more detailed description of historic operations and property transactions are included in the initial Site Investigation Report Work Plan (AKRF, July 2002).

1.5 Previous Investigation

1.5.1 Chronology

Multiple environmental and geotechnical investigations have been performed at the Site by AKRF, Inc., Whitestone Associates, Inc., Geo-Tech Associates, Inc, Converse Engineering Consultants, P.C., and Malcolm Pirnie, Inc. Representative soil and groundwater analytical results are included in the Site Investigation Report (SIR). The following is a chronological summary of significant environmental site investigations, including the results and recommendations of each:

- In January 1989, MGP residuals (coal tars) were encountered at the Site during geotechnical and environmental investigations undertaken for expansion of the shopping center. Clement Associates, then consultant for Levin, notified the NYSDEC and proposed installation of monitoring wells to characterize ground-water quality and to develop appropriate health and safety protocols for future construction activities. No evidence of immediate danger to public health or the environment was identifed and additional investigation was warranted.

- In May 1989, the NYSDEC and Levin reached an agreement whereby Levin would conduct further research regarding Site history, and develop investigation and remediation requirements for the Site. In 1992, Levin retained AKRF to develop a site investigation work plan, which was approved by the NYSDEC in April 1993. The work plan was implemented in May 1993 with findings provided in an Investigation Report dated February 1995.

- A work plan was prepared by AKRF in September 1995 for the completion of an electromagnetic survey and soil gas sampling. In March 1997, Levin entered into a VCA with the NYSDEC. The VCA was amended in June 1998 to include investigation of a former tire store at the Site. The findings of this investigation were contained in a 1998 report prepared by AKRF (Investigation of Former Tire Store; October 1998). The investigation showed that soil under the former tire store building contained coal tar. Hydrocarbon fingerprinting of samples collected from the building indicated a hydrocarbon signature consistent with coal tar or coal tar by-products.

- The VCA between Levin and the NYSDEC was revised in July 2002. An additional Site Investigation Work Plan (Phase I) was prepared by AKRF and approved by the NYSDEC in August 2002. The Work Plan outlined the Site history, sampling objectives and methodologies to be used for the work. Site investigation field activities, which included soil boring and sampling, collection of soil gas samples, installation of monitoring wells and groundwater level monitoring, groundwater sampling, and excavation of test pits, were completed between August and November 2002.

- Field examination and laboratory analysis of soil samples from the Phase I Site Investigation indicated contamination of soil and groundwater with volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Soils saturated with NAPL, primarily dense NAPL (DNAPL - NAPL that has a greater specific gravity than that of water), was observed at and below the water table in the western and eastern portions of the Site. DNAPL was generally present across wide intervals at and below the water table in borings located behind the shopping center building and adjacent to Eastchester Creek. Investigation within the foot-print of a former MGP relief holder within the Kmart building was inconclusive due to shallow refusal encountered in soil borings advanced within the Kmart building.

- Based on the site investigation results, the NYSDEC recommended a second phase of investigation (Phase II) to include an evaluation of the nature and extent of contamination beneath the former Kmart building and further assessment of the nature and extent of NAPL contamination and subsurface conditions in the eastern portion of the Site.

- In May 2003 at the NYSDEC's request, several NAPL accumulation/recovery wells were installed by AKRF in the western portion of the Site along Eastchester Creek

- In August 2003, AKRF submitted a Phase II SIR Work Plan outlining methodologies for additional investigation activities and the scope of a RAWP. The Phase II SIR Work Plan incorporated comments provided by the NYSDEC in August 2003. The objectives of the Phase II SIR Work Plan were as follows:
    - Further assess the former structures under the main shopping center building through installation of test pits at selected locations to determine if they would be considered potential source areas requiring remediation;
    - Further delineate the extent of NAPL impacted soils and potential source areas by installation of borings and test pits at selected locations in the eastern portion of the Site;
    - Further delineate the presence of volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and metals in soil;
    - Further delineate the extent of NAPL and dissolved phase contaminants in groundwater across the site through installation and sampling of new monitoring wells near Eastchester Creek; and,
    - Quantify tidal effects on groundwater elevations across the site through a 24-hour test using pressure transducers in selected wells and periodic gauging from the remaining wells.

- The following results of the field work performed in accordance with the April 2003 SIR Work Plan and the August 2003 Phase II SIR Work Plan were documented in a draft Phase II SIR prepared by AKRF.
    - Field examination and laboratory analysis of soil samples collected at the Site indicated the presence of VOCs and SVOCs in soils. Field evidence of contamination in soils was observed in 41 of 55 borings and 17 of 21 test pits for shallow soils [up to 10 feet below ground surface (bgs)] and 47 of 55 borings for subsurface soil (greater than 10 feet bgs). The contamination was observed in borings and test pits located throughout the site including in front of the main shopping center buildings (eastern portion of site – OU-1), under the former Kmart building (OU-2), and immediately behind the building/along Eastchester Creek (western portion of the site – OU-1).
    - 34 shallow soil samples and 38 subsurface soil samples analyzed for metals, 48 contained one or more metals (mercury, arsenic, cadmium, copper, magnesium, lead, selenium, and chromium) at concentrations exceeding the upper limit of their respective Eastern United States background levels.
    - NAPL was observed in 45 of the total 115 borings on the Site. NAPL was encountered in test pits located near former MGP structures, along Eastchester Creek and the southeastern portion of the property. NAPL was observed in recovery and monitoring wells at the Site with the most significant extent (>50 feet) of DNAPL observed in RW-10 and RW-11 and to a lesser extent (<5 feet) in RW-6 and RW-9. The DNAPL in wells RW-10 and RW-11 appears to be following the bedrock contour of this deep trough geologic feature of the site. Wells containing NAPL were gauged, and NAPL was recovered using absorbent socks and via periodic pumping using a vacuum truck in wells RW-6,9,10,&11.
    - VOCs and SVOCs were detected in groundwater samples collected throughout the Site at concentrations exceeding their respective GA Standards, and one or more metals (iron, sodium, manganese, magnesium, arsenic and aluminum) were detected in groundwater samples at concentrations exceeding their respective GA Standards.
    - Soil gas sampling conducted beneath the foundation of the former Kmart building detected concentrations of VOCs with the average benzene, toluene, ethyl benzene, and xylenes (total) being 43 parts per billion-volume (ppbv), 72 ppbv, 14 ppbv, and 45 ppbv, respectively.
    - Qualitative human health exposure assessment indicated that several potential complete exposure pathways exist in the absence of any institutional or engineering controls. The potential exposure pathways for on-site maintenance workers or off-site recreation users include: groundwater/surface water ingestion, inhalation and dermal contact; soil/sediment incidental ingestion and dermal contact; fish ingestion; and particulate inhalation.

- In January 2004, Levin retained Malcolm Pirnie to prepare a RAWP for submittal to the NYSDEC. In 2004, Malcolm Pirnie completed additional soil-gas sampling at the Site in buildings that are expected to remain after redevelopment [Mandee's, the OTB building, Citibank, and the A.J. Wright building].

- In April 2004, Malcolm Pirnie submitted a Conceptual RAWP to the NYSDEC which included proposed soil excavation areas and a configuration of the barrier wall; addressed hydraulic control of the Site's groundwater; and addressed remedial construction investigation of the areas surrounding recovery wells RW-10, RW-11 and the vicinity of the OTB building.

- The Site Investigation Reports were approved by the NYSDEC, (the Phase I Report in June 2004 and the Phase II Report in January 2005). The Phase I and Phase II reports are identified for future purposes as the Site Investigation Report or SIR. The SIR data is the basis of this RAWP.

- An IRM Work Plan including a Construction Management Plan (CMP) for the Mandee's building approved by NYSDEC in July 2005. The objective of the IRM is to lessen the potential for exposure to VOCs in the indoor air of the Mandee's building. This objective will be accomplished by removal of purifier wastes and/or grossly contaminated soils adjacent to the building (Area E of the RAWP) and controlling the potential migration of VOCs into the Mandee's building with an active sub-slab depressurization ventilation system. The IRM and CMP contain protective measures for Mandee and Citibank employees, the customers, and neighbors.

- A pre-design/construction field activities plan was approved by NYSDEC in January 2005. The proposed pre-construction/final design investigation activities are primarily geotechnical in nature to support the final design of the remedial actions presented herein and include: geotechnical borings along the alignment of the proposed barrier wall, pump testing to support the hydraulic control system and the groundwater treatment system, identification of location of subsurface utilities, test pits for waste delineation and dewatering, and subsurface vapor intrusion studies for the strip mall adjacent to the Kmart building since redevelopment plans include their reuse.

- Malcolm Pirnie submitted a report on the vapor intrusion studies for the strip mall and the sub-lease portions of the Kmart Building which are anticipated to remain active in the Site redevelopment plans. The study included 12 stores: seven actively leased stores (GNC, Marathon's Gold City, Dress Barn Women, Hallmark, Dress Barn, Nuts About Candy, and Modell's Sporting Goods) and five additional stores that are currently vacant (formerly used as a Fabco Shoe Store, Vision World - an eye care center, a pawn shop, a dentist office, and a nail salon). VOCs that could potentially be related to MGP sources as well as non-MGP sources including BTEX, indane, indene, and naphthalene, were present at variable concentrations in soil gas beneath four of the 12 stores (GNC, Marathon Jewelry, former Fabco Shoes, and Modell's). However, it is recommended that an additional round of indoor air assessment be conducted for all 12 stores during the 2005-06 heating season to further assess the potential for subsurface vapor intrusion in the buildings. Potential vapor intrusion into the Kmart portion of the strip mall was not evaluated since a sub-slab vapor mitigation system is included as part of its redevelopment.

- In April 2005, Malcolm Pirnie completed the geotechnical boring program along the alignment of the barrier wall to verify potential obstructions, installation parameters, sheet lengths, and tie-back requirements.

- In April/May 2005, Malcolm Pirnie completed a detailed pre-construction delineation of the extent of purifier wastes in front of the Mandee's Building using Geoprobe sampling technology. Additionally, sufficient sampling was conducted to characterize the waste streams for a direct load and transport implementation of the excavation phase of the Interim Remedial Measure.

- In May 2005, Malcolm Pirnie completed the pump testing to support the hydraulic control design for the groundwater recovery on the land side of the barrier wall. The waters recovered during the testing were processed through a pilot treatment unit in May/June 2005 to validate the selection of Granulated Activated Carbon as the treatment technology for the remedy.

1.5.2 Geology and Hydrogeology

Site elevations range from 7 to 21 feet above mean sea level (MSL) based on the North American Vertical Datum of 1988 (NAVD88) MSL approximation. In general, the ground surface is higher at the buildings near the eastern end of the Site and slopes to the west toward Eastchester Creek (also known as Hutchinson River).

Bedrock beneath the Site consists of pelitic schist and amphibolite of the metamorphic Manhattan and Hartland formations (Fisher, 1970). Native unconsolidated sediments include alluvium associated with Eastchester Creek floodplain deposits and till (Cadwell, 1989). Most of the native materials in the upper five to 10 feet appear to have been replaced with fill material during development of the Site. Bedrock outcrops approximately 500 feet north of the Site, and at the western bank of Eastchester Creek opposite the northwestern corner of the Site.

The surficial geology at the Site consists of fill materials underlain by native soils consisting of organic peat and micaceous sand units. The fill consists of fine to medium sand with brick, gravel, and coal fragments, and is thicker in the central and eastern portions of the Site. An organic peat layer is present below the fill layer in the western and southwestern portions of the Site, and along a portion of the northern edge of the Site (Figure 1.5.1). The peat layer appears to be absent under the shopping center building and in the eastern portion of the Site. The micaceous sand unit (the lower sand) underlies the peat and fill materials and extends to bedrock.

The bedrock surface ranges in depth from approximately 8 feet below ground surface (bgs) in the northeastern corner of the Site to greater than 126 feet bgs in the southeastern portion (Figures 1.5.2 and 1.5.3). Borings advanced in the eastern portion of the Site indicate the presence of a bedrock trough extending from north to south across the eastern end of the Site. Figure 1.5.4 shows the location of six cross sections traversing the Site. The cross sections are shown on Figures 1.5.5 through 1.5.10.

Eastchester Creek, a tidally influenced tributary of Long Island Sound, is adjacent to the Site along the western boundary. The Site lies within the former flood plain for Eastchester Creek, which is identified as the Hutchinson River south of Interstate Route 95 to the south of the Site. Groundwater levels in wells screened below the peat layer in the western portion of the Site are tidally influenced (maximum effect of approximately ±2 to 4 feet). Slight tidal effects were also measured in monitoring well MW-20 (approximately ±0.11 feet) located at the southeastern corner of the Site near the OTB building. A bulkhead structure is present along the western boundary of the Site, extending from ground level to an unknown depth into the lower sand unit. The bulkhead decreases the hydraulic connection between the groundwater in the upper fill and peat layers and Eastchester Creek. The bulkhead is in significant disrepair in several locations along the Site boundary with the exception of a 120' section of sheet piling wall that was repaired (replacement in-kind) by Con Edison in 1998 to protect its gas main.

The water table is generally shallower in the western portion of the Site and deeper in the east. The peat layer, when present in sufficient thickness (e.g., greater than one foot), acts as a semi-confining unit separating the unconfined fill hydrostratigraphic unit and the deeper sand hydrostratigraphic unit. Groundwater measurements of wells screened above and below the peat layer indicate that groundwater is perched above the peat layer (average maximum difference of approximately two feet between water levels above and below the peat).

Based on groundwater levels measured in monitoring and recovery wells, groundwater flow in the deep hydrostratigraphic unit is generally to the west toward Eastchester Creek (Figure 1.5.11). Groundwater levels measured in wells above the peat layer show a slight gradient to the east on the western side of the Site (Figure 1.5.12). This easterly gradient is believed to be caused by groundwater mounding above the peat in the fill layer, caused by infiltration of surface water along the bulkhead and from leakage of stormwater from damaged parking lot drains.

1.5.3 Nature and Extent of Contamination

Laboratory and field data from previous investigations show that organic contaminants including VOCs and SVOCs are ubiquitous in soil and groundwater across the Site. The VOCs are generally comprised of the organic compounds benzene, toluene, ethyl benzene, and xylenes (BTEX). The SVOCs are generally polycyclic aromatic hydrocarbons, several of which are probable human carcinogens. The sources of much of the VOC and SVOC contamination are tars that are associated with the former MGP operations at the Site. These tars still exist at the Site.

Coal tars and carbureted water gas tars, typically found at former MGP sites like Pelham Plaza, are dark oily liquids which do not readily dissolve in water and are commonly referred to as NAPLs. Most tars are NAPLs that are slightly denser than water or DNAPLs and therefore sink when in contact with water. However, the density driven migration of the DNAPL below the water table may be more stratigraphy dependant, resulting in preferential migration toward the southwestern corner of the Site and the central eastern area near RW-10 and RW-12 (Figure 1.0.2) where DNAPL appears to have pooled. Free-phase non aqueous contaminants lighter than water or LNAPLs that float on the water table appear to be limited to the southwestern portion of the Site and its source is not clearly known but may be related to historic petroleum oil handling and storage both on-site and off-site. These NAPLs currently exist above, on, and below the water table across the Site and act as a continuing source of soil and groundwater contamination. Carbureted water gas process tars can exhibit both DNAPL and LNAPL characteristics. For the purposes of this RAWP, the NAPL/coal tar (free phase and residual product saturation) impacting soils will be referred to as **"grossly contaminated soils"**. Based on previous investigation results, residual NAPL and grossly contaminated soils (NAPL/coal tar saturated soils) are present in three areas in the western portion of the Site and generally above the water table.

Purifier materials, a mixture of wood chips and iron filings, were commonly used at MGP sites to remove sulfur and other undesirable materials from the manufactured gas prior to its distribution. Purifier waste material appears to be present only in the northeastern portion of the Site and appears to be a source of cyanide in soils and nuisance odors in the area surrounding the Mandee's building. The extent of purifier waste material was delineated through a series of borings in April/May 2005. The soil boring locations and the extent of purifier waste materials are shown on Figure 1.5.13.

An overview of the contaminated media delineated at the Site and the associated source material(s) is presented below.

1.5.3.1 Vadose Zone Soils

The soils above the water table exhibit contamination related to MGP operations throughout the Site. Impacted soils in the unsaturated zone were identified in areas of the former MGP infrastructure and under the parking area between the former Kmart building and Eastchester Creek. The NAPL in these areas have physical properties consistent with tars from the water gas process. The NAPL has been found to saturate the unconsolidated deposits and/or exist in scattered discontinuous globules. Either of these conditions generally coincides with elevated VOCs and SVOCs in the soils and typically results in impacts to the groundwater as well. Areas with a substantial volume of contaminants have been termed "source areas" and have been defined as locations at the Site which contain significant volumes of grossly contaminated soils. These source areas are generally located in the western portion of the Site. However, additional test pitting is proposed for the eastern portion of the site as part of a pre-remedial site investigation to determine if additional source areas are present. The NAPL/coal tar saturation is the principal determinant in the remedial measure decisions. NAPL impacted soil (i.e., grossly contaminated soils) located in these areas will be excavated as part of the remedial action in order to protect human health and the environment.

Inorganic compounds are of concern at the Site in the area where MGP purifier wastes were encountered along Pelham Parkway in front of the Mandee store. The purifier waste and the NAPL impacted soil (i.e. grossly contaminated soils) will be excavated as part of the remedial action activities at the site in order to protect human health and the environment.

1.5.3.2 Groundwater

Dissolved phase organic contaminants in groundwater at the Site include VOCs and SVOCs. Groundwater samples were generally not collected from wells containing measurable NAPL because representative dissolved phase water quality samples are difficult to obtain when NAPL is present in the well.

Individual VOCs present in groundwater at the Site include BTEX as well as styrene, tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride. The VOCs are relatively mobile and are present at concentrations exceeding New York State Groundwater Standards. Therefore, engineering controls will be implemented, as discussed below, to limit the discharge of contaminated groundwater to the creek.

1.5.3.3 Non Aqueous Phase Liquids

NAPL was observed in 45 of the 115 soil borings drilled at the Site. NAPL intervals extending from approximately 20 to 100 feet bgs were present in borings located in the central portion of the Site in front of the main shopping center building. NAPL was also present in borings in the western portion of the Site, between the former Kmart building and Eastchester Creek, and in soil boring SB-43, located in the northeastern portion of the Site, near the Mandee's building (formerly Pelham Tire Center).

NAPL was present in the western portion of the Site both above the peat layer and in the sand unit underlying the peat layer. NAPL was observed in test pits excavated along Eastchester Creek (TP-7 and TP-24) and along the southeastern property boundary (TP-32). During monitoring of recovery and monitoring wells, DNAPL was encountered in wells RW-11 and RW-10, located in the parking lot area east of the former Kmart building, at thicknesses of approximately 50 feet and 10 feet, respectively. Currently, recovery of free phase dense NAPL is ongoing at these locations on a 2 to 4 times per month basis. As of September 2005, pumping from these wells using a vacuum truck has produced volumes of recovered NAPL/water exceeding 135,000 gallons and recovery efforts continue to result in a monthly increase of nearly 5,000 gallons. A summary of the DNAPL recovery and Physical/Chemical Analyses is presented in Appendix I.

LNAPL at the water table appears to be limited to the southwestern portion of the Site and most likely related to historic petroleum oil handling and storage. DNAPL is present in wells in the southwestern corner of the Site (recovery wells RW-6 and RW-9) and in wells located in the bedrock trough (recovery wells RW-10 and RW-11) in the eastern portion of the Site. The bedrock trough extends to greater than 126 feet below ground surface in the southern portion of the Site and exists east of the extent of the peat layer.

The free phase LNAPL and DNAPL have the potential to migrate and impact off-Site receptors. Therefore, recovery has been a component of the previous investigations and will continue as a part of the final remedy. Pumping from recovery wells RW-6/9/10&11 using a vacuum truck has produced volumes of DNAPL/water mixture exceeding 135,000 gallons through September 2005 (See Appendix I). Currently, recovery of free phase DNAPL is ongoing at these locations at approximately 2 to 4 times per month with an average DNAPL recovery of 5,000 gallons per month.

1.5.4 Subsurface Structures

During the 2002 and 2003 site investigations, test pits were completed to investigate former MGP structures that were identified through historical records or observed at the Site.

The following structures were identified and investigated:

- A concrete chamber associated with the former underground tar separator was observed in TP-2. This chamber measured approximately 5 feet by 10 feet and contained a concrete bottom at approximately 7 feet bgs.

- A concrete and brick chamber associated with the former brick underground tar tank located adjacent to Eastchester Creek, was encountered in TP-7. The chamber measured approximately 5 feet by 7 feet.

- A concrete structure associated with the former drip separator pit was encountered in TP-3. The structure consisted of a concrete slab just below ground surface connected to a subsurface concrete wall that extended to approximately 5 feet bgs.

- Two concrete and brick pile caps on wooden piles were encountered in TP-23 between a 4-foot thick concrete structure and a 4-foot thick brick and concrete structure. These subsurface structures were associated with interior walls within the former generator house, located in the northwestern portion of the Site.

- A subsurface concrete slab and associated metal I-beam were encountered in TP-24. They were associated with a section of the floor slab for the generator house. A brick and concrete wall extending from just below the surface to approximately 6 feet bgs in the southern end of TP-24 was believed to be a section of the outside wall of the generator house. NAPL was observed seeping into the excavation from the southern wall of TP-24 at 8 to 10 feet bgs.

- Test pit TP-25 was excavated within the footprint of the former underground brick tar tank, to the west of TP-7. A 12-inch metal pipe set in concrete was aligned east to west through the test pit at approximately 4 feet bgs. The concrete and brick chamber observed in TP-7 was not encountered in TP-25. TP-25 was advanced to 6 feet bgs where the elevated PID readings and the presence of NAPL at the water table made further excavation unsafe.

- A 12-inch vertical pipe, two steel beams, and four concrete partitions were present in test pit TP-26, excavated in the area of the former pump house. The structures were associated with elements of the pump house located in the central-western portion of the Site, near Eastchester Creek. A sheen was observed on soil and water within the pump house structure.

- Brick was encountered at 5 feet bgs in TP-31. This brick wall or foundation did not appear to coincide with the location of any structures indicated on historic maps or aerial photos. A sheen was observed on soil and water in test pit TP-31.

- A 4-inch concrete and rebar pad was located just below the ground surface and two concrete walls were uncovered at three feet below grade in test pit TP-34. A sheen was observed on groundwater within the structure. These structures were associated with the liquid petroleum process building foundation.

Complete or partial underground structures were not encountered in the remaining test pits. Subsurface concrete slabs were encountered in several test pits and nearby soil borings.

- Concrete was encountered from 2.5 to 5 feet bgs in TP-5, located behind the southern end of the main shopping center building. The concrete observed at this location was associated with foundation of the former 287,000-gallon oil tank.

- A concrete slab associated with the foundation of a former tar or oil tank was encountered at approximately 4 feet bgs in TP-8, and at approximately 5 feet bgs in TP-11. This concrete was associated with the foundation of the former three million cubic foot gas holder.

- Concrete was encountered in soil borings located along the perimeter and center of the gas holder footprint (SB-5, SB-54, and SB-6). Test pits TP-20 and TP-21 were excavated to 10 to 12 feet bgs within the footprint of the three-million cubic foot gas holder. In both test pits, a concrete slab was encountered at approximately 5 feet bgs.

- A concrete slab at approximately 7 feet bgs was observed in test pits TP-12, TP-12B, TP-13 and TP-14, in an area associated with relief holder foundation. The slab was approximately six inches to one foot thick. A dried tar-like material was mottled in soils above the slab and present as a thin layer immediately above the slab.

- Numerous bricks observed throughout test pit TP-29 were believed to be associated with remnants of the former 100,000-gallon ammonia tank located in the southwestern portion of the Site. An intact foundation was not identified during excavation in this area. NAPL saturated soil was observed at the water table in TP-29.

2.0 CONTEMPLATED USE

The contemplated use of the Site is Commercial/Retail. Engineering and institutional controls will be implemented as part of the Site redevelopment process to ensure protection of human health and the environment during and after redevelopment, including restrictions to commercial/retail use. The proposed use of the Site will continue to be a retail/commercial business operation. The existing anchor building (formerly operated by Kmart) will undergo extensive renovation and all of the other existing buildings will be a component of the redevelopment plan currently being negotiated by Levin. Therefore, there will be limited grading and/or filling of the site other than what will be required for the installation of the site-wide capping system. The potential land use is presented in Figure 1.0.2 and there will be limited infrastructure modifications to the site parking/landscape areas. There is a potential for future reuse of the parking area between the Kmart building and Eastchester Creek for new building construction. All aspects of future redevelopment will be managed through an Environmental Easement and a Site Management Plan.

3.0 SUMMARY OF REMEDY

3.1 Pre-Remedy Site Investigation

Additional site investigation activities will be performed prior to the implementation of the RAWP. These activities include excavation of test pits in the eastern portion of the property in seven general areas as shown on Figure 3.1.1 to evaluate whether grossly contaminated soils are present in the shallow vadose zone. The test pits will be two to three feet wide and will generally extend to the depth of the water table, unless MGP piping/structures or grossly contaminated soils are encountered that may require the test pit advancement to a maximum depth of 20 feet. If grossly contaminated soils (or other MGP source materials) are encountered at depths below 20 feet bgs, remedial investigation efforts will continue as the NYSDEC and ENGINEER deem technically feasible under the circumstances. If grossly contaminated soils are encountered in the test pits, the extent of the grossly contaminated soils would be determined and excavated as described in Section 3.2.1.

In addition to test pits on the eastern portion of the property, additional test pits will be advanced on the western portions of the property to further delineate the extent of grossly contaminated soils. The additional test pits will be conducted within and between the approximate areas of soil excavation shown on Figure 3.1.1. The data obtained from the additional test pits will be used to better define the approximate soil excavation boundaries and estimated disposal volumes for the Remedial Design and preparation of the remedial contractor bid package.

3.2 Mitigation/Containment of Sources

3.2.1 Soil

The remedy is based on the removal of grossly contaminated soils or purifier waste. Figures 3.1.1 and 3.1.2 depict graphical representations of the approximate soil excavation areas which encompass locations where grossly contaminated soils were observed to be present. These include Areas 1 through 3 where grossly contaminated soils were observed, and the purifier waste disposal area (Area E). Area E is based on site investigation activities performed to date and the results of the April/May 2005 detailed pre-construction delineation sampling activities. Areas 1 through 3 are based on the Site Investigation data (i.e., visual observations during test pit and soil boring activities) and have been drawn to include the anticipated potential extent of grossly contaminated soils. As discussed in Section 3.1, additional test pitting activities will be performed in the eastern portion of the site and within and between Areas 1 through 3 in the western portion of the site to further define the extent of grossly contaminated soils. Figure 3.1.1 includes the approximate excavation areas (Areas 1 through 3 and Area E) as well as test pit, soil boring, monitoring well and recovery well locations from previous investigations. Figure 3.1.2 includes the approximate excavation areas and former MGP structures for reference. If grossly contaminated soils are observed in other areas of the Site during the post remediation activities related to Site redevelopment and utility maintenance/upgrades, this soil will be removed and handled in the same manner as other soil excavated for remedial purposes as described in Section 5.14.

Soils to be removed at the Pelham Plaza (approximately depicted on Figures 3.1.1 and 3.1.2) are grossly contaminated soils or soils containing purifier waste. Visual determinations will be made in the field by the NYSDEC and ENGINEER regarding NAPL saturation and the presence of purifier waste. The field decisions relative to depth will be based on observation of subsurface structures and piping and/or the observed migration of DNAPL; therefore, dewatering capabilities will be available to handle wet, grossly contaminated soils. The boundaries of the approximate excavation areas depicted in Figures 3.1.1 and 3.1.2 are estimated. The actual volume of source soil that will be removed as part of this remedy may increase or decrease based on field observations during remedial activities, pre-remedial site investigation activities including the additional test pits discussed in Section 3.1., and the presence of MGP process piping. Any such piping found to contain flowing coal tar will be traced to connection points or the property boundary, drained of coal tar, and removed. Any grossly contaminated soil surrounding the piping will also be removed for off-site disposal. Excavation in Areas 1 through 3 will continue vertically until the excavation bottom is observed to be free of grossly contaminated soils or former MGP piping/structures, or until a depth of 20 feet bgs has been reached. If grossly contaminated soils (or other MGP source materials) are encountered at depths below 20 feet bgs, remedial efforts will continue to excavate as much of the grossly contaminated/coal-tar saturated soil as the NYSDEC and ENGINEER deem technically feasible under the circumstances. Horizontal excavation in these areas will continue until the excavation sidewalls are observed to be free of grossly contaminated soils and former MGP piping/structures have been removed to the to the extent practicable within the property boundaries. Decisions regarding the horizontal and vertical extent of excavation will be made in the field by the NYSDEC and ENGINEER. Soil removed from the excavation areas that is neither grossly contaminated nor contains purifier waste will be segregated and re-used on-Site for backfill. Once the final excavation extent has been reached, documentation samples will be collected from the excavation sidewalls and bottom.

The soil removal activities will be performed in conformance with a Site-specific Health and Safety Plan (HASP) and New York State Department of Health (NYSDOH) requirements for a Community Air Monitoring Plan (CAMP). Proven soil conservation practices will be incorporated into the remedial design specifications to mitigate soil erosion, off-Site sediment migration, and water pollution from erosion. The remedial design specifications will also address the material to be brought onto the Site for use as backfill indicating its origin and qualification as “exempt fill” under 6 NYCRR Part 360 or from a soil borrow site that has been verified (through full TCL/TAL sampling) as having no analytes exceeding TAGM 4046 levels or local site background as determined by the procedure in NYSDEC Draft DER 10 ("Technical Guidance for Site Investigation and Remediation"). The import material will be clean and free of debris, cinders, combustibles, wood, roots, and petroleum staining/odors.

The table below summarizes each of the approximate soils excavation areas (Areas 1 through 3 and Area E) shown on Figures 3.1.1 and 3.1.2. As mentioned previously, these areas have been identified based on visual observation of grossly contaminated soils during the Site Investigation. Areas 1 through 3 have been drawn to include the anticipated potential extent of grossly contaminated soils, which will be further defined during the pre-remedial site investigation activities discussed in Section 3.1. Based on the existing data, the anticipated volume of grossly contaminated materials and overall volume of soils to be managed in each area (i.e., soils that will be excavated but do not require off-site disposal) are provided in the table. These volumes are subject to change based on the results of the pre-remedial site investigation activities and visual observations during the remedial action.

Soil Excavation Summary

Excavation Area	Overall Surface Area (Sq. Ft)	Estimated Total Volume of Soil to be Excavated (CY)	MGP Structures Present/ Locations Where Grossly Contaminated Materials were Observed	Estimated Minimum Volume of Grossly Contaminated or Purifier Wastes to be Shipped off site for Disposal (CY)
1	7,000	10,000	Brick Tar Tank, Brick Tar Separator Tank, TP-7, TP-24, SB-51, SB-72, MGP Generator Bldg., RW-1, TP-23	2,200
2	5,000	24,000	UST Tar Separator Tank, Drip Separator Tank, TP-2, TP-3, SB-26, SB-59, SB-61, SB-67, Boiler House, Scrubber, Condensers, Tar tanks, TP-33, TP-34, SB-29, MGP Tar Tanks	7,300
3	45,000	16,000	Brick Storage Area, TP-32, TP-31, SB-37X, RW-7, RW-8, TP-26, TP-29, SB-86, TP-31, SB-37X	15,000
E	5,000	1,600	TP-22	200
Total Est. Volume		51,600 CY		18,700 CY

Note: Soil volumes were estimated using site investigation results and construction safety requirements regarding excavation slope stability.

3.2.2 Hydraulic Barrier Wall

The installation of a hydraulic barrier wall is proposed along the alignment of Eastchester Creek to minimize the discharge of NAPLs to the creek. LNAPL and DNAPL have been detected in soil borings, test pits, and monitoring/extraction wells near the western boundary of the Site. Two new sections of the barrier wall would extend to the bedrock surface (which ranges in depth from approximately 20 to 70 feet bgs) and would link with the hanging sheetpile bulkhead recently constructed by Con Edison (Figure 3.2.1). This configuration would effectively create a hydraulic barrier extending to the bedrock surface along the entire reach of Eastchester Creek bordering the Site with the exception of the area surrounding the Con Edison gas main piping where the existing bulkhead does not extend to bedrock (Figure 3.2.2). The wall will include a return arm that extends approximately 190 feet inland east along the property boundary at the southern end of the Site. This portion of the wall will be installed 10 to 20 feet from the property boundary to minimize the potential for disturbance of adjacent off-Site structures. The southern return arm, in conjunction with the active hydraulic control system discussed in Section 3.2.3, will help facilitate full hydraulic control at the Site. Based on the results of groundwater modeling designed to simulate the affects of the hydraulic barrier and optimize the design of a hydraulic control well system for the Site, a return arm will not be required on the northern end of the Site to achieve full hydraulic control. The groundwater modeling indicated that hydraulic control at the northern property boundary near the barrier wall was better facilitated by extracting groundwater from existing RW-1 instead of a return arm of the wall extending into the Site.

The options for support and anchoring the barrier wall have been selected, designed and have undergone constructability review by potential remedial contractors. These options minimize the impact on the gas main and utilities that will remain along and parallel to Eastchester Creek and assure construction logistics prior to final installation of the anchoring/support system. The selected option includes the use of sealed interlocking sheet piling (driven to bedrock) supported by tie-backs extending into bedrock. A pre-design boring program has been performed to provide additional information about the depth to bedrock along the alignment of the barrier wall and the competency of the bedrock along the potential alignment of the tie-back anchoring system. The data obtained during this pre-design investigation also supported the design of the barrier wall for sheet length, embedment, and tieback design.

The permanent impact from installing the barrier wall along the alignment of Eastchester Creek would result in the loss of a linear tract of non-vegetated Eastchester Creek shoreline approximately 0.02 acres in size that is regulated as a Water of the United States by the United States Army Corps of Engineers and a tidal wetland by the NYSDEC. Therefore, a Pre-Construction Notification (Nationwide Permit 38) and a NYSDEC Permit Application (Navigable Waters, Tidal Wetlands, 401 Water Quality Certification) have been prepared and submitted to facilitate the construction of the barrier wall. The Army COE component of the permit has been received in June 2005 with continuing work on the NYSDEC portion of the permit. Additional details about the hydraulic barrier wall system are presented in Section 5.6.

3.2.3 Hydraulic Control

Based on groundwater modeling results, hydraulic control will be required to control the potential buildup of excess hydraulic head on the interior side of the barrier wall. Hydraulic control will be established through groundwater extraction from a combination of new and existing wells. The number and locations of the hydraulic control wells, as well as pumping rates required to accomplish the hydraulic control, was determined through groundwater modeling (see Model Summary in Appendix B). The calculations based on proposed hydraulic control and stormwater management indicate an estimated total pumping rate of 30 gallons per minute (gpm). These calculations indicate that hydraulic control could be established by installing two groundwater extraction wells (HCW-02D & HCW-02S) in a cluster near the middle of the southern hydraulic barrier inland arm (Figure 3.2.3), and utilizing existing NAPL recovery wells (RW-1 and RW-3) at the middle and northern end of the hydraulic barrier. The groundwater model was calibrated to mean groundwater levels measured on-Site between October 2000 and July

2001 to take into account seasonal high and low conditions as well as tidal fluctuations which ranged from three to four feet in the deeper sand hydrostratigraphic unit.

An aquifer pumping test has been performed at recovery well RW-3 as part of the pre-design work performed in concurrence with the preparation of the RAWP. Data obtained during the pumping test provided specific hydrogeologic information on the lower saturated zone beneath the peat layer in the western portion of the site (including transmissivity and hydraulic conductivity) for use in the Remedial Design. These data have been used to further calibrate the groundwater model allowing further refinement and evaluation of the number and locations of the hydraulic control wells and pumping rates required to accomplish the hydraulic control after the barrier wall is installed.

Extracted groundwater will be treated by an on-Site system utilizing a pre-filtration system and granular activated carbon (GAC) treatment to reduce contaminants. The water would then be discharged to Eastchester Creek through the storm water sewer under a State Pollutant Discharge Elimination System (SPDES) discharge permit

Based on the existing site characterization data, DNAPL is not anticipated to be encountered in the hydraulic control wells. Separate DNAPL recovery wells will be used to target DNAPL recovery in the areas where it has historically been encountered during characterization and recovered as part of IRM activities. There is a potential for the recovery of LNAPL in one of the shallow hydraulic control wells (HCW-02S), however. If LNAPL or DNAPL are recovered, they will be physically separated from the wastewater stream using a coalescing oil/water/DNAPL separator prior to GAC filtration and discharge. This engineering control will minimize the potential for introducing NAPL into the GAC, which would reduce the effective life of the media and increase the chances for contaminant breakthrough. Furthermore, the pump intakes will be set in the middle portion of the saturated screen intervals of the hydraulic control wells to further reduce the potential of extracting NAPL. The hydraulic control wells will be routinely gauged to determine whether NAPL is present. If a substantial LNAPL thickness develops in the hydraulic control wells, the use of a separate phase pump or skimmers will be evaluated. If DNAPL accumulates, the use of an alternate or replacement well will be evaluated.

The use of redundant GAC filtration units in series will further minimize the potential for contaminant breakthrough. The primary treatment will be accomplished by the first GAC unit which will significantly reduce the contaminant concentrations prior to treatment by the secondary GAC unit(s). The secondary treatment will serve to further polish the water to ensure discharge requirements are met. In order to prevent contaminant breakthrough past the secondary polishing unit, the performance of the GAC units will be routinely monitored to determine when the media needs to be regenerated (i.e., when analytical results from the effluent from the primary unit indicate evidence of contaminant breakthrough, GAC regeneration would be scheduled). The regeneration process generally includes replacement of the GAC media in the primary unit and reconfiguration of the process flow to use the former polishing unit as the primary treatment and the unit with the recently replaced media as the secondary polishing unit.

3.2.4 NAPL Recovery in Saturated Zone

The remedy will include the removal of both LNAPL and DNAPL from the saturated zone using existing wells (monitoring and recovery) and additional recovery wells to enhance the overall recovery rate. It is anticipated that any LNAPL would be recovered using the hydraulic control system, as discussed below. Based on the distribution of the DNAPL as determined during the Site characterization activities and the observations made during the current DNAPL recovery activities performed at the Site, separate DNAPL recovery systems will be installed and performance tested, as discussed in Section 3.2.4.2. The NAPL will be transferred to NAPL storage tanks located on the western portion of the Site (Figure 3.2.3). The storage tanks will be equipped with secondary containment and will be located outside of the heavy traffic areas. The NAPL will be transferred to the NAPL storage tanks via below grade piping. The NAPL storage area will be secured with a six foot high chain link perimeter fence. A security contingency plan for the NAPL storage area, which will be implemented if the fencing is ineffective, will also be prepared as part of the remedial design.

3.2.4.1 Shallow LNAPL Recovery Along Hydraulic Barrier

The need for shallow recovery wells for the removal of LNAPL from the water table along the proposed barrier wall has been evaluated as part of the pre-design modeling effort. The presence of LNAPL at the southern end of the proposed hydraulic barrier in MW-3 indicates that LNAPL control and recovery will most likely be necessary in the shallow hydraulic control well (HCW-02S) proposed in this area (Figure 3.2.3). An active LNAPL recovery system utilizing a dual-phase pump would be installed in the shallow hydraulic control well. LNAPL from the hydraulic control well will initially be pumped to a frac tank for temporary storage. The frac tank would either be double walled or installed in a walled containment area and lined with a liner capable of containing 110 percent of the volume of the tank, in case of a spill. The use of Frac tanks is a temporary measure to be conducted during the remedial construction and construction phase of the redevelopment. Once experience is gained with long term pumping, and NAPL recovery rates and volumes are better known, a permanent NAPL storage/management system will be designed and installed to avoid aesthetic issues related to new tenant concerns. A high level sensor would be installed in the tank which would automatically shut the system down before overflow conditions are encountered. The frac tank would be emptied as necessary by a licensed waste hauler and its contents treated at an approved facility.

3.2.4.2 DNAPL Recovery Systems

The installation of two DNAPL recovery systems is proposed to increase the recovery of DNAPL at the Site. The remedy would include the installation of four additional PVC recovery wells (RW-12 through RW-15) in two recovery areas. The DNAPL will be transferred from the recovery areas to a common tank located in the western portion of the Site (Figure 3.2.4). In Recovery Area A (DNAPL area in the central part of the Site), RW-12 (shallow recovery well) and RW-13 (deep recovery well) will be installed in between RW-10 and RW-11 (Figure 3.2.5). In Recovery Area B (DNAPL area in the southwestern portion of the Site), RW-14 will be installed between RW-6 and RW-7 and RW-15 will be installed between RW-6 and RW-9 (Figure 3.2.6). Components of the proposed DNAPL recovery system are shown schematically on Figure 3.2.7. The four existing recovery wells currently used for DNAPL removal would be maintained and operated (RW-6 and RW-9 in Recovery Area B and RW-10 and RW-11 in Recovery Area A).

DNAPL recovery rates using the vacuum truck approach were measured between 1 and 2 gpm. Recovery rates are expected to be similar with the proposed recovery system; however product recovery testing will be performed after hydraulic control has been established at the Site to determine the appropriate operating conditions. To manage the anticipated flow, pneumatic pumps will be used. Pneumatic pumps operate under a simple principle: the pump fills with fluid through a check valve at its lower end and is emptied of fluid using compressed air to push the fluid from the pump. Compressed air is introduced into the pump body, displacing the fluid and pushing it to the surface. This process is controlled by preset timers on the surface and can be triggered by a down well level sensor, such as a bubbler. Adjustment of the timers allows adjustment of the flow rate from the pump. The level sensor (bubbler) can be used to sense the level of fluid in the well and turn on the controls to the pump and thus maintain a specific fluid level in the well. The pneumatic pumps would be installed in the two foot long sump at the bottom of each well. An air compressor will be required to operate the pneumatic pumps and will be housed in a small building along Eastchester Creek with the tankage.

DNAPL from the recovery wells will be initially pumped into a ±20,000 gallon frac tank in the western portion of the Site to provide temporary storage for the recovered DNAPL prior to off-site shipment to a TSDF. The frac tank would either be double walled or installed in a walled containment area underlined by a liner capable of containing 110 percent of the volume of the tank, in case of a spill. As mentioned above, the use of Frac tanks is a temporary measure to be conducted during the remedial construction and construction phase of the redevelopment. Once experience is gained with long term pumping, and NAPL recovery rates and volumes are better known, a permanent NAPL storage/management system will be designed and installed a high level sensor would be installed in the tank which would shut the system down before overflow conditions are encountered. The frac tank would be emptied as necessary by a licensed waste hauler and the contents treated at an approved off-site facility.

3.2.5 Site Cap

A Site-wide cap will be installed and its design will be consistent with the actual redevelopment construction plan layout. It would consist of 5 to 6" of asphalt in parking areas and roadways, conventional concrete slabs under building structures or pavement/walkways, and 2 feet of acceptable fill/top soil (i.e., soil containing contaminant concentrations less than the recommended soil cleanup objectives provided in NYSDEC TAGM 4046) or local site background as determined by the procedure in DER 10 ("Technical Guidance for Site Investigation and Remediation") in landscaped areas located throughout the redeveloped property. The cap will include the floor slabs and foundations of buildings remaining after redevelopment and associated parking areas. Where applicable, an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The purpose of the cap is to minimize the infiltration of precipitation, control runoff and minimize the potential exposure pathways for incidental soil ingestion, soil and water dermal contact, and particulate inhalation.

3.2.6 Vapor Mitigation/Control

A sub-slab depressurization/venting system will be installed for the portion of the existing commercial building formerly occupied by K-Mart as part of the redevelopment of this commercial space to eliminate a potential pathway of volatilization (as well as the Mandee's Building that is part of the IRM). The sub-slab system will be installed and operated under discharge permits issued by the Westchester County Department of Health. The sub-slab depressurization system is an active ventilating process to create a negative pressure field directly under the building and on the outside of the foundation in relation to the building's ambient pressure. Potential migration of volatile compounds will be intercepted by the negative pressure field and piped to an ambient air discharge point. The physical components of the depressurization system will include a series of vapor collection pipes, porous media (stone), trenches, geo-fabric, and a vacuum pump system (Figure 3.2.8). After installation, differential pressure monitoring will be performed and indoor air samples will be collected to test the effectiveness of the vapor control measures. If required, contingencies such as the consideration of modifications to the heating and ventilation system may be explored to produce excess makeup air supply which will create a positive pressure in the building air space.

Soil gas and indoor air quality for the contiguous remaining occupied portions of the main commercial building (e.g., the strip mall between the former Kmart and the A. J. Wright building as well as the sub-leased portions of the Kmart Building) have been evaluated as part of a pre-design study being performed in concurrence with the RAWP development. VOCs that could potentially be related to MGP sources as well as petroleum sources, including BTEX, indane, indene, and naphthalene, were present at variable concentrations in soil gas beneath four of the 12 stores (GNC, Marathon Jewelry, former Fabco Shoes, and Modell's), however, conclusive soil vapor intrusion pathways could not be determined based on the sampling data. It is recommended that an additional round of indoor air assessment be conducted for all 12 stores during the 2005-06 heating season to assess seasonal variations and further evaluate the potential for subsurface vapor intrusion in the buildings.

Based on the results of the soil vapor intrusion assessments conducted in the remaining three on-Site buildings: OTB, CitiBank, and A. J. Wright, no mitigation measures are required for these buildings at this time under the present conditions at the Site.

Based on the initial evaluation results and the results of the September 2004 additional soil gas and indoor air sampling conducted in and around the Mandee's Building, a potential volatile organic migration pathway was noted for the Mandee's

Building. In order to mitigate the potential subsurface vapor intrusion into the Mandee's building, as part of the NYSDEC-approved IRM Work Plan, an active sub-slab depressurization ventilation system will be installed in the building that will control the potential migration of VOCs into the Mandee's building. In addition, purifier wastes and/or grossly contaminated soils that were found adjacent to the building (Area E on Figure 1.5.13 of the RAWP) will be excavated. Performance monitoring of the sub-slab system will be completed following installation of the system and additional indoor air and soil gas samples will be collected during the next heating season (i.e., when the HVAC system is fully operational) to evaluate the effects of the system's performance and determine if additional measures or system modifications are required.

3.2.7 Remedial Action Documentation

The following minimum documentation and reporting requirements will be followed by the Volunteer during the remedy implementation, as appropriate:

- Daily field reports will be prepared to summarize work performed each day.
- Photographic logs will be kept documenting the remedial actions.
- Air monitoring data will be collected to document the results of the Community Air Monitoring Program.
- The limits of the remedial actions will be surveyed so "As Built" drawings can be prepared to show the extent of the soil excavations and documentation sample locations, locations of recovery wells and appurtenances, and the plan view and cross section(s) of the hydraulic barrier wall.
- Initial performance data for the hydraulic control and NAPL recovery systems will be documented.
- Documentation will be maintained for the disposition of materials disposed of off-site including copies of Bills of Lading, waste manifests, and destruction certificates, as appropriate.

- Documentation will be maintained for fill materials brought on site.
- Documentation of dewatering and erosion control measures will be maintained.

3.3 Institutional Controls

The following institutional controls are proposed to limit the potential exposure to the public from residual contaminants. An agreement by the Volunteer to establish and maintain the controls will be developed and contained in an Environmental Easement that the Volunteer will grant to the State of New York in accordance with Article 71, title 36 of the New York Environmental Conservation Law. The Environmental Easement will be subject to the Department's review and approval, will be binding upon the Volunteer and all future owners of the Site, and will be enforceable by the Department. After the Environmental Easement has been approved by the Department and executed by the Volunteer and the Department, the Volunteer with file it with the Westchester County Clerk's Office for recording. Certification that the controls are being maintained will be conducted on an annual basis as part of the Site Management Plan (SMP) and/or the O&MM plan.

3.3.1 Restrictive Use - Tenants

The Environmental Easement will allow for only commercial or industrial uses and tenants, and will prohibit use of the Site for residential, day care, child education, or medical care purposes without the express written approval and consent of the NYSDEC. The Site is classified as B-2, according to the Village of Pelham Manor's zoning code, which also limits uses to commercial and light industry.

3.3.2 Restrictive Use – Groundwater

The Environmental Easement will prohibit the use of the site's groundwater for potable and non-potable purposes to eliminate the groundwater ingestion/inhalation pathway. This prohibition is aligned with the Westchester County code (Article VII.

Section 873.707.3.) which prohibits installation of potable water wells in areas where municipal water supply is available. Furthermore, the saturated unconsolidated deposits underlying the Site are not conducive for potable water supply use because of the limited saturated thickness of the unconfined unit and the potential for salt/brackish water intrusion to the deep unit from Eastchester Creek, which is tidal.

3.3.3 Restrictive Use - Future Construction, Maintenance, or Remediation Activities

The Site Management Plan (SMP) will be prepared and include provisions to control any future development, remediation, or maintenance activities requiring subsurface excavation of soil or extraction of groundwater. The plan will assure compliance with NYSDEC/NYSDOH-approved Site-specific health and safety, community air monitoring, and operating monitoring and maintenance plans. For new redevelopment of the Site, Levin or the then owner of the Site (hereinafter in this Section 3.3, "Site owner") will notify the Department prior to proceeding with any such plans. Also, a copy of the Environmental Easement will be filed by the NYSDEC with the Village of Pelham Manor.

The Environmental Easement will require that the Site owner (and the

Site owner's tenants) to comply with the approved SMP, limit the use and development of the property to commercial or industrial uses only, restrict the use of groundwater as a source of potable or process water, and require the Site owner to complete and submit an annual certification to the Department that these controls are being complied with and remain effective to protect human health and the environment. The Environmental Easement will be applicable to the entire Site and include a map showing the area of controls, a description of the controls, and will contain an express agreement by the Volunteer Levin, as required by the NYSDEC in approving the form of the Environmental Easement, to comply with the terms of the Environmental Easement and to make all transfers of any real property interest in the Site subject to the Environmental Easement so that future owners of the Site are also bound by and required to comply with the Environmental Easement. The environmental easement will be in a recordable form pursuant to Real Property Law Section 291. The SMP will be referred to and complied with during future Site development activity if the excavation of soil/fill becomes necessary during the construction of footings, utilities, and other related activities or in any actions that will affect the cover system. The Department shall be notified prior to the initiation of such work unless the work constitutes routine operation and maintenance activities (e.g. tree planting, installation of light poles, etc.). Residual contaminated soils may be excavated from the site during such future redevelopment activities. If this occurs, characterization of soil will be performed and, where applicable, disposal/reuse will be done in accordance with applicable Federal, State, and local statutes, regulations, and relevant requirements. Further, evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified will be performed. Finally, future redevelopment will be conducted such that all use restrictions (development and groundwater) detailed in the Environmental Easement and this RAWP are maintained unless the owner first obtains permission to discontinue such controls from the NYSDEC and/or other relevant agency.

The post-remediation SMP will specify that soil excavated for new foundations, utility trenches, and grading will be characterized for contamination, segregated, and either reused on-site or disposed off-site depending on the presence NAPL or coal tar. The SMP will also address the appropriate procedures for performing intrusive work including construction of the approved engineering controls (caps and vapor mitigation facilities). The post-remediation health and safety general guidelines will require that construction workers involved with disturbance of the subsurface to have appropriate Occupational Safety and Health Administration (OSHA) training and medical monitoring as required in 29 CFR 1910.120 (Hazardous Waste Operation and Emergency Response). These guidelines will also specify appropriate worker and community air monitoring required during Site development. The post-remediation SMP will also incorporate a required Stormwater Pollution Prevention Plan (SWPPP) in conformance with the NYSDEC General Permit for Stormwater Discharges from Construction Activities.

3.4 Monitoring and Maintenance

Details regarding the components of the Operation, Monitoring, and Maintenance (OM&M) Plan will be finalized during the remedial design phase of the RAWP. The OM&M Plan will include the general components outlined in Sections 3.4.1 through 3.4.4.

3.4.1 Hydraulic Barrier and Hydraulic Control System

Once installed, the proposed hydraulic barrier and control systems would require maintenance and monitoring. The Volunteer will be responsible for maintenance of the proposed system, including monitoring of system operation, groundwater discharge, and filtration system monitoring and replacement. An OM&M Plan will be drafted for approval by the NYSDEC and will address the remedial system after completion of the design phase and prior to system installation. The OM&M Plan would describe procedures for operating and maintaining the physical components of the hydraulic control system. The main features of the OM&M Plan will include the following:

- System inspection procedures.
- Groundwater Monitoring.
- Carbon filtration system evaluation and filter replacement procedures.
- Sampling procedures and analytical requirements for discharge monitoring.
- Inspection Reporting.

The OM&M Plan would be updated to reflect as-built conditions after completion of construction activities, and would be reviewed annually and updated as needed based on Site conditions.

3.4.2 NAPL Recovery

The proposed NAPL recovery systems would require maintenance and monitoring once installed. The Volunteer will be responsible for maintenance of the proposed system, including monitoring of system operation, NAPL storage and disposal, and recovery system monitoring and replacement. An OM&M Plan will be drafted for the system after completion of the design phase and prior to system installation. The OM&M Plan would describe procedures for operating and maintaining the physical components of the NAPL recovery system. The main features of the OM&M Plan will include the following:

- System inspection procedures.
- Groundwater and NAPL monitoring.
- Recovery system evaluation and maintenance.
- NAPL disposal.
- Sampling procedures and analytical requirements for monitoring.
- Inspection Reporting.

The OM&M Plan would be updated to reflect as-built conditions after completion of construction activities, and would be reviewed annually and updated as needed based on Site conditions.

3.4.3 Site Cap

Activities that disturb the Site cap will be governed by the management procedures established in the post-remediation SMP. The OM&M Plan would describe procedures for maintaining and inspecting the Site cap. Beyond construction and disturbance, general monitoring and maintenance of the Site cap will be performed as follows:

Concrete Slabs. Exposed concrete slabs will be inspected as outlined in the OM&M work plan. Repairs will be made as directed by the ENGINEER. If the vapor mitigation system is impacted during concrete repair, it will be repaired to the original design specification. The ENGINEER will inspect and approve these repairs prior to installation of new concrete, as necessary.

Asphalt Parking Lot and Driveways. The asphalt surfaces will be inspected as outlined in the OM&M plan. Repairs will be made as directed by the ENGINEER and will meet the requirements established in the SMP. The ENGINEER will inspect and approve these repairs prior to installation of new asphalt.

Soil Cap. The soil cap, located in the landscaped areas of the Site, will be inspected as outlined in the OM&M plan. Repairs will be made as directed by the ENGINEER. Erosion rills will be filled with topsoil to meet existing grades, and seeded. If necessary, additional topsoil may be installed in areas adjacent of the rill to raise the grade and prevent drainage from concentrating into that area. Settlement areas will be filled with topsoil to meet existing grades, and seeded. Erosion control matting may be installed on all seeded areas.

The OM&M Plan would be updated annually based on Site conditions.

3.4.4 Vapor Mitigation/Control

The OM&M Plan would describe procedures for operating and maintaining the vapor mitigation/control system. It is anticipated that monitoring and maintenance of the vapor mitigation/control system will include the use of differential pressure measurements to evaluate vacuum pressure on the blower system. Pressure gauges will be installed as a permanent component of the blower system and would be checked on a frequency designated in the OM&M Plan to verify adequate vacuum pressure. If the vacuum pressure exceeds the system parameters, a qualified service technician will diagnose and repair the system. Routine maintenance of the blower motor(s) will be performed in accordance with the manufacturer recommendations. Annual certification and OM&M data regarding the vapor mitigation control system will be reviewed by the NYSDOH. Based on the data presented, the NYSDOH may request that additional sampling and monitoring be performed.

The OM&M Plan would be updated to reflect as-built conditions after completion of construction activities, and would be reviewed annually and updated as needed based on Site conditions.

4.0 ENGINEERING EVALUATION OF REMEDY

4.1 Engineering Evaluation of Remedy

Previous investigations have identified areas of the Site which may pose a risk to human health and the environment. Distinct continuing source areas (i.e., NAPL) have been delineated and exposure pathways associated with the contemplated use of the Site have been identified. This section presents an evaluation of the remedial alternatives detailed in Section 3 of this document. The key components of the selected remedy were evaluated using the following six criteria:

- Protection of human health and the environment.
- Compliance with standards, criteria, and guidance.
- Short-term effectiveness.
- Long-term effectiveness.
- Reduction of toxicity, mobility, or volume.
- Implementability.

A more detailed description of each of the six criteria is provided below.

4.2 Protection of Human Health and the Environment

This criterion relates to whether the alternative provides adequate protection of human health and the environment and describes how risks posed by each potential exposure pathway are eliminated or reduced. This criterion evaluates the long-term benefits to public health and the environment in contrast to any short-term or long-term risks posed by the implementation of the alternative.

The proposed remedial actions for the Site will be protective of public health and the environment. As concluded from the previous site investigations, significantly contaminated soils were found throughout the site, particularly in the western portion. The selected remedy consists of excavation of an estimated 51,600 cubic yards of soil, 18,700 cubic yards of which is estimated to be grossly contaminated and will be disposed of off-Site based on existing data. It is anticipated that the remaining volume of the excavated soil will be re-used on-Site for fill during remedial construction activities. Excavation and off-site disposal volumes are subject to change based on the results of pre-remedial site investigation activities and visual observations during the remedial action.

In addition to soil excavation, a Site-wide cap will be installed. The cap will include asphalt in the parking areas, conventional concrete slabs under building structures, and two feet of clean topsoil/fill in the landscaped areas. Removal of grossly contaminated soil or purifier waste and subsequent capping of the Site will provide public health protection from inhalation, ingestion and dermal contact routes of exposure.

Source removal of both LNAPL and DNAPL from the saturated zone using the proposed recovery systems will protect the groundwater and soil (e.g., smear zones) from being further contaminated. Also, by implementing the hydraulic control system, including the barrier wall along Eastchester Creek, sensitive environmental receptors will be protected from further contamination. Effective institutional controls such as restrictive use of land and groundwater will further eliminate the public health exposure.

The Volunteer is also committed to minimizing exposure of Site contaminants and physical hazards to the general public during the active implementation stages of the remedy. Therefore, access to portions of the Site undergoing active remediation will be limited during and after business hours during the implementation of the remedy. This will include limiting access to the entire western side of the Site and other portions of the Site, as necessary, through the use of construction fencing and security personnel.

4.3 Compliance with Standards, Criteria, and Guidance

The proposed remedial actions were developed in compliance with the following standards, criteria and guidance.

- NYSDEC Division of Environmental Remediation Voluntary Cleanup Program Guide (May 2002)

- NYSDEC DER-10 Draft Technical Guidance for Site Investigation and Remediation (December 2002)
- NYSDOH Generic Community Air Monitoring Plan (Appendix C)
- NYSDEC TAGM 4061 Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants (Appendix D)
- NYSDEC TAGM 4031 Fugitive Dust Suppression and Particulate Monitoring (Appendix E)

4.4 Short-Term Effectiveness

This criterion assesses the short term effectiveness of the proposed remedy. It also analyzes the potential short-term adverse impacts upon the community nearby, construction workers, tenant employee, customers and the environment during the construction and/or implementation, and the effectiveness and reliability of protective measures. The length of time needed to achieve the remedial objectives is also estimated under this criterion.

The initiation of the proposed Site remedy will remove a significant portion of grossly contaminated soils or purifier waste. Although these activities will be performed in a controlled manner, potential adverse impacts will likely be greater with disturbance of the grossly contaminated soils, where the soil can become airborne as fugitive dust or can become suspended in run-off and be transported to Eastchester Creek. VOCs can also potentially impact human health adversely during the excavation activities. This risk for the personnel in the immediate vicinity of the work area will be reduced with proper personal protective equipment (PPE), air monitoring and Site controls. Personal health and safety air monitoring in accordance with the Site Health and Safety Plan will provide protection for the construction workers, and perimeter air monitoring in accordance with the CAMP will provide protection for the community nearby and the environment. If respirable dust levels exceed the air standards specified in the Site Heath and Safety Plan or the CAMP at any time during remedial activities, dust suppression measures such as spraying soils with water will be implemented as necessary. The contractor will be restricted from operating in very high winds. If significant nuisance odors are generated during excavation activities, active odor suppressing measures (such as the use of foam, odor suppressants and/or misting) will be implemented as a control/mitigation measure.

Noise generated from heavy equipment and with the increasing truck traffic can also pose a short-term adverse impact to the community nearby. In order to minimize the duration of noise exposure, heavy equipment operation will generally be limited to between the hours of 7 AM and 7 PM.

4.5 Long-Term Effectiveness

This criterion evaluates the long-term effectiveness of the proposed remedy after implementation. The magnitude of risk remaining from residual impacted soils and groundwater or treatment residuals is considered under this evaluation.

The proposed remedy reduces the long-term risks by removal of grossly contaminated soils (mass of the contaminants) in the vadose zone and the removal of NAPL in the saturated zone. The further reduction in long term risk is accomplished through the implementation of engineering and institutional controls.

The engineering controls such as a hydraulic barrier wall, a Site-wide cap, a vapor barrier for new buildings and active vapor mitigation in the form of a sub-slab depressurization system, and vapor intrusion recovery system provide a passive control methodology for the contamination migration pathways of concern. In addition to eliminating public health exposure and contamination migration pathways, the proposed source material removal permanently reduces the mass of material acting as a source of groundwater contamination and contamination of Eastchester Creek. Infiltration of rainwater or surface runoff is further minimized by the redevelopment of the Site and the installation of a Site-wide cap. The institutional controls such as restrictive use of land and buildings will provide administrative notice and monitoring of activities that have potential to disrupt the engineering controls. Site conditions will be evaluated on an annual basis in accordance with the OM&M plan.

4.6 Reduction of Toxicity, Mobility, or Volume

The proposed remedy has been assessed as to the amount of hazardous contaminants destroyed or treated and the degree of expected reduction in toxicity, mobility, or volume of waste under this criterion.

Excavation and removal of grossly contaminated soils or purifier waste and removal of LNAPL and DNAPL from the saturated zone through recovery wells will significantly reduce the total volume of contaminant mass and contaminated media at the Site. Reduction in toxicity will also be achieved for the soil through removal of the source material. Mobility of subsurface contamination will be controlled by the installation of a hydraulic barrier wall which will minimize the discharge of dissolved phase contaminants, as well as LNAPL and DNAPL to the Eastchester Creek. The hydraulic control system will reduce the volume of dissolved phase constituents by extracting impacted groundwater (and potentially LNAPL) for subsequent treatment and discharge. NAPL recovery wells along the barrier wall will further control the contaminant mobility. Potential pathways of volatilization will be impeded through the placement of a Site-wide cap of asphalt in the parking area, concrete under the building structures and approved fill in landscaped area, and also through a vapor barrier and sub-slab depressurization venting system for the new buildings.

4.7 Implementability

This criterion assesses the technical and administrative feasibility of implementing the proposed remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. Additional investigation activities including test pitting will be conducted prior to completion of the remedial design. The information obtained from this additional investigation work will be used to further delineate the extent of grossly contaminated soils to better evaluate the implementability of the remedial actions, to better define the approximate soil excavation boundaries and estimated disposal volumes for the Remedial Design and to support preparation of the remedial contractor bid package.

The proposed remedy is feasible on a short and long term basis. Excavation and off-site disposal utilizes conventional means and equipment which are readily available. Adequate working room exists on the western side of the Site to perform the excavation activities and install the barrier wall. The limiting factor in commencing soil excavation and removal will be weather, off-site disposal facility availability, availability of transport vehicles and the time required to haul material to the disposal facility.

The proposed remedy has been selected as an effective and cost-effective means of Site contamination reduction. Excavations will target areas of known grossly contaminated materials and may extend to depths up to 20 feet bgs, as field conditions warrant based on observations of grossly contaminated materials and the presence of subsurface structures and piping. In addition, installation of recovery wells is proposed to recover DNAPL and LNAPL from the saturated zone, which will substantially reduce contaminant mass below the water table in a cost-effective manner. Building foundations and other subsurface structures that are discovered to be porous and contain source materials will be removed and disposed of off-site; however, subsurface structures that are non-porous and are not grossly contaminated will be left in place.

The installation of a hydraulic barrier wall is technically feasible; care will be taken to hydraulically control the potential buildup of hydraulic head on the interior side of the wall and resulting changes in groundwater flow patterns. Additionally, care will be taken to protect the active Con Edison gas main while installing the hydraulic barrier wall.

5.0 REMEDY IMPLEMENTATION

5.1 Remedy Implementation

The proposed Site remedy involves implementation of source mitigation remedies as well as engineering and institutional controls. Implementation of the source mitigation activities will include excavation of grossly contaminated soils and purifier waste, backfilling the excavations with appropriate backfill, and installation of NAPL recovery systems. Implementation of the engineering controls will include installation of the hydraulic barrier wall, hydraulic control system, Site cap and vapor control system(s). Implementation of the institutional controls will consist of executing and maintaining environmental easements and related activities.

The implementation of the proposed Site remedies is described in the following sections and will be detailed further in subsequent remedial design documents.

5.2 Security and Access

Presently, the 20-acre Pelham Plaza is located in a partially fenced parcel and monitored by a site security force. Vehicle access to the Site is provided via three existing curb cuts along Pelham Parkway and Boston Post Road on the northeast and southeast portions of the Site, respectively. The Site presently contains a partially occupied retail structure of masonry type construction, three separate occupied retail structures, and a Con Edison electrical substation.

5.2.1 Construction Security

Prior to mobilization of remedial construction equipment and materials, access will be restricted to one existing curb cut entrance along Pelham Parkway by installation of a 6-foot chain link fence, effectively isolating the entire construction area boundary, as shown on Figure 5.2.1. This fencing will also be used to establish the Clean Material Storage Area and Contaminated Material Storage Area. Two new locking double swing gates will also be installed at the existing curb cut, as shown on Figure 5.2.1. The gates will remain unlocked during the work hours described in Section 5.2.2, and will be locked otherwise. The fence and gates around the remedial construction areas will be inspected by Plaza security agency personnel on a regular basis and maintained throughout the construction activities by the Contractor. If damage is observed, repairs will be made to the fence and gates prior to the end of the work day by the Contractor. Temporary security measures, including temporary lighting, may be installed as necessary during the construction work. Security watchmen will be provided for additional security to prevent unauthorized entry and to reduce the potential for exposure to environmental contamination by the public. In order to prevent unauthorized personnel from entering the remedial construction areas, a guard booth will be set up at the south Pelham Parkway entrance, which will be designated as the main entrance for remedial construction.

5.2.2 Remedial Construction Access

Access will be restricted to the Volunteer, the NYSDEC, the Contractor, his Subcontractors, and Malcolm Pirnie personnel, or their representatives. The guard booth will be occupied by the Contractor's personnel during work hours only, unless additional security needs are identified during the remediation activities. Work hours are expected to be 7:00 AM to 7:00 PM from Monday through Friday. The swing gates will be locked during non-working hours. With the exception of truck traffic, all vehicles and persons entering the remedial construction will be required to stop at the guard booth and provide the following information:

- Name,
- Company affiliation, if appropriate,
- License plate,
- Time entering/leaving Site, and
- Reason for visit.

Once on Site, the Contractor's personnel will direct all parties to report to the Engineer's trailer.

5.3 Mobilization and Traffic Control Plan

5.3.1 Mobilization

Mobilization of equipment for soil excavation and removal will take place upon installation of the security fence and gates, described in Section 5.2.1.

The majority of the work will involve soil excavation and removal, installation of NAPL recovery systems and construction of a hydraulic barrier wall and hydraulic control system adjacent to Eastchester Creek. It is expected that the Contractor will utilize the following types of equipment for these activities:

- Crane,
- Excavator,
- Bulldozer,
- Front End Loader,
- Dump Truck,
- Vibratory Roller (10-tons minimum),
- Drill Rigs,
- Dewatering Equipment,
- Storage Trailers,
- Field Office Trailers,
- Miscellaneous Hand Tools.

Material management areas (i.e. staging, processing, stockpiling) will be designated on-site. As equipment and materials are mobilized, they will be stored in the Clean Zone, described in Section 5.4.

5.3.2 Traffic Control Plan

Currently, three entrances to the 20-acre Site exist. Two are on Pelham Parkway, and one is on Boston Post Road. All construction traffic will enter the remedial area along the western Pelham Parkway entrance. The other entrances will be restricted to retail traffic only. This restriction will be enforced by the construction site fencing. New access gates will be installed at the western Pelham Plaza entrance. The Contractor will provide flagmen to control construction traffic entering and leaving the Site, as necessary. Once off Site, commercial traffic is not permitted on the Hutchinson River Parkway, but is permitted on the nearby New England Thruway (I-95).

5.4 Site Preparation

Prior to commencement of remediation activities, the following preparation activities will occur:

- Survey to establish vertical and horizontal control benchmarks, verify locations of all surface and subsurface utilities, property boundaries, and work boundary areas,
- Implementation of the storm water management and sediment and erosion control measures, as described in Section 5.4.1,
- The Security fencing and gates, described in Section 5.2.1, will be installed.

Construction facilities and exclusion zones will be established on-Site to support the remedy implementation. The facilities and exclusion zones will include the following: Field office space must be provided to the Department and their designees (office space adjacent to the AJ Wright building). The Department requires a desk with a telephone, a fax machine and photocopier.

Facilities:

- Field Offices[1] (Engineer's and Contractors),
- Storage Trailer,
- Portable Toilet(s),
- Guard Booth,
- Fuel Storage Area.

[1] During the construction activities, the NYSDEC will be provided with a desk and given access to a telephone and a fax machine and photocopier within one of the on-Site field offices.

Exclusion Zones:

- Clean Material Staging Area (Clean Zone),
- Contaminated Material Staging Area (Contaminated Zone),
- Decontamination Area.

Locations of the facilities and exclusion zones will be coordinated with the ENGINEER prior to installation, and will be delineated using fencing. Proposed locations are shown on Figure 5.2.1. The locations of these facilities and zones may change through each phase of the project.

5.4.1 Storm Water Management and Erosion and Sediment Control

During the remediation work, the contractors will implement best management practices designed to prevent any direct discharge from entering Eastchester Creek. The work practices for soil erosion and sediment control measures will generally consist of the following methods, which will be further detailed in the Remedial Design and the Construction Management Plan as required by the Storm Water Pollution and Prevention Plan (SWPPP)

- Hay bales and silt fencing placed around drainage structures and storm drain inlets. Hay bales will be installed around the perimeter of all storm drains and replaced as necessary. The silt fence will be cleaned out periodically, before any bulges develop in the fence.
- Drainage swales or berms would be constructed upgradient of soil staging areas to control stormwater run-on.
- Stockpiled soils, debris, and asphalt (clean or contaminated) will be completely covered using 10 mil polyethylene sheets and secured with sandbags or equivalent.

Stockpiles will not be placed in low-lying areas and storm water will be diverted away from soil stockpiles using hay bales or similar methods. A SWPPP will be prepared, as described in Section 5.11.

5.4.2 Field Offices (Engineers and Contractors)

Two mobile office trailers will be provided for the Contractor and Engineer's Field Office. These offices will be furnished, and will have electricity and telephone service. A portable toilet will also be located adjacent to the field offices, in the Clean Zone. Additional portable toilets may also be located in the Contaminated Zone.

5.4.3 Storage Trailer

To secure small equipment, hand tools, and small materials, the Contractor will mobilize a steel storage trailer, to be located adjacent to the Contractor's field office. The storage trailer will be unlocked during working hours and locked at all other times.

5.4.4 Clean Material Storage Area (Clean Zone)

The Clean Zone will be established in areas of the Site which do not contain exposed contaminated soil, and which allow traffic access. All material and equipment mobilized to the Site will initially be stored in the Clean Zone. All material and equipment which passes through the decontamination area will be stored in the Clean Zone.

A 500-gallon skid-mounted aboveground storage tank (AST) with secondary containment (i.e. a portable basin or lined bermed area) will be utilized for fuel storage. This AST will be placed in the Clean Zone, adjacent to the contaminated zone, so that equipment in the contaminated material storage area does not have to be decontaminated in order to refuel. Fuel delivery trucks and personnel will be able to refill this portable tank without entering the Contaminated Zone. When possible, fuel delivery trucks will fuel the equipment directly. In order to prevent the spread of contaminated materials while minimizing the disruption to operations, both methods of refueling may be utilized. Spill and leak cleanup materials and equipment will be kept on the Site and available at all times.

5.4.5 Decontamination Area

Each Contaminated Zone will require a separate decontamination area, as shown on Figure 5.2.1. Each decontamination area will include a decontamination pad, fresh water supply, and decontamination rinse water storage area. The decontamination pads will be constructed of plywood, 10 mil polyethylene sheeting, and railroad ties or similar materials. A sufficient amount of spare sheeting, plywood, and ties will be available to facilitate repairs to the decontamination pads as needed throughout the work. When utilized, the decontamination pad will be inspected at a minimum frequency of once per day. If any holes or other defects are observed, the damaged decontamination area will not be used until repaired and inspected by the ENGINEER.

The decontamination pads will be constructed to dimensions as necessary to facilitate decontamination of the largest piece of equipment used during construction. The pad will be constructed such that decontamination water will be collected in one corner of the pad. Accumulated rinse water will be pumped into holding tanks or NYSDOT approved 55-gallon drums, sealed, and placed in the storage area.

Shelters will be located adjacent to the decontamination areas. The shelters will serve as a personnel decontamination area, as well as a storage area for health and safety supplies. A portable eye-wash station will also be mounted within the shelters

5.4.6 Contaminated Material Storage Area (Contaminated Zone)

Site remediation includes removal of grossly contaminated soils and purifier waste. Contaminated soil removal limits (identified on Figure 5.2.1) were approximately delineated based on Site Investigation data and the anticipated extent of grossly contaminated soils. These limits will be further defined prior to implementation of this RAWP based on the results of the pre-remedial site investigation results and may further change based on visual observations during the remedial action.

Three areas (Areas 1, 2 and 3), are located in the western portion of the Site between Eastchester Creek and the existing retail structure. A fourth area (Area E) is located in the eastern portion of the Site, south of the existing Con Ed substation (to be managed during the implementation of the IRM). Since Areas 1, 2, and 3 are separate from Area E, two separate Contaminated Zones will be established to sequence work in a practical manner.

The Contaminated Zones will be used to perform excavation, stockpiling, and loading of all contaminated materials, including soils, to be hauled off-site to the treatment facility. All excavated soil material will be stockpiled on 10 mil thick polyethylene sheets. The stockpiles will remain covered until the soils are disposed off-site. If material is required to be stockpiled overnight, the stockpile will be covered with a minimum 10 mil polyethylene sheet and secured with sandbags, be bermed, and temporary erosion control measures established around the stockpiles. Stormwater will be diverted away from soil stockpiles using hay bales or similar methods. Any large areas of disturbances or deep pits created by the work may be temporarily backfilled with on-site material to reduce the potential for rutting and other related construction problems. Final cover and grading shall be performed in accordance with the approved RAWP.

During soil excavation, equipment will primarily be stored within the Contaminated Zone where work is being executed, and will remain in the Contaminated Zone until the excavation is complete to alleviate the need for daily decontamination.

5.5 Soil Excavation

Approximate limits of soil excavation are shown on Figure 5.2.1. Excavation will occur in one excavation area initially and may expand to excavation in multiple areas based on field experience and acceptable to the NYSDEC and/or ENGINEER.

5.5.1 Removal Limits

As shown on Figure 3.1.1, four approximate areas of soil excavation have been identified. Three areas (Areas 1 through 3) contain grossly contaminated soils, and one area (Area E) contains purifier waste.

Soils to be removed at the Pelham Plaza (Figures 3.1.1 and 3.1.2) are grossly contaminated soils, or contain purifier waste. Visual determinations will be made in the field regarding grossly contaminated soils and the presence of purifier waste. Field decisions relative to excavation depth will be based on observation of MGP subsurface structures and piping and/or the observed migration of DNAPL. Dewatering capabilities will be available to handle wet, grossly contaminated soils. Excavation in Areas 1 through 3 will continue vertically until the excavation bottom is observed to be free of grossly contaminated soils or former MGP piping/structures, or until a depth of 20 feet bgs has been reached. If grossly contaminated soils (or other MGP source materials) are encountered at depths below 20 feet bgs, remedial efforts will continue to excavate as much of the grossly contaminated/coal-tar saturated soil as the NYSDEC and ENGINEER deem- technically feasible under the circumstances. Horizontal excavation in these areas will continue until the excavation sidewalls are observed to be free of grossly contaminated soils and former MGP piping/structures have been removed to the to the extent practicable within the property boundaries. Decisions regarding the horizontal and vertical extent of excavation will be made in the field by the NYSDEC and ENGINEER. Soil removed from the excavation areas that is neither grossly contaminated nor contains purifier waste will be segregated and re-used on-Site for backfill. The actual volume of source soil that will be removed as part of this remedy may increase or decrease based on field observations during remedial activities and pre-remedial site investigation activities including the additional test pits discussed in Section 3.1. The NYSDEC together with the ENGINEER will inspect the excavations and make the determinations in the field. Once the final excavation limits have been reached, documentation samples will be collected from the excavation bottom and sidewalls as discussed in Section 5.1.5.

5.5.2 Removal Plan

The volume of excavation (based on the approximate areas of excavation shown on Figures 3.1.1 and 3.1.2) is presently estimated for planning purposes at 51,600 cubic yards. The excavated materials will be segregated and stockpiled within the clean areas on-site for disposal at a permitted Facility, a Municipal Solid Waste (MSW)/C&D landfill, or for use as on-site backfill material. If the C&D materials can not be effectively separated from the impacted soils, they will be handled as impacted materials. The sequencing of the work and size of the excavation work zones will be established once a remedial contractor has been selected and approved by the NYSDEC as part of the Remedial Design and Construction Management Plan for the project. Visual determinations will be made in the field regarding NAPL saturation and the presence of purifier waste as described in Section 5.5.1. Soil removed from these areas that is neither grossly contaminated nor contains purifier waste will be segregated and re-used on-Site for backfill.

The soil removal activities will be performed in conformance with a Site-specific Health and Safety Plan (HASP) and New York State Department of Health (NYSDOH) requirements for a Community Air Monitoring Plan (CAMP). Proven soil conservation practices will be incorporated into the design specifications to mitigate soil erosion, off-site sediment migration, and water pollution from erosion. The remedial design specifications will also address the material to be brought onto the Site for use as backfill indicating its origin and qualification from a soil borrow site that has been verified (through full TCL/TAL sampling) as having no analytes exceeding the NYSDEC TAGM 4046 levels or local site background as determined by the procedure in NYSDEC Draft DER 10 ("Technical Guidance for Site Investigation and Remediation"). The import material will be clean and free of debris, cinders, combustibles, wood, roots, and petroleum staining/odors and approved for use by the NYSDEC.

All excavated soil management will be performed on-site within the Contaminated Zone. A combination of excavators, backhoes, and front end loaders will be used to remove the soil from the excavation and place it into stockpiles. MSW and C&D will be mechanically separated and disposed as described above. Grossly contaminated soils or purifier wastes will be transported to the treatment facility. All vehicles and equipment leaving the Contaminated Zone will be decontaminated in the decontamination area.

When excavations exceed 4 feet in depth, the excavation walls may be stabilized using either sloping or bracing, as approved by a qualified ENGINEER. If sheeting, shoring, or other types of mechanical bracing are utilized, these components will be decontaminated upon removal from the Site.

Upon reaching the final extent of excavation based on the NYSDEC's and ENGINEER's observations, the limits of excavation will be surveyed (using conventional or GPS methods to an accuracy of +/- 0.1 feet) to provide an as-built survey. Furthermore, the excavation sidewalls will be lined with geotextile fabric prior to backfilling [Note: An indicator, such as orange plastic snow fence, may be used as an alternative to demarcate the cover soil from the subsurface soil. The fabric will serve as a demarcation marker showing the actual limits of the excavations.

Based on visual observations and in consultation with the ENGINEER, the NYSDEC will verify that grossly contaminated soils or purifier wastes have been excavated. The field decisions relative to depth will be based on observation of subsurface structures and piping and/or the observed migration of DNAPL; therefore, dewatering capabilities will be available to handle wet, grossly contaminated soils. The actual volume of grossly contaminated soils and purifier wastes that will be removed as part of this remedy may increase or decrease based on field observations during remedial activities, pre-remedial site investigation activities including the additional test pits discussed in Section 3.1., and the presence of MGP process piping. Any such piping found to contain flowing coal tar will be traced to connection points or the property boundary, drained of coal tar, and removed. Any grossly contaminated soil surrounding the piping will also be removed for off-site disposal. Excavation in Areas 1 through 3 will continue vertically until the excavation bottom is observed to be free of grossly contaminated soils or former MGP piping/structures, or until a depth of 20 feet bgs has been reached. If grossly contaminated soils (or other MGP source materials) are encountered at depths below 20 feet bgs, remedial efforts will continue to excavate as much of the grossly contaminated/coal-tar saturated soil as the NYSDEC and ENGINEER deem technically feasible under the circumstances. Horizontal excavation in these areas will continue until the excavation sidewalls are observed to be free of grossly contaminated soils and former MGP piping/structures have been removed to the extent to the extent practicable within the property boundaries. Decisions regarding the horizontal and vertical extent of excavation will be made in the field by the NYSDEC and ENGINEER. Soil removed from the excavation areas that is neither grossly contaminated nor contains purifier waste will be segregated and re-used on-Site for backfill. Once the final excavation extent has been reached, documentation samples will be collected from the excavation sidewalls and bottom. The excavation will be backfilled with clean fill. Clean soil would constitute soil with no analytes exceeding NYSDEC TAGM 4046 soil cleanup objectives or local site background as determined by the procedure in NYSDEC Draft DER 10 ("Technical Guidance for Site Investigation and Remediation"). If backfill material is stored on-site, it will be stored in the Clean Zone in covered stockpiles. Where applicable, an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. Backfilling will be performed at maximum 12-inch lifts and compacted to 95% Modified Proctor Density. Excavations will be backfilled to meet existing grades. A Site-wide cap will be installed as described in Section 5.9 below.

5.6 Hydraulic Barrier

A hydraulic barrier wall is proposed to minimize the potential discharge of NAPL to the Eastchester Creek. The barrier wall would link with the hanging sheetpile bulkhead recently constructed by Con Edison (Figure 3.2.2). Penetrating sheetpile wall sections (extending into the top of bedrock) are planned to the north and south of the Con Edison bulkhead. The wall will extend east into the property at the southern end (no return wing is planned for the north end). Regular inspections of the creek during the installation of the barrier wall will be performed for the presence of NAPL sheens and appropriate remedial actions taken (i.e. placement of absorbent booms). Additional details will be provided in the Remedial Design regarding this matter.

The selection of a support and anchoring system for the barrier wall has been completed. The selected option minimizes the impact on the gas main and utilities that will remain along and parallel to Eastchester Creek. The Sheet pile walls will be anchored with tie-backs. The anticipated routing of the new barrier wall will be on the Eastchester Creek side of the existing bulkhead, which would minimize the impact on utilities and the need for additional soil removal. As discussed in Section 3.2.4, there will be NAPL recovery wells along the southern portion of the barrier wall. In addition, hydraulic control with be required to control the potential buildup of hydraulic head on the interior side of the barrier wall. Additional details regarding the hydraulic barrier will be provided in the Remedial Design which will be reviewed and approved by the NYSDEC prior to implementation.

5.6.1 Structural and Geotechnical Wall Requirements

Several factors have influenced the design of the barrier wall option, which has been selected and described below. The variable and in many cases relatively shallow bedrock surface along the proposed barrier wall alignment is the main reason that the proposed wall will require either the use of tie-backs in conjunction with the interlocking sheet-pile sections.

It was necessary to verify certain design parameters and constraints prior to finalizing this barrier wall design, and included:

- Verification of the low water line and the mudline elevation in Eastchester Creek,
- Verification of the bedrock depth below the proposed wall alignment and the potential existence of obstructions that could impact the installation of the wall (using geophysical techniques supplemented by borings),

- Accurately locating (horizontally and vertically) the existing 24-inch gas line adjacent to the proposed wall and verifying what restrictions (e.g., setbacks for tie-backs) may apply to the wall installation as a result of restrictions imposed by the gas line owner (Con Edison), and
- Verification that the NYSDEC and/or the U.S. Army Corps of Engineers will allow the wall to be installed on the Eastchester Creek side of the existing bulkhead.

Sheet Pile Wall Anchored with Tie-backs:

The layout of the sheet pile barrier wall consists of approximately 380 linear feet of "Penetrating wall" north of the existing Con Edison bulkhead and approximately 530 linear feet of "Penetrating wall" south of the existing bulkhead. The design calls for AZ-28 sheet pile sections with tie-backs spaced approximately 8.25 feet on center along the portion of the wall parallel with the Eastchester Creek. All of the wall components will also be protected from corrosion using a protective coal tar epoxy coating. The tie-backs will be installed at an incline to avoid the existing 24-inch gas line and will extend into competent bedrock where they will be anchored. Final wall dimensions and tie-back configuration will be established during final design and may vary somewhat from the dimensions described here.

5.7 Hydraulic Control

Hydraulic control will be required to control the potential buildup of hydraulic head on the interior side of the barrier wall. Hydraulic control will be established through groundwater extraction and subsequent treatment prior to discharge from a combination of two new extraction wells and utilization of two existing recovery wells. The number and locations of extraction wells as well as pumping rates required to accomplish the hydraulic control has been determined through groundwater modeling performed during the remedial pre-design (Attachment I). These four extraction wells, which will discharge to the treatment building housing bag filters and GAC as shown on Figure 5.7.1, are located along the western side of the Site near the barrier wall. The proposed treatment building (Figure 5.7.2) will be located in the northwestern portion of the Site.

Groundwater modeling, including the proposed hydraulic control and stormwater control designs, indicate an estimated total pumping rate of approximately 30 gpm. Calculations indicate that hydraulic control could be established by installing two groundwater extraction wells in a cluster near the middle of the southern hydraulic barrier inland arm, and utilizing existing NAPL recovery wells RW-1 and RW-3 at the middle and northern end of the hydraulic barrier.

Borings for wells will be drilled using rotary methods, with either a rotary-bit or hollow-stem augers. The wells would be constructed of 6-inch Schedule 40 PVC risers with stainless steel, continuous-wrap well screen and a 2-foot long sump. A sand filter pack would be installed in the well and graded based on grain-size analysis of the formation. The well screen slot size would be based on the grading of the selected filter pack material. A bentonite seal will be installed above the filter pack and the well would be grouted to the surface. All wells will be finished below grade to avoid any interference with parking lot activities.

The hydraulic control wells will be equipped with submersible electric pumps, discharge piping, and below grade pitless adaptor assemblies to convey extracted water to the proposed treatment system. Each well will contain a level sensor that will be displayed in the proposed treatment building. The combination of the level sensor and pump controls will be used to maintain the required drawdown in each of the recovery wells.

The extraction well pumps will discharge to HDPE piping located below grade. The piping will deliver flow to the proposed treatment building. Each recovery well discharge will flow to a bag filter unit and then through a flowmeter that will be used in combination with the recovery well level controls to control the rate of pumping and pump drawdown. The flow from the bag filters will discharge to a common header pipe that will flow to the inlet of one of three GAC units plumbed in parallel. Because LNAPL may be recovered from the shallow recovery wells, an oil/water separator, NAPL storage tank and associated valves and piping will be installed. Inlet and outlet valves will allow individual GAC units to be isolated for maintenance and change-out of spent carbon. The discharge from the three parallel GAC units will then be passed through a fourth GAC unit that will be plumbed in series and serve as a polish unit. Discharge from the fourth GAC unit will have the flow measured via a flowmeter and be discharged to the stormwater system.

The treatment building will consist of panelized steel construction, having nominal dimension of 18 feet by 24 feet. The building will have insulation and interior wall and ceiling liner panels. The building will be equipped with necessary lights, ventilation and electric unit heater to maintain the building environment. The proposed treatment building will contain an electrical room for main electrical feed and service panels. Space has been allocated in the proposed treatment building for storage of chemicals to treat iron fouling in the recovery wells, should it become necessary. The chemical treatment for iron fouling will likely consist of the addition of hydrogen peroxide in the recovery wells.

5.8 NAPL Recovery in Saturated Zone

The remedy will include continuous pumping of NAPL below grade from recovery wells into on-site storage units (conveyed below grade). The NAPL will periodically be transported off-site to be disposed, or recycled; pending the characteristics of the NAPL once the NAPL recovery system is installed. Components of the NAPL remedy are described below and shown schematically on Figure 3.2.7. Further details will be presented in subsequent design documents.

5.8.1 LNAPL Recovery

Removal of LNAPL from the water table along the proposed barrier wall would be accomplished, as necessary, using an active LNAPL recovery system in proposed shallow hydraulic control well HCW-02S (Figure 3.2.3). A dual-phase pump would be installed in the shallow hydraulic control well to remove LNAPL and pump it to a frac tank or other container for temporary storage. The frac tank/container would either be double walled or installed in a walled containment area underlain by a liner capable of containing 110 percent of the volume of the tank, in case of a spill. A high level sensor would be installed in the tank/container which would shut the system down to prevent overfilling. The frac tank/container would be emptied as necessary by a licensed waste hauler and treated at an approved facility.

5.8.2 DNAPL Recovery

The four existing wells currently used for NAPL recovery would continue to be used (RW-6, -9, -10, and -11). Also, four additional recovery wells (RW-12 through RW-15) will be installed to increase DNAPL recovery rates. In Recovery Area A, two recovery wells will be installed in between RW-10 and RW-11: RW-12 10 feet to the north and RW-13 ten feet to north of RW-10 (Figure 3.2.5). In Recovery Area B, two recovery wells will be installed: RW-14 between RW-6 and RW-7 and RW-15 between RW-6 and RW-9 (Figure 3.2.6). Anticipated details concerning the recovery wells are shown in the table below:

Well	Total Depth (ft bgs)*	Screen Interval (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Seal (ft bgs)	Grout (ft bgs)	Well Diameter (inches)
RW-12	42	20 - 40	18 – 42	16 – 18	0 - 16	6
RW-13	72	50 - 70	48 – 72	46 – 48	0 – 46	6
RW-14	37	15 – 35	13 – 37	10 – 13	0 – 10	6
RW-15	37	15 – 35	13 – 37	10 – 13	0 – 10	6

*Each recovery well will be installed with a two-foot long sump.

The two targeted areas – RW-6/9 and RW-10/11 – are approximately 700 feet apart and will be connected to a common frac tank located in the southwestern portion of the site for storage of extracted DNAPL. No damage is anticipated to the equipment since the DNAPL recovery systems will be installed below grade.

Pneumatic pumps will be installed in the recovery wells. The associated pump control equipment and sensors will be housed in an underground, pre-fabricated type wellhead vault. The level sensors (bubbler) will be used to sense the level of fluid in the well and turn on the controls to the pump and thus maintain a specific fluid level in the well. The air compressor for the pneumatic pumps will be housed in a small building located in the southwestern portion of the Site. If it is determined that the DNAPL impacts the effectiveness of the sensors, pumping on a timed basis will be evaluated in an attempt to limit the removal and subsequent disposal of significant volumes of groundwater.

DNAPL from the recovery wells will be initially pumped from the well into a frac tank. The frac tank would provide temporary storage for the recovered DNAPL. The use of Frac tanks is a temporary measure to be conducted during the remedial construction and construction phase of the redevelopment. Once experience is gained with long term pumping, and NAPL recovery rates and volumes are better known, a permanent NAPL storage/management system will be designed and installed to avoid aesthetic issues related to new tenant concerns. The frequency for emptying the frac tank will depend on the number of recovery wells pumping to the tanks and their associated flow rates. For example, eight pumps operating at 0.5 gpm each would produce roughly 6,000 gpd or 40,000 gallons per week. A high level sensor will be installed in the tank to shut the system down before overflow conditions are encountered. Frac tank piping will also be double walled, to prevent overfilling.

5.9 Site Cap

A cap will encompass the entire site to prevent incidental exposure to contaminated soils. Final grading will include placement of a minimum of two feet of clean soil in landscape areas (top 6” to support vegetation) and a minimum of 6”of asphalt paving in roadways & parking lots or of concrete in building slabs & foundations. Where applicable, an indicator such as orange plastic snow fence will be placed to demarcate the cover soil from the subsurface soil. Clean soil would constitute soil with no analytes exceeding NYSDEC TAGM 4046 soil cleanup objectives or local site background as determined by the procedure in NYSDEC Draft DER 10 ("Technical Guidance for Site Investigation and Remediation").

5.10 Vapor Mitigation/Control

Vapor barrier and sub-slab depressurization/venting systems are proposed to be installed in the renovated Kmart building and the Mandee's building (as a component of the approved IRM) to eliminate the potential pathway of subsurface vapors to an enclosed space. The sub-slab venting system for the Mandee's building is described in the approved IRM Work Plan (Malcolm Pirnie, June 2005). As shown on Figure 3.2.8, the proposed vapor extraction system for the Kmart building will consist of the following components to be further detailed in the Remedial Design and approved by the NYSDEC:

- Vapor barrier: This vapor barrier will be installed immediately underneath the floor slab (in areas that are saw cut for the placement of perforated piping) to provide an impermeable barrier to vapor migration.
- Gravel media: Typical subgrade material for these types of buildings includes a gravel media under the floor slab. This gravel media will be utilized as part of the proposed vapor extraction system. If a gravel media is not incorporated into the floor slab system, a geogrid or similar material may be utilized in conjunction with the trenches described below to provide a layer for vapor transmission.
- Perforated piping: Perforated piping will be installed in saw cut trenches and in gravel media. Dependant on the depth of the gravel media, gravel-filled trenches may be required to provide sufficient depth for crush protection. The perforated piping will distribute vacuum pressure through the gravel media, drawing vapor into the collection system.
- Geotextile: A geotextile separation layer will be installed between the gravel and the subgrade, to prevent migration of fines into the gravel media.
- Header piping: A solid pipe manifold system will be used to connect perforated pipe to the blower unit.
- Blower: An intrinsically-safe blower will be installed outside of the proposed building footprint, in a separate enclosure. The blower will be connected to the perforated piping as described in the above items. The blower will discharge through a standpipe to the atmosphere, at an elevation above the roof of the proposed building.

The design of the proposed vapor extraction system for the Kmart building will be approved by the NYSDEC and NYSDOH prior to installation.

5.11 Erosion and Sediment Control Plan

The impact to this Site associated with the proposed remedy results in disturbance of more than 1 acre. Therefore, a SPDES General Permit for Stormwater Discharge from Construction Activities (Permit No. GP-02-01) or its equivalency will be sought prior to initiating Site activities. Preparation of this Permit will include the development of a SWPPP, which will address erosion and sediment control. The SWPPP will address at minimum:

- Implementation of dust control measures during excavation, soil staging and backfilling.
- Installation of silt fence or hay bales at the Site perimeter.
- Installation of a gravel tracking pad at the Site exit.

Due to the size of the Site and relatively level topography, additional erosion and sediment control measures are not likely to be necessary. Erosion control facilities shall be installed prior to land disturbing activities, and as necessary to control erosion from land disturbing activities. Erosion controls shall remain in place until vegetative cover is established, construction is complete, and NYSDEC approval is obtained to remove these controls.

5.12 Equipment Decontamination Procedures

Heavy equipment used in the contaminated zone at the Site will be decontaminated prior to leaving the Site. To avoid cross contamination between impacted areas, equipment will also be decontaminated when gross contamination is present prior to moving from area to area. Primary decontamination methods will include pressure washing/steam cleaning vehicle tires and excavator buckets. Personnel decontamination procedures will be outlined in the Site-specific Health and Safety Plan. Decontamination of sampling equipment is outlined in Section 7.4.4 of this RAWP.

5.13 Groundwater Management during Construction (Dewatering)

The management of groundwater during construction (i.e., dewatering) is a key component of the remedy implementation due to the potential excavation depths going below the water table. The results of the pre-construction dewatering investigations will allow for the practical, cost effective development of the means and methods for groundwater management that will be described in the Remedial Design for the project prepared by the selected contractor.

Prior to initiating excavation activities, a construction dewatering treatment system will be mobilized to the Site. It is anticipated that the treatment system will be comprised of storage and settling tankage, physical separation components to remove suspended solids and NAPL, and granular activated carbon for removal of dissolved phase organic compounds. The treated water will be discharged under a temporary SPDES permit granted by the NYSDEC to the storm sewer system on-Site, which discharges to Eastchester Creek.

5.14 Waste Classification, Sampling, and Disposal

Excavated soils will be visually inspected and segregated during excavation as discussed below.

5.14.1 Management of Grossly Contaminated Soils/Purifier Waste

Purifier waste and purifier waste containing soils in Area E will not be stockpiled on-Site. This material has been pre-characterized and will be loaded directly into dump trailers for off-site disposal. The purifier waste has been tested for full toxicity characteristic leaching procedure (TCLP) compounds, total petroleum hydrocarbons, characteristic of reactivity, total cyanide and sulfur. It has been determined that the material is non-hazardous and will be disposed of in accordance with applicable state and federal regulations.

Grossly contaminated soils from excavation areas outside of Area E will be either pre-characterized and loaded directly into dump trailers for off-site disposal at a permitted facility or placed in stockpiles within the contaminated zone pending characterization and off-site disposal. The grossly contaminated soils will be characterized in accordance with the disposal facility's requirements and in accordance with NYSDEC TAGM-4061. Soil stockpiles will be covered with 10-mil polyethylene sheeting if staged beyond working hours.

5.14.2 Management of Remnant MGP Sub-grade Structures and Piping Impacted by NAPL

During the soil excavation process, it is possible that remnant MGP sub-grade structures (i.e., underground oil storage tanks, brick cisterns, etc.) and piping impacted by NAPL will be encountered. These structures will be exposed and inspected for the potential presence of NAPL. If NAPL is present, it will be pumped out from the structures prior to their excavation and removal from the site. Any piping found to contain flowing coal tar will be traced to connection points or the property boundary, drained of coal tar, and removed. Any grossly contaminated soil surrounding the piping will also be removed for off-site disposal. All wastes will be containerized on site into a storage tank or NYSDOT approved 55-gallon drums, characterized, labeled, and transported to an appropriate off-site waste disposal facility.

5.14.3 Management of Mechanically Unsuitable Materials

Mechanically unsuitable materials (such as peat, clayey soils, wood, railroad ties, etc.) are those materials encountered during excavation that will not support loading from overlying structures. A peat layer exists in the western portion of the Site, and the entire construction area is a former MGP plant. Therefore, it is possible that the excavations identified on Figure 5.2.1 as Areas 1, 2 and 3 may encounter mechanically unsuitable materials. These materials will be used if free of NAPL or coal tar, to the extent practical, as on-Site fill material where loading from overlying structures is not a concern. Excess mechanically unsuitable materials will be properly disposed off-Site in accordance with local, State and Federal laws, regulations, and requirements.

If identified to be contaminated with NAPL, these materials will be handled in the same manner as other impacted materials excavated from the Site.

5.14.4 Management of Construction/Demolition Debris

C&D materials excavated from the Site will be mechanically separated from the contaminated soil and either temporarily stockpiled within the Contaminated Zone for future processing and use as on-site fill material, or directly loaded onto trucks for off-site disposal at a permitted facility.

5.15 Documentation Sampling and Reporting

Documentation soil sampling will be performed upon completion of test pitting and soil removal activities to provide documentation of constituents that remain in the soil after completion of the remedial actions. One sidewall sample will be collected from each 200 linear feet of excavation for analyses of TCL VOCs, TCL SVOCs, TAL metals and cyanide. One sample will be collected from the excavation bottom every 5,000 square feet for TCL VOCs and TCL SVOCs. If necessary, dewatering strategies will be in place in order to allow for visual observation of the excavation before the collection of documentation samples in zones where excavation extended beyond the water table. The sample locations will be marked adjacent to the test pits or remedial excavations and surveyed (using conventional or GPS methods to an accuracy of +/- 3 feet) to document the locations. The depth of the samples will be measured relative to the ground surface or a common datum and converted to elevations above MSL for reporting purposes.

In addition to the documentation sampling, the following minimum documentation and reporting requirements will be followed during the remediation process and the results will be included in a Construction Certification Report. The construction certification report will be certified by New York State licensed Professional ENGINEER and will include:

- Daily field reports summarizing work performed each day.
- Photographic logs.
- Air monitoring data generated during the Community Air Monitoring Program.
- "As Built" drawings showing the extent of the soil excavations and documentation sample locations, locations of recovery wells and appurtenances, and the plan view and cross section(s) of the hydraulic barrier wall.
- Initial performance data for the hydraulic control and NAPL recovery systems.
- Documentation for the disposition of materials disposed of off-site including copies of Bills of Lading, waste manifests, and destruction certificates, as appropriate.
- Documentation for fill materials brought on site.
- Documentation of dewatering and erosion control measures.

The construction certification report is discussed further in Section 5.17.

5.16 Site Restoration Requirements and Demobilization

Field equipment and materials will be properly decontaminated and removed from the Site following the completion of remediation activities. A demarcation marker will be placed around the perimeter of the excavated areas prior to backfilling with suitable materials, as discussed in Section 5.5, in preparation for the final Site cap. The final cap will be affected upon completion of the slab on grade commercial retail structure, paved parking lots and landscaped areas.

5.17 Notification and Reporting

The following minimum notification and reporting requirements will be followed by the Volunteer prior to, during and following the remediation process, as appropriate:

- Following approval of this RAWP the Volunteer will submit the necessary remedial design documents to the NYSDEC for review and approval. The remedial design documents will include design details on the hydraulic barrier wall and hydraulic control system, the NAPL recovery systems, the Site cap, vapor mitigation/control systems, and the soil removal action and other remedial construction tasks. In addition, prior to initiation of remedial actions, the Volunteer will submit the following supporting documents to the NYSDEC for review and approval: Health and Safety Plan (HASP), Community Air Monitoring Plan (CAMP), CMP, and supporting documents
- A minimum of ten working days notice will be provided to the NYSDEC prior to the initiation of remedial activities at the Site or before future construction activities, including contractor meetings.
- If unanticipated subsurface structures containing grossly contaminated soils are encountered during remedial actions or future redevelopment activities, excavation will cease and the NYSDEC will be immediately notified.

As discussed in Section 9.0 of this document, Citizen Participation Plan, the NYSDEC will provide notice to the public and appropriate government agencies that this RAWP is available for review and comment. Following review of the RAWP by the NYSDEC, the Remedial Design documents discussed above will be submitted for review and approval.

Upon completion of the remedial activities, a Construction Certification Report stamped by a New York State licensed Professional Engineer will be prepared and submitted to the NYSDEC and NYSDOH within 90 days after the completion of the remedial action. The report will include:

- A certification by a New York State licensed Professional Engineer that all work was performed in accordance with the RAWP and/or modifications thereof approved by the NYSDEC.
- Copies of all permits obtained to complete the remedy.
- Documentation of remedial design modifications.
- A Site map showing the existing conditions and the property's tax map number(s).
- "As Built" drawings showing surveyed limits of the soil excavations and documentation sample locations, locations of recovery wells and appurtenances, and the plan view and cross section(s) of the hydraulic barrier wall.
- Initial performance data for hydraulic control system and NAPL recovery systems.
- Documentation of the disposition of materials disposed of off-site including copies of Bills of Lading, waste manifests, and destruction certificates, as appropriate.
- Documentation of fill materials brought on site.
- Description dewatering and erosion control measures.
- Documentation sample results.
- Copies of daily field reports.
- A text narrative describing the remediation activities performed, health and safety monitoring performed (on-site and community air monitoring), quantities and locations/depths of materials excavated, NAPL recovery data, disposal locations for all materials, sample locations and results, location and acceptability test results for backfill materials used, and other

pertinent information necessary to document proper completion of remediation activities.

- An OM&M work plan will be prepared in concert with the SMP and the Environmental Easement to ensure that the engineering and institutional controls continue to meet the remedial action objectives. An annual site inspection (ASI) will be conducted in accordance with the OS&M plan to document continued compliance with the remedy. An ASI report will be prepared by a Professional Engineer on an annual basis and submitted to the NYSDEC. The report will present performance data for the hydraulic control system, NAPL recovery systems, site cap and vapor extraction system(s). Repairs and/or modifications to the engineering controls will also be presented in the ASI report.

The Volunteer will have an annual submittal prepared that contains a certification that the institutional controls and engineering controls are still in place, allow the NYSDEC access to the site, and that nothing has occurred that would impair the ability of the remedy to protect public health or the environment, or constitute a violation or failure to comply with the SMP.

6.0 HEALTH AND SAFETY

A Site-specific HASP will be developed for the implementation of the remedial activities at the Site. The HASP will outline safe work practices, monitoring requirements and personal decontamination procedures to be followed during remedial activities in accordance with applicable OSHA and NYSDOH regulations. The HASP will include monitoring requirements outlined in the NYSDOH Generic Community Air Monitoring Plan (Appendix C) and the Site-specific Community Air Monitoring Plan (CAMP). The HASP will be prepared and submitted under separate cover once the scope of work of the remedial actions and means and methods of their implementation have been defined. The Site specific CAMP will also be submitted under separate cover.

7.0 Quality Assurance/Quality Control Plan

7.1 Introduction

This Quality Assurance Project Plan (QAPP) describes the protocols and procedures that will be followed during implementation of the remedial actions at the Site. The objective of the QAPP is to provide for Quality Assurance (QA) and maintain Quality Control (QC) of environmental sampling activities conducted under the RAWP. Adherence to the QAPP will ensure that quality and usable data will be obtained during the remedial work.

7.2 Laboratory Procedures

7.2.1 Laboratory Methods

Table 7.1 summarizes the laboratory methods that will be used to analyze all field samples as well as the sample container type, preservation, and applicable holding times. All sample analysis will be performed in a New York State Department of Health Environmental Laboratory Approval Program (NYSDOH-ELAP) laboratory. Because the samples will collected for documentation purposes and not compliance, the laboratory will produce ASP, Exhibit B, Category A, or equivalent deliverable packages.

7.2.2 Quality Control Sampling

In addition to the laboratory analysis of the field soil and groundwater samples, additional analysis will be included for quality control measures. These samples will include one equipment rinsate blank, one trip blank, one matrix spike/matrix spike duplicate (MS/MSD) and one set of duplicate samples per twenty field samples or per sample delivery group, whichever includes fewer samples. The equipment blank, MS/MSD and duplicate samples will be analyzed for TCL VOCs, TCL SVOCs, TAL metals, and cyanide. The trip blank will be analyzed for VOCs.

7.3 Standard Operating Procedures

The following sections describe the standard operating procedures for collecting and handling samples in the field and for performing decontamination of sampling equipment. During these operations, safety monitoring will be performed as described in the Site-specific HASP and all field personnel will wear appropriate personal protective equipment.

7.3.1 Test Pits and Excavations

Test pitting will be conducted in select areas to evaluate whether grossly contaminated soils are present. The test pits will be excavated to the desired depth and length using a conventional rubber tire or track mounted excavator or backhoe. The remedial actions will include soil excavations, which will also be completed using conventional excavation equipment.

7.3.2 Soil Sample Collection

Test pit and post excavation sampling will be conducted according to the following procedures:

- Check the staked-out sampling location for consistency with the test pitting/excavation location plan.
- Decontaminate excavator bucket (see Section 7.4.4).
- The excavator operator will obtain a soil sample (as discreet as practical) from the side wall of the excavation above the water table using the excavator bucket.
- Inspect the soil for visual evidence of contamination including staining, sheens, odor and/or the presence of tar-like or oil-like material.

- Create small holes in the soil sample using a sampling spoon (or similar) and place the photoionization detector (PID) probe in the hole to obtain an organic vapor concentration measurement.
- Characterize the sample according to the modified Burmister soil classification system.
- Collect an aliquot of soil from the interior portion of the soil (i.e., not in direct contact with the excavator bucket) and place in the required laboratory supplied sample jars. Non-VOC aliquots will be homogenized in a stainless steel mixing bowl prior to placement in sample jars. Seal and label the sample jars as described in Section 7.4.5 and place in an ice-filled cooler.
- Decontaminate any soil sampling equipment between sample locations as described in Section 7.4.4.
- Record test pit/ excavation number, sample location, sample depth and sample observations (evidence of contamination, PID readings, soil classification) in field log book and test pit log data sheet, if applicable.

7.3.3 Existing/Monitoring Well Sampling

Groundwater samples may be collected from new or existing recovery wells, extraction wells and monitoring wells in according with the following procedure:

- Prepare the sampling area by placing plastic sheeting over the well. Cut a hole in the sheeting to provide access to the well manhole.
- Remove the locking cap and measure the vapor concentrations in the well with a PID.
- Measure the total well depth, depth to water and check for the presence of LNAPL or DNAPL using an oil/water interface probe. Groundwater samples will not be collected from wells containing measurable NAPL.
- Use the water level and total well depth measurements to calculate the length of the mid-point of the water column within the screened interval. For example, for a shallow well where the total depth is 15 feet, screened interval is five to 15 feet,

and depth to water is seven feet, the mid-point of the water column within the screened interval would be 11 feet. Similarly for a deep well where the total depth is 40 feet, screened interval is 30 to 40 feet, and depth to water is 15 feet, the mid-point of the water column within the screened interval would be 35 feet.

- Connect dedicated tubing to either a submersible or bladder pump and lower the pump such that the intake of the pump is set at the mid-point of water column within the screened interval of the well. Connect the discharge end of the tubing to the flow-through cell of a Hydrolab Quanta multi-parameter (or equivalent) meter. Connect tubing to the output of the cell and place the discharge end of the tubing in a 5-gallon bucket.
- Activate the pump at the lowest flow rate setting of the pump.
- Measure the depth to water within the well. The pump flow rate may be increased such that the water level measurements do not change by more than 0.3 feet as compared to the initial static reading.
- Transfer discharged water from the 5-gallon buckets to 55-gallons drums designated for well-purge water.
- During purging, collect periodic samples and analyze for water quality indicators (e.g., turbidity, pH, temperature, dissolved oxygen, reduction-oxidation potential, and specific conductivity) with measurements collected approximately every five minutes.
- Continue purging the well until turbidity and water quality indicators have stabilized to the extent practicable. The criteria for stabilization will be three successive readings for the following parameters and criteria:

Parameter	**Stabilization Criteria**
pH	+/- 0.1 pH units
Specific Conductance	+/- 3% S/cm
ORP/Eh	+/- 10mV
Turbidity	+/- 10% NTUs (for values > 1 NTU)
Dissolved Oxygen	+/- 0.3 mg/l

- If the water quality parameters do not stabilize within four hours or after removal of three well volumes, purging may be discontinued. Efforts to stabilize the water quality for the well must be recorded in the field book, and samples may then be collected as described below.
- After purging, disconnect the tubing to the inlet of the flow-through cell. Collect groundwater samples directly from the discharge end of the tubing and place into the required sample containers as described in Section 7.4.5. Label the containers as described in Section 7.4.5 and place in an ice-filled cooler. Samples should be collected first for VOCs, then SVOCs, and the remaining inorganic analyses.
- For the dissolved TAL metals sample, pass water through a disposable filter cartridge and collect in the appropriate sample container.
- Collect one final field sample and analyze for turbidity and water quality parameters (e.g., pH, temperature, dissolved oxygen, reduction-oxidation potential, and specific conductivity).
- Once sampling is complete, remove the pump and tubing from the well. Disconnect the tubing and place it back in the well for reuse during the next sampling event. Dispose of the sample filter in a 55-gallon drum designated for disposable sampling materials and PPE.
- Decontaminate the pump, oil/water interface probe and flow-through cell as described in Section 7.4.4.
- Record all measurements (depth to water, depth to NAPL, water quality parameters, turbidity), calculations (well volume) and observations in the project logbook and field data sheet, if applicable.

7.3.4 Decontamination Procedures

Decontamination will be conducted on plastic sheeting or other containment unit that is bermed to prevent runoff to the ground. Prior to use on-site and between sampling locations, the pump, oil/water interface probe, and other non-disposable sampling equipment will be decontaminated using the following procedures:

1. Scrub using tap water/Simple Green® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/ Simple Green® and bristle brush.
4. Rinse again with tap water.
5. Final rinse with distilled water.
6. Air dry the equipment.

The solid stem augers, hollow stem augers and excavator buckets will be decontaminated with a pressure washer or steam cleaner using a tap water/Simple Green® solution.

7.3.5 Sample Handling

7.3.5.1 Sample Identification

All samples will be consistently identified in all field documentation, chain-of-custody documents and laboratory reports using an alpha-numeric code. All samples will be identified with a prefix of "PP" to designate the Pelham Plaza Site. Groundwater samples will be identified by the monitoring well number and test pit samples followed by the sample depth interval (in parenthesis). The designation "PE" will be added at the end of the identification for soil boring samples collected for post-excavation purposes. Waste characterization samples collected from 55-gallon drums will be identified by the drum number (e.g., D-1 or D-2) followed by a sample type designation (LQ for liquid and SD for solid).

The designation "MS" will be added at the end of the designation for matrix spike/matrix spike duplicate samples. The field duplicate samples will be labeled with a dummy sample location to ensure that they are submitted as blind samples to the laboratory. The dummy identification will consist of the sample type followed by a letter. For duplicate soil boring samples, the sample depth will be the actual sample depth interval. Trip blanks and field blanks will be identified with “TB” and “FB”, respectively.

The following table provides examples of the sampling identification scheme:

Sample Description	Sample Designation
Soil sample collected from 5 to 7 feet at Test Pit-1 (TP-1)	PP-TP-1 (5-7)
Groundwater sample collected from monitoring well MW-5	PP-MW-5
Liquid waste characterization sample collected from drum number D-7	PP-D-7-LQ
MS/MSD duplicate sample from MW-8	PP-MW-8-MS
Duplicate sample from 12 to 14 feet at SB-10	PP-SB-A (12-14)

7.3.5.2 Sample Labeling and Shipping

All sample containers will be provided with labels containing the following information:

- Project identification
- Sample identification
- Date and time of collection
- Analyses to be performed
- Preservatives, if any
- Samplers initials

Once the samples are collected and labeled, they will be placed in ice-filled coolers and stored in a cool area away from direct sunlight to await shipment to the laboratory. Soil and groundwater samples will be shipped to the laboratory on a regular basis so sample holding times are not exceeded. At the start and end of each workday, field personnel will add ice to the coolers as needed.

The samples will be prepared for shipment by placing each sample in a sealable plastic bag, then wrapping each container in bubble wrap to prevent breakage, adding fresh ice in two sealable plastic bags and the chain-of-custody form. Samples will be shipped overnight (e.g., via Federal Express) or transported by a laboratory courier. All coolers shipped to the laboratory will be sealed with strapping tape and a custody seal to ensure that the coolers remain sealed during delivery.

7.3.5.3 Sample Custody

Field personnel will be responsible for maintaining the sample coolers in a secured location until they are delivered to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on chain-of-custody forms. The chain-of-custody forms will contain the following information: project name; names of sampling personnel; sample number; testing parameters, date and time of collection and matrix; and signatures of individuals involved in sample transfer, and the dates and times of transfers. Laboratory personnel will note the condition of the custody seal at sample check-in.

7.3.6 Field Instrumentation

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the Site for referencing proper operation, maintenance and calibration procedures.

The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork. If an instrument fails calibration, the project manager or QA/QC officer will be contacted immediately to obtain a replacement instrument and arrange for repairs. A calibration log will be maintained to record the date of each calibration, any failure to calibrate and corrective actions taken. The PID will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas.

7.4 Data Review

The QA/QC officer will conduct a cursory review of all analytical data and prepare a DVR to assess the quality of the data and determine its usability. The data validation procedures and report content are detailed in Section 8.0

8.0 DATA VALIDATION REPORT

A DVR will be prepared which provides an evaluation of the analytical data generated during the remedial action process. The primary objective of the data validation will be to determine whether or not the data, as presented, meets the project specific criteria for data quality and data use (i.e., documentation of remedial activities).

The validation process will consist of reviewing and evaluating the analytical data packages. During the course of the review, the following will be evaluated:

- Have the holding times been met?
- Do the QC data fall within the protocol required limits and specifications?
- Have the data been generated using established and agreed upon analytical protocols?
- Do the data require qualification?

The data validation will be conducted based on guidelines from USEPA's National Functional Guidelines with revisions from USEPA Region II. The validation process will be sufficient to determine the quality and usability of the data with respect to the proposed remedial activities.

9.0 Citizen Participation Plan

A Citizen Participation Plan has been prepared outlining the responsibilities of the Volunteer and the NYSDEC regarding relaying information about the RAWP to the public. The Citizen Participation Plan is presented in Appendix H, hereto.

10.0 REFERENCES

Malcolm Pirnie, Inc., July 2005, Interim Remedial Measure Work Plan, Pelham Plaza, Pelham Manor, New York.

AKRF, Inc./Malcolm Pirnie, Inc., January 2005, Phase II Site Investigation Report, Pelham Plaza, Pelham Manor, New York.

AKRF, Inc./Malcolm Pirnie, Inc., July 2004, Site Investigation Report - Phase I, Pelham Plaza, Pelham Manor, New York.

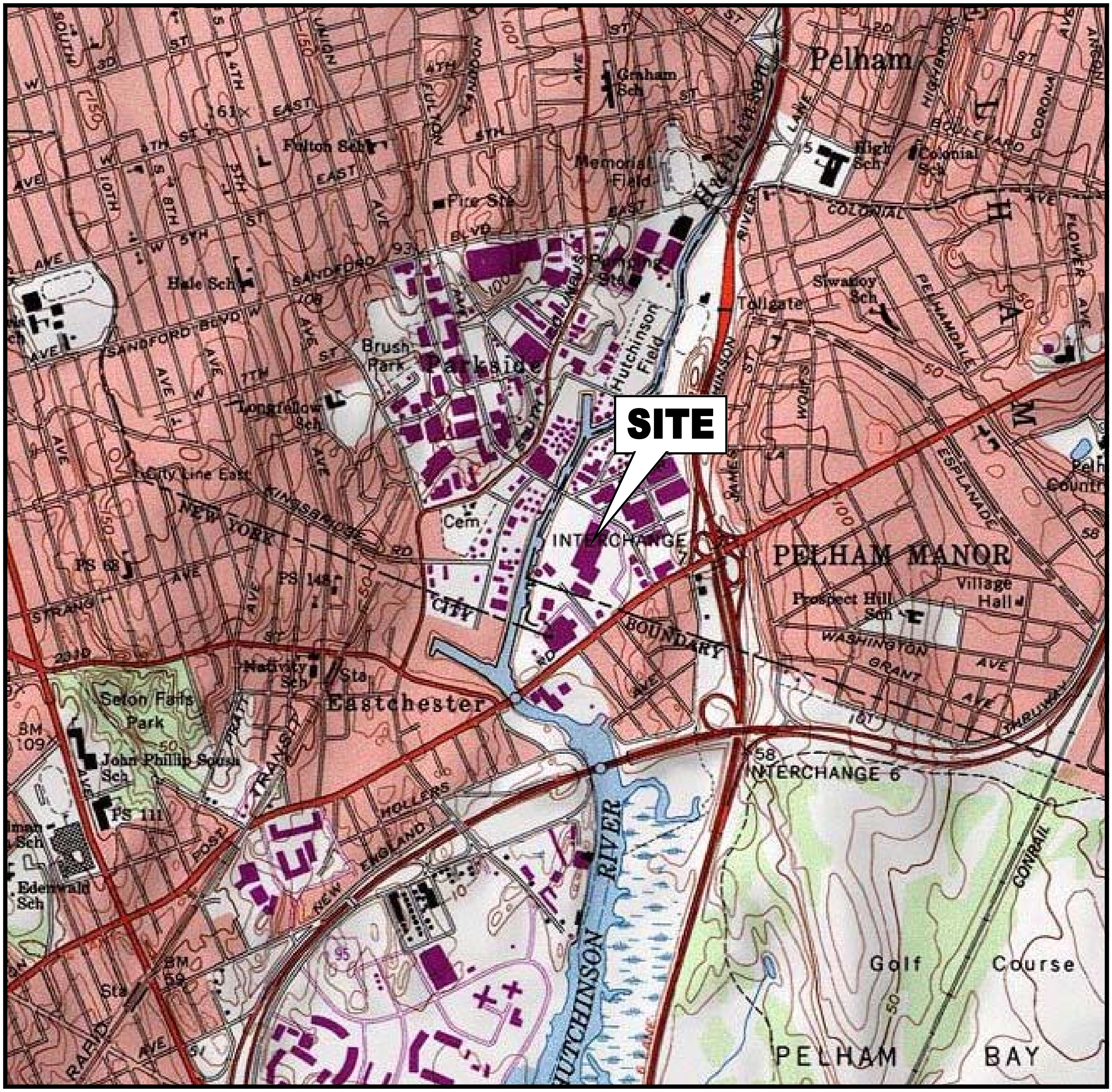
Fischer, D. W., Isachsen, Y. W., and Rickard, L. V., 1970, Geologic Map of New York, Lower Hudson Sheet: New York State Museum and Science Service Map and Chart Series No. 15, 6 sheets, scale 1:250,000.

Cadwell, D. H., et al., 1989, Quaternary geology of New York, Lower Hudson Sheet: New York State Museum and Science Service Map and Chart Series No. 40, scale 1:250,000.

Malcolm Pirnie, Inc., April 2004, Conceptual Remedial Action Work Plan, Pelham Plaza, Pelham Manor, New York.

New York State Department of Environmental Conservation, July 2002, Voluntary Cleanup Agreement for Pelham Plaza, Site Number V00110-3.

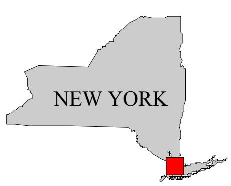
FIGURES



SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'



QUADRANGLE

N

SOURCE:
USGS TOPOGRAPHIC MAP - MOUNT VERNON, N.Y.
QUADRANGLE - DATED 1995.

MALCOLM PIRNIE

PELHAM PLAZA SITE
Pelham Manor, New York

PROJECT SITE LOCATION

FIGURE 1.0.1

REVISIONS		
NO.	BY	DATE	REMARKS

DES AB
DWN MDM
CKD XXX

MALCOLM PIRNIE

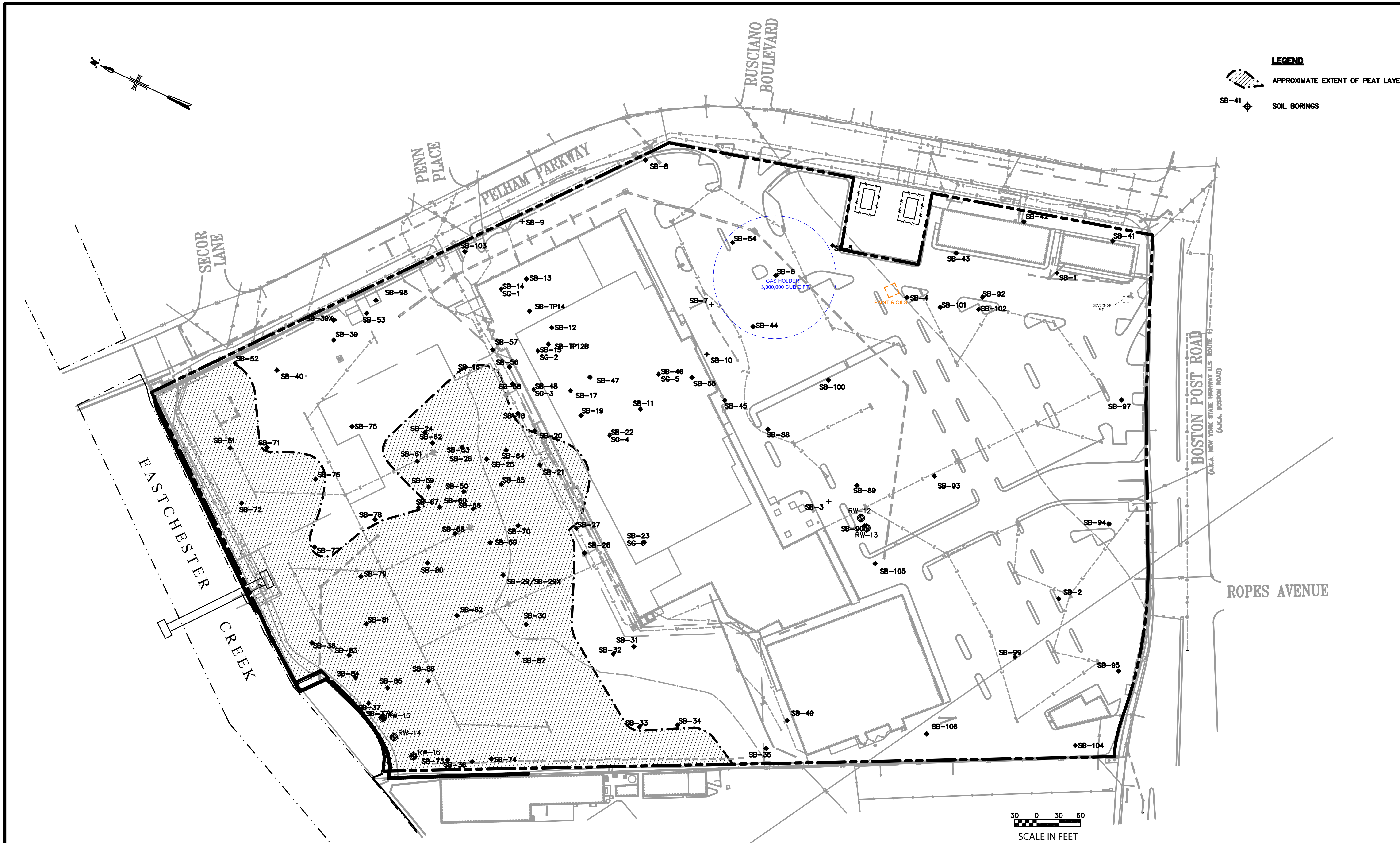
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION
WORK PLAN

EXISTING
CONDITIONS
SCALE: 1"=60'

DATE

FIGURE 1.0.2

CAD REF. NO. FIG 102



MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES AB
DWN MDM
CKD XXX

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

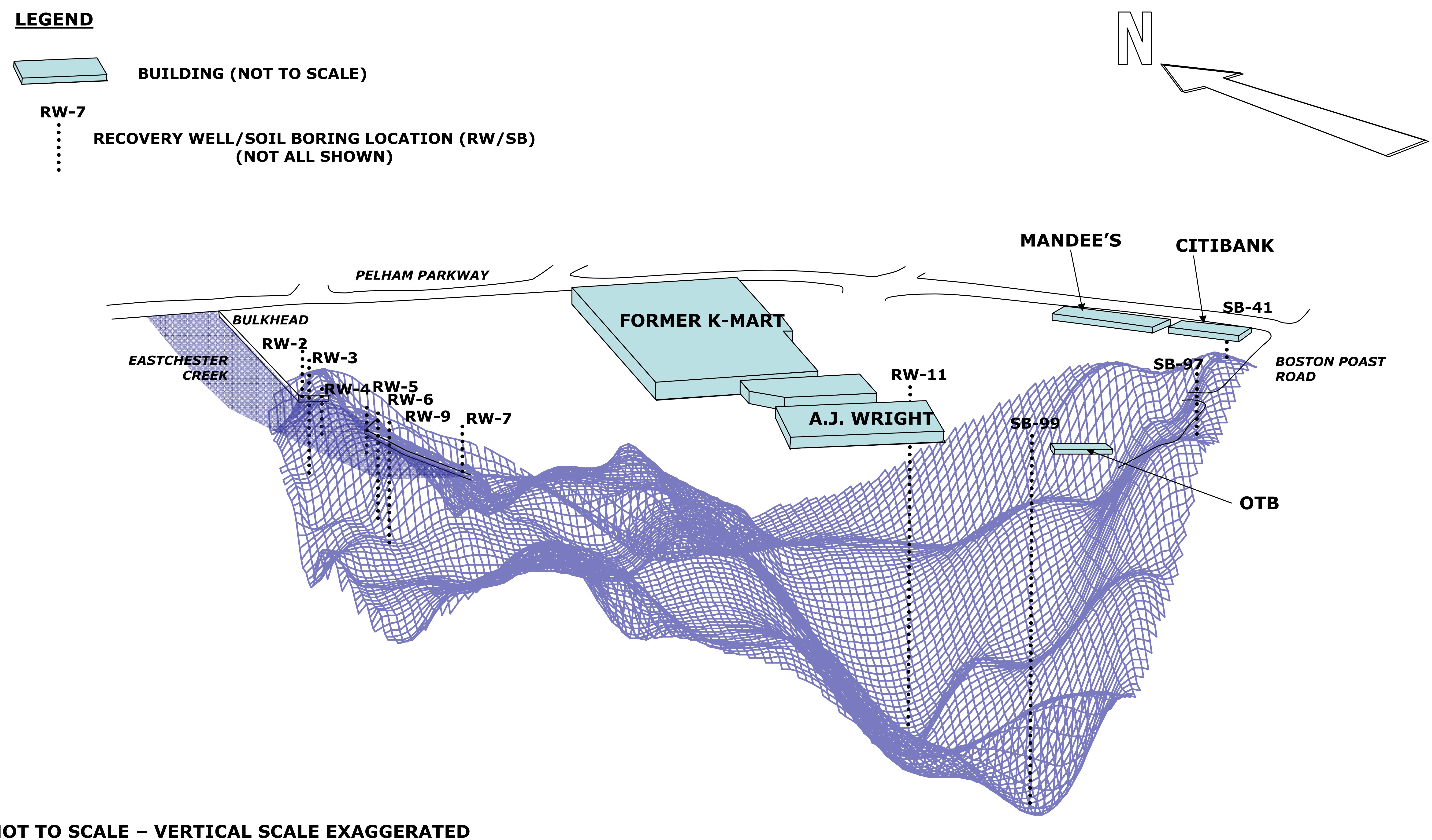
REMEDIAL ACTION WORK PLAN

EXTENT OF PEAT LAYER

DATE

FIGURE 1.5.1

CAD REF. NO. FIG 151



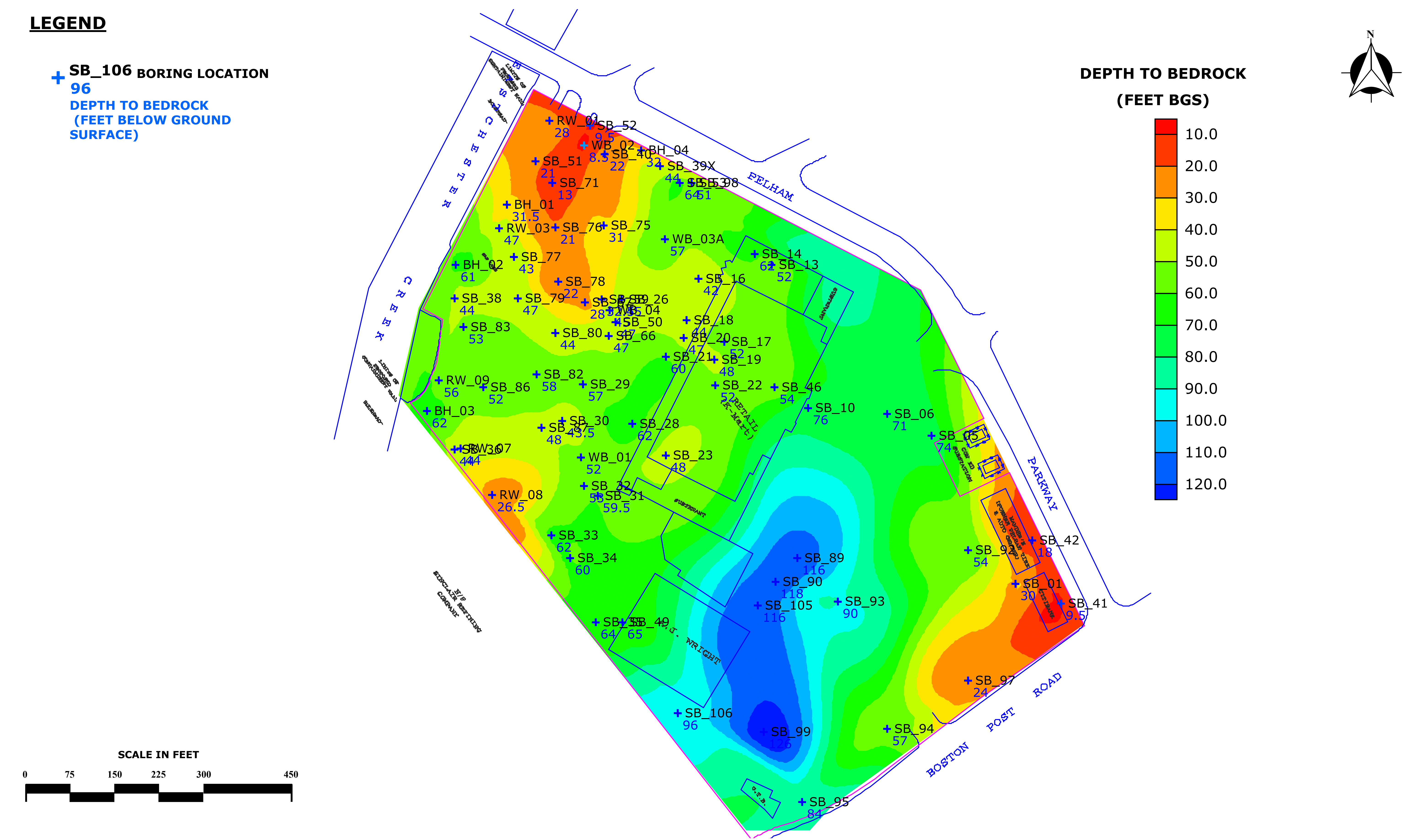
LOCATION: F:\PROJECT\4933001\FILE\3D_Bedrock.PPT

MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

BEDROCK SURFACE SCHEMATIC

FIGURE 1.5.2



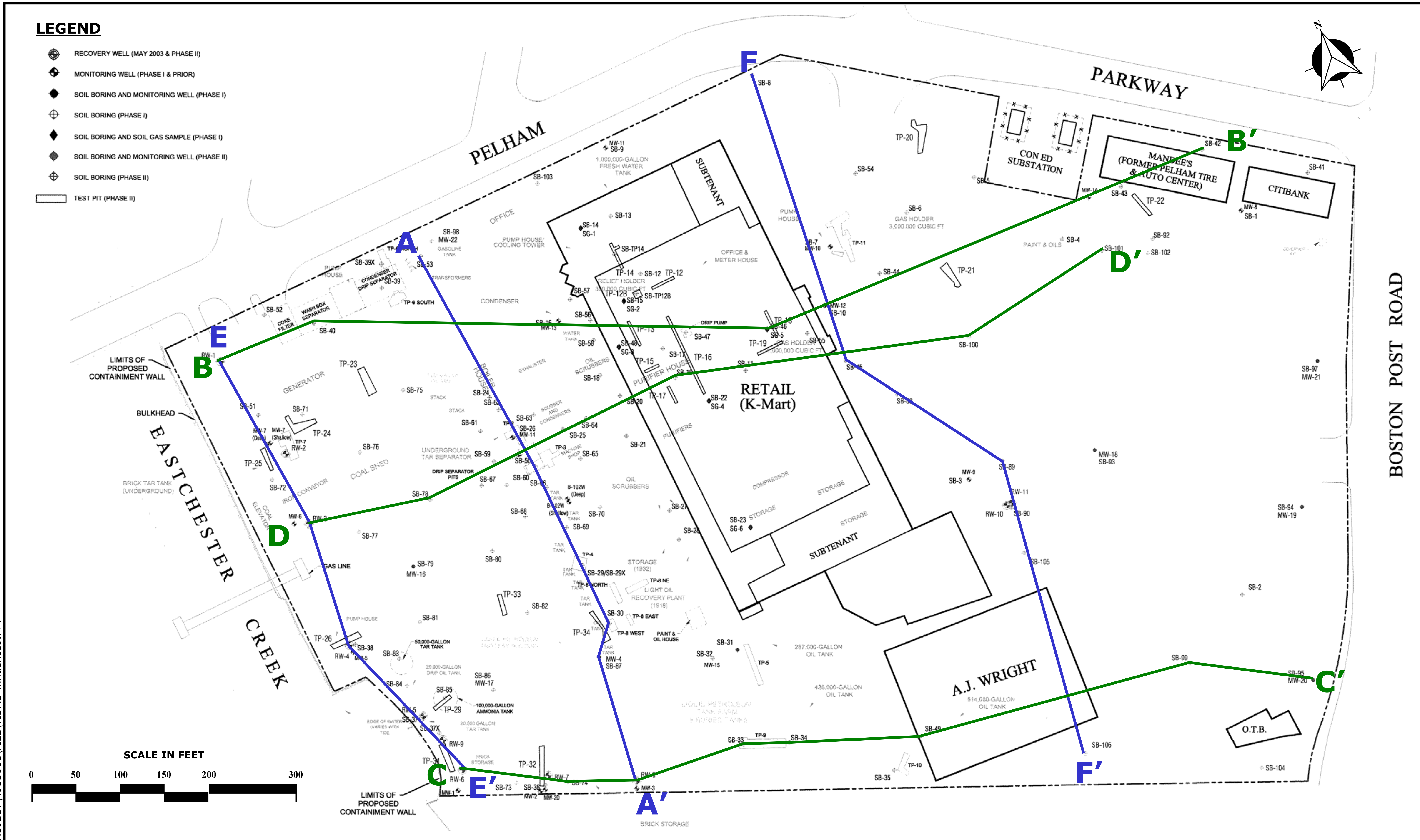
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

DEPTH TO BEDROCK FROM GROUND SURFACE

MALCOLM PIRNIE

FIGURE 1.5.3

LOCATION: F:\PROJECT\4933001\FILE\PPT FIGURES\BEDROCK_SURFACE.PPT



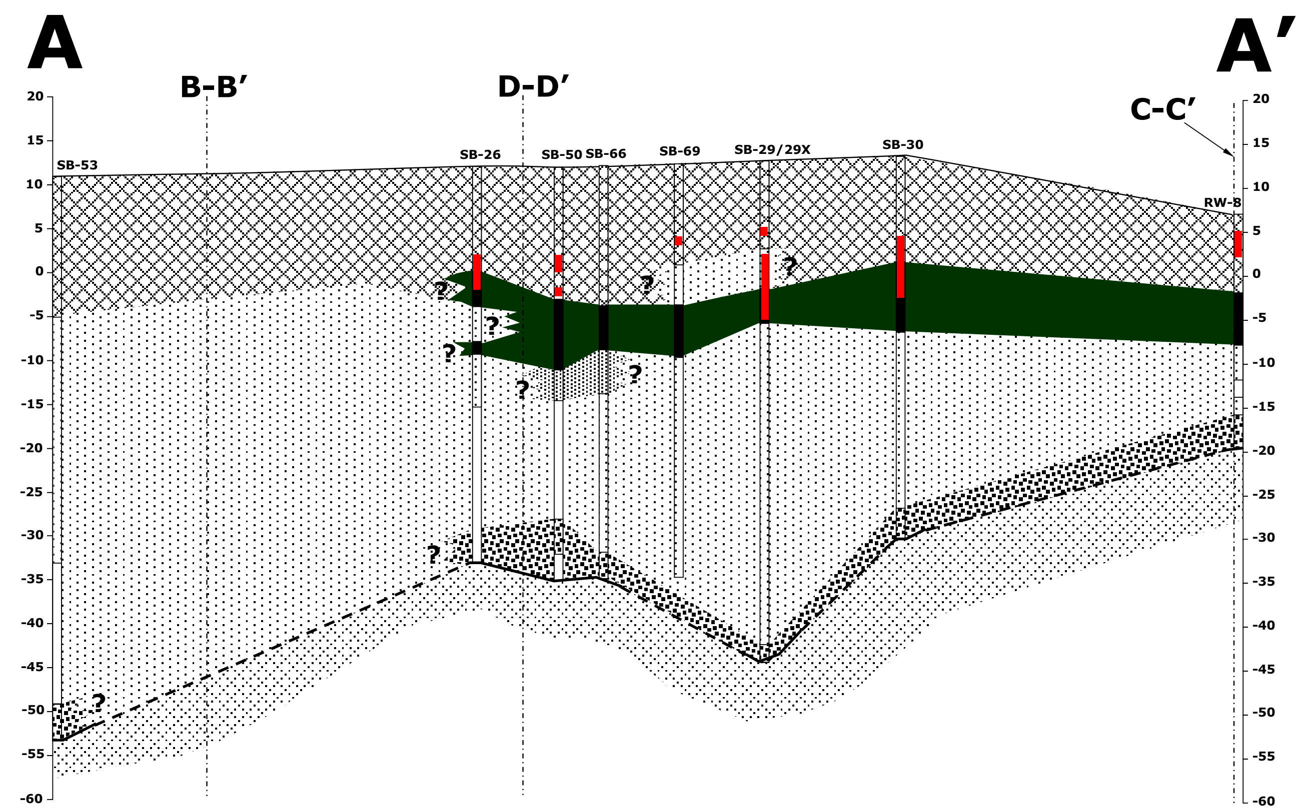
LOCATION: F:\PROJECT\4933001\FILE\TIDAL_influenced.PPT

MALCOLM PIRNIE

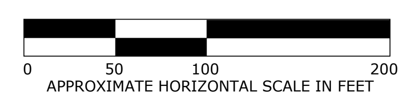
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

SITE PLAN AND CROSS SECTION LOCATIONS

FIGURE 1.5.4



CROSS SECTION A-A′



LEGEND

FILL MATERIAL (VARIED)

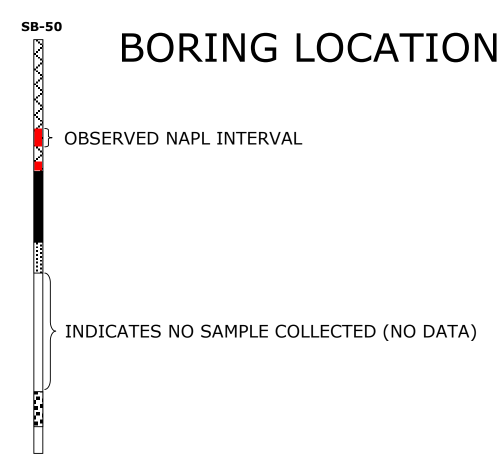
FINE TO COARSE SAND

SILTY SAND

PEAT

WEATHERED BEDROCK (SAND & GRAVEL)

BEDROCK



BORING LOCATION

BEDROCK SURFACE (DASHED WHERE INFERRED)

? INDICATES AREA OF INFERRED UNIT TRANSITION

VERTICAL ELEVATIONS IN FEET ABOVE/BELOW MEAN SEA LEVEL (MSL) BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

MALCOLM PIRNIE	PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	CROSS SECTION A-A′	FIGURE 1.5.5

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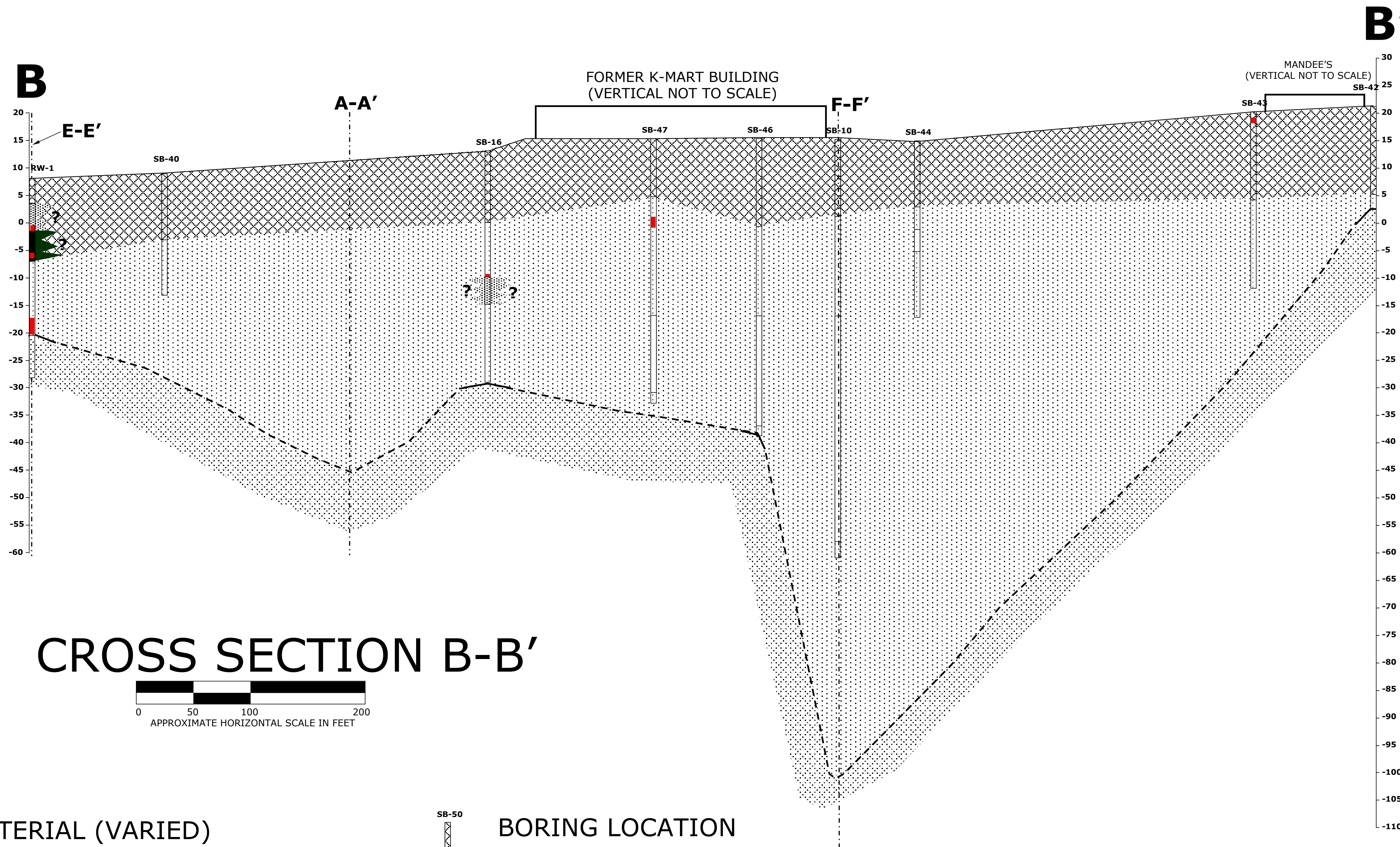

CROSS SECTION B-B′

LEGEND

- FILL MATERIAL (VARIED)
- FINE TO COARSE SAND
- SILTY SAND
- PEAT
- WEATHERED BEDROCK (SAND & GRAVEL)
- BEDROCK

SB-50 BORING LOCATION

OBSERVED NAPL INTERVAL

INDICATES NO SAMPLE COLLECTED (NO DATA)

BEDROCK SURFACE
(DASHED WHERE INFERRED)

? INDICATES AREA OF
INFERRED UNIT TRANSITION

VERTICAL ELEVATIONS IN FEET ABOVE/BELOW
MEAN SEA LEVEL (MSL)
BASED ON
NORTH AMERICAN VERTICAL DATUM OF 1988
(NAVD88)

MALCOLM PIRNIE		PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	CROSS SECTION B-B′	FIGURE 1.5.6

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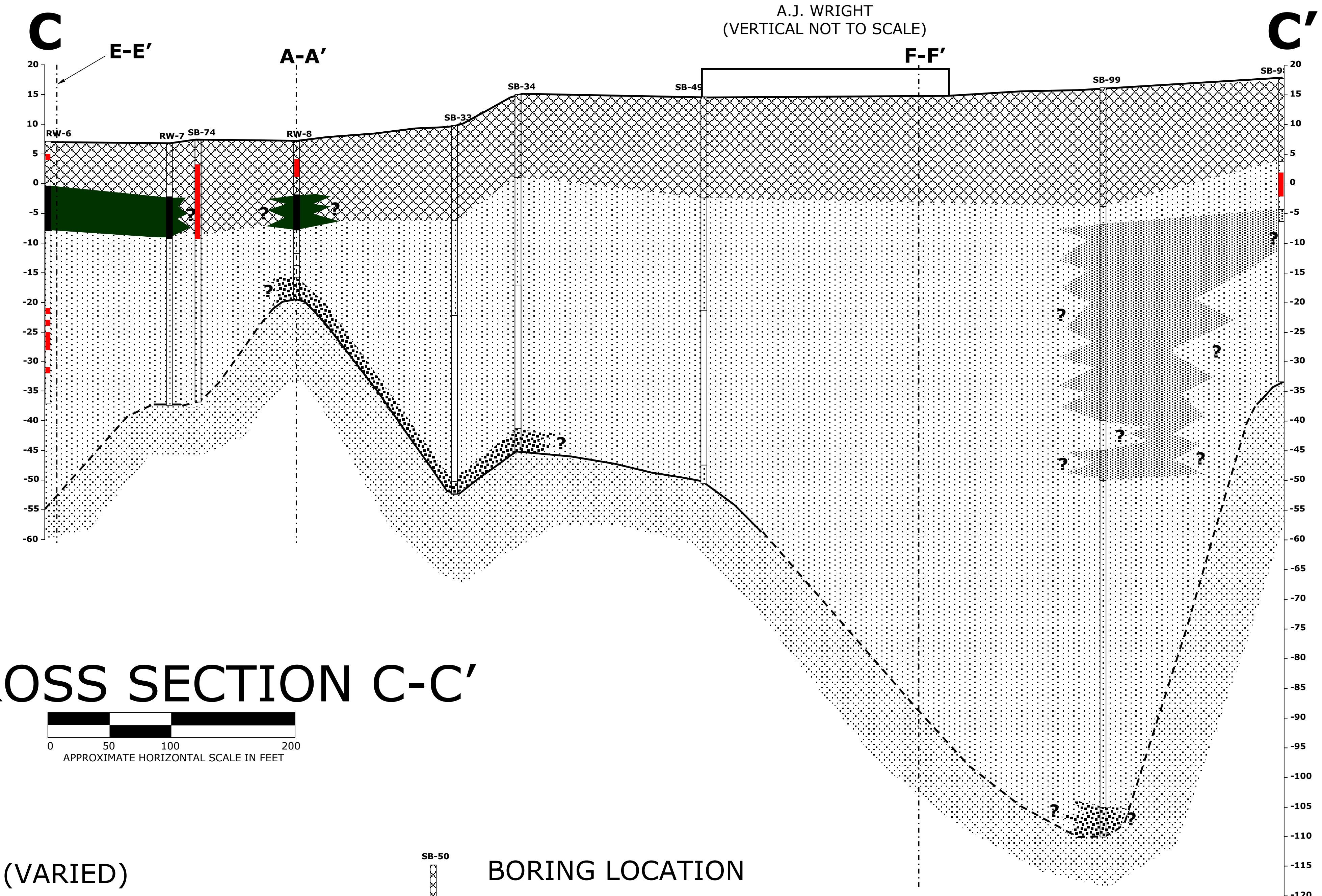

CROSS SECTION C-C'

0 50 100 200
APPROXIMATE HORIZONTAL SCALE IN FEET

LEGEND

FILL MATERIAL (VARIED)
FINE TO COARSE SAND
SILTY SAND
PEAT
WEATHERED BEDROCK (SAND & GRAVEL)
BEDROCK

SB-50 BORING LOCATION
OBSERVED NAPL INTERVAL
INDICATES NO SAMPLE COLLECTED (NO DATA)

BEDROCK SURFACE
(DASHED WHERE INFERRED)

? INDICATES AREA OF INFERRED UNIT TRANSITION

VERTICAL ELEVATIONS IN FEET ABOVE/BELOW MEAN SEA LEVEL (MSL)
BASED ON
NORTH AMERICAN VERTICAL DATUM OF 1988
(NAVD88)

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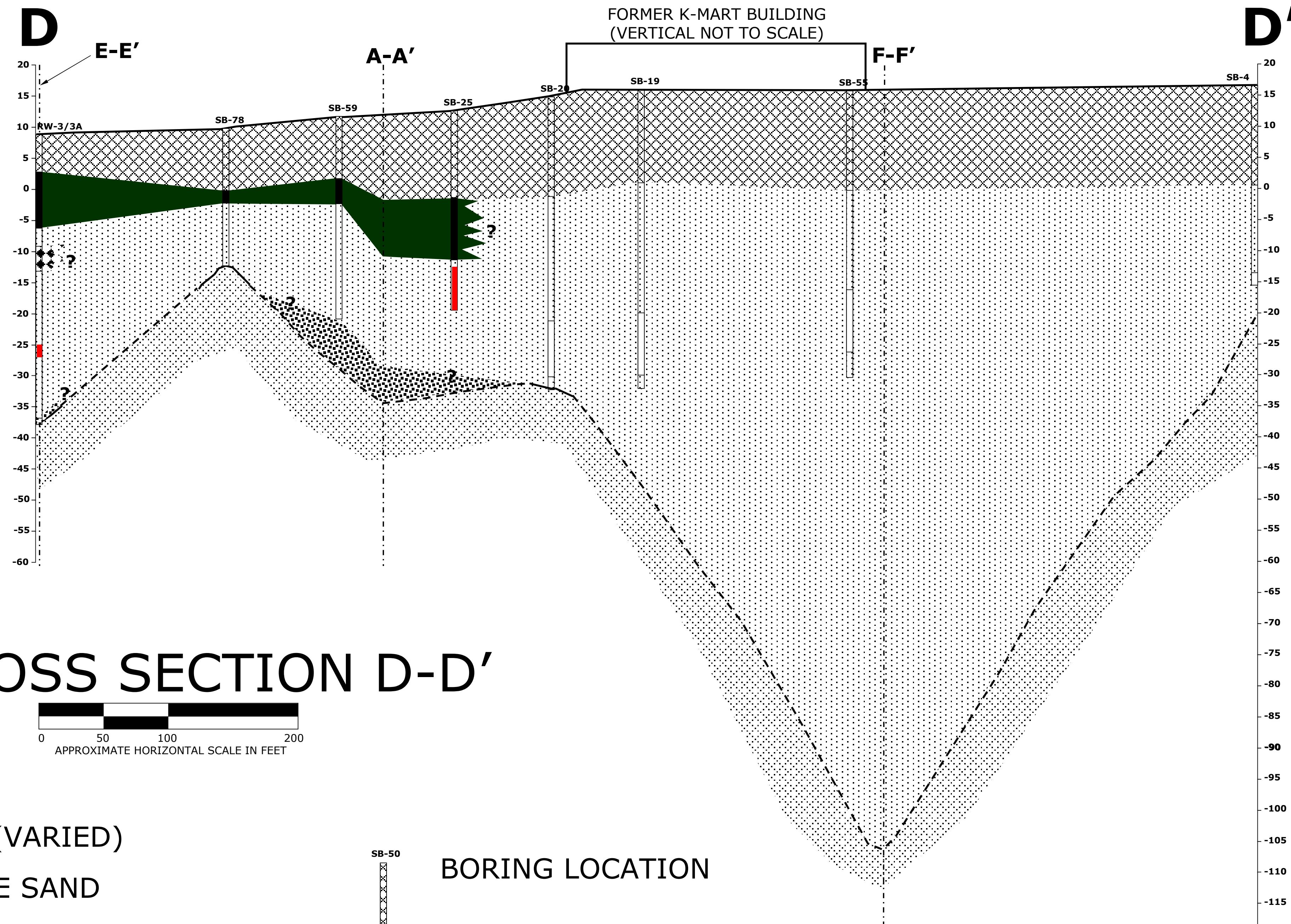
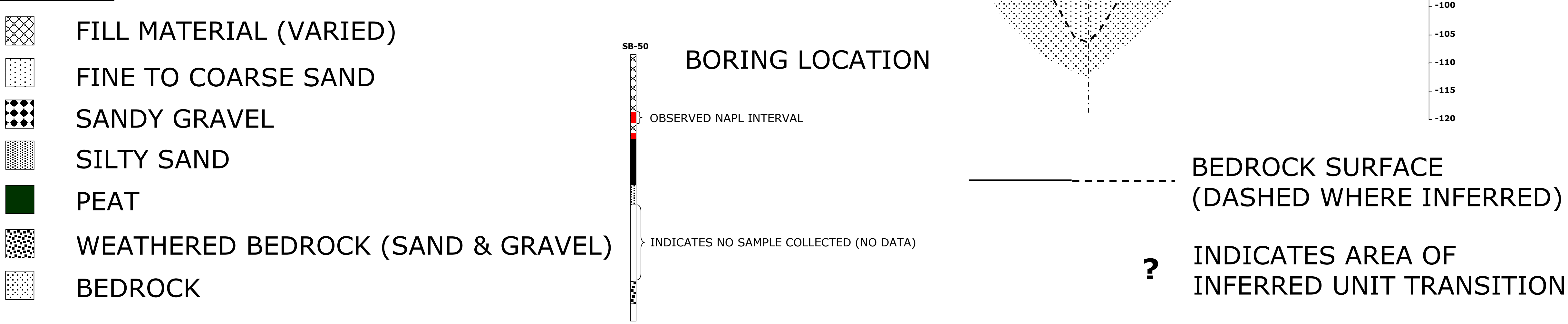
MALCOLM PIRNIE		PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	CROSS SECTION C-C'	FIGURE 1.5.7



LEGEND



VERTICAL ELEVATIONS IN FEET ABOVE/BELOW MEAN SEA LEVEL (MSL) BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

MALCOLM PIRNIE		PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	CROSS SECTION D-D′	FIGURE 1.5.8

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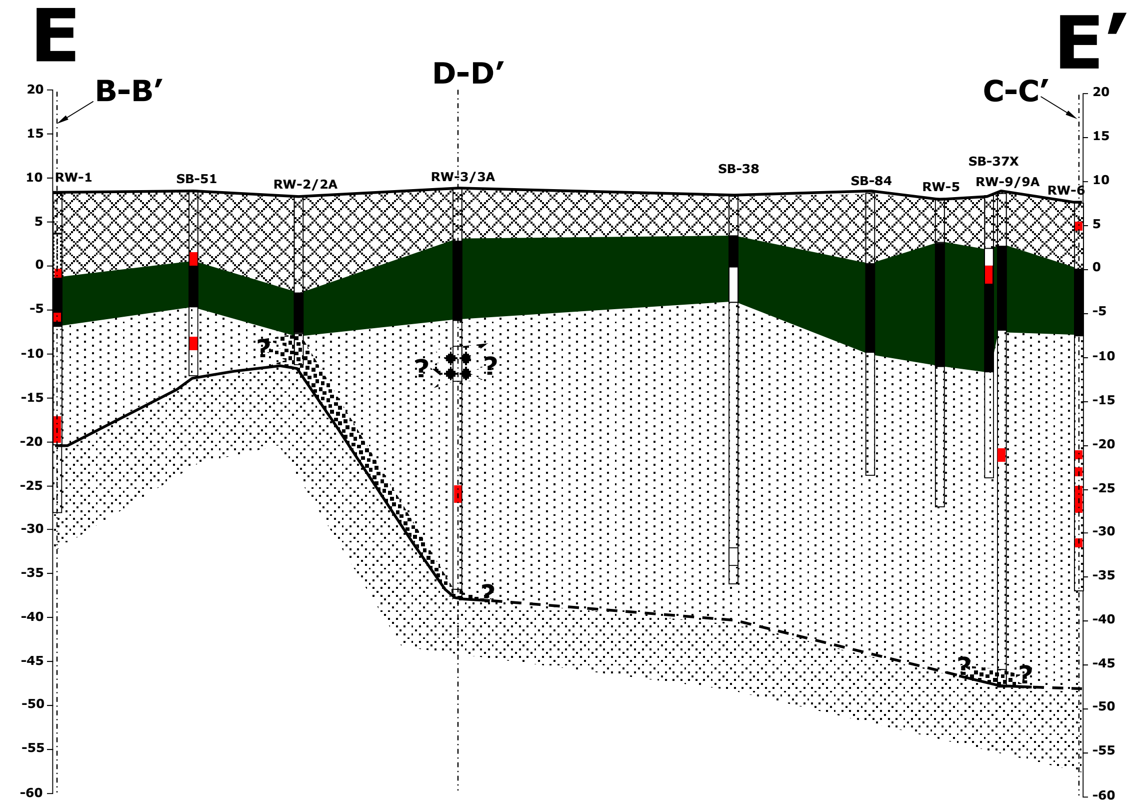


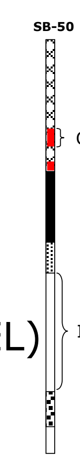
CROSS SECTION E-E′

0 50 100 200

APPROXIMATE HORIZONTAL SCALE IN FEET

LEGEND

- FILL MATERIAL (VARIED)
- FINE TO COARSE SAND
- SANDY GRAVEL
- SILTY SAND
- PEAT
- WEATHERED BEDROCK (SAND & GRAVEL)
- BEDROCK



BORING LOCATION

OBSERVED NAPL INTERVAL

INDICATES NO SAMPLE COLLECTED (NO DATA)

BEDROCK SURFACE (DASHED WHERE INFERRED)

? INDICATES AREA OF INFERRED UNIT TRANSITION

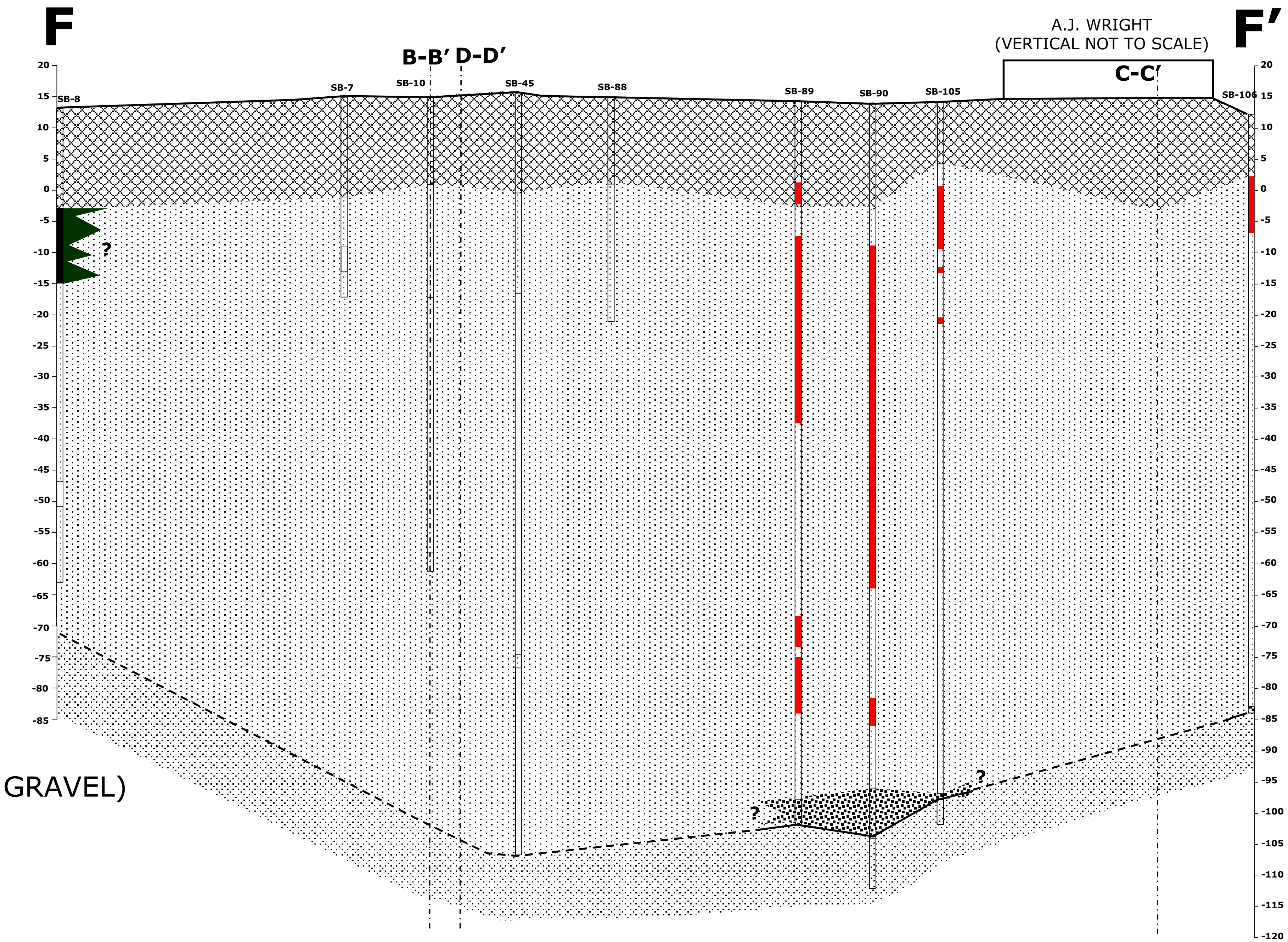
VERTICAL ELEVATIONS IN FEET ABOVE/BELOW MEAN SEA LEVEL (MSL) BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

F:\PROJECT\4933001\FILE\XSECTIONS.ppt

MALCOLM PIRNIE		PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	CROSS SECTION E-E′	FIGURE 1.5.9

CROSS SECTION F-F′

0 50 100 200
APPROXIMATE HORIZONTAL SCALE IN FEET



LEGEND

FILL MATERIAL (VARIED)

FINE TO COARSE SAND

SILTY SAND

PEAT

WEATHERED BEDROCK (SAND & GRAVEL)

BEDROCK

SB-50

BORING LOCATION

OBSERVED NAPL INTERVAL

INDICATES NO SAMPLE COLLECTED (NO DATA)

BEDROCK SURFACE
(DASHED WHERE INFERRED)

? INDICATES AREA OF
INFERRED UNIT TRANSITION

VERTICAL ELEVATIONS IN FEET ABOVE/BELOW
MEAN SEA LEVEL (MSL)
BASED ON
NORTH AMERICAN VERTICAL DATUM OF 1988
(NAVD88)

F:\PROJECT\4933001\FILE\SECTIONS.ppt

MALCOLM PIRNIE

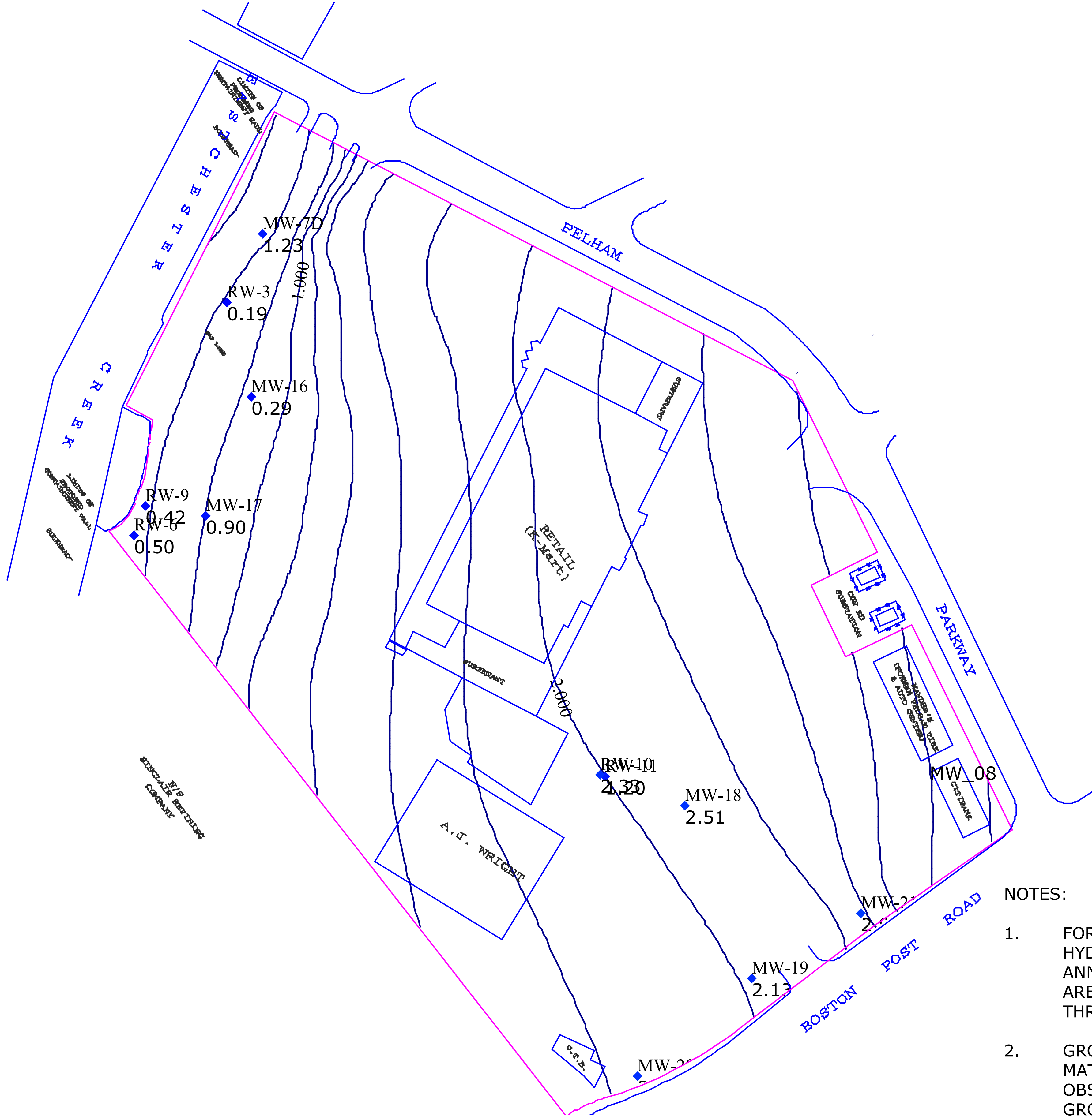
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

CROSS SECTION F-F′

FIGURE 1.5.10

LEGEND

RW_03 **WELL LOCATION**
0.19
GROUNDWATER ELEVATION
(FEET ABOVE/BELOW MEAN SEA LEVEL)



SCALE IN FEET

0 75 150 225 300 450

NOTES:

1. FOR PURPOSES OF PORTRAYING GENERALIZED HYDRAULIC GRADIENT AND FLOW DIRECTION, ANNUAL AVERAGE GROUNDWATER VALUES ARE GIVEN FROM READINGS TAKEN THROUGHOUT THE YEAR.
2. GROUNDWATER ISOCONTOURS ARE BASED ON MATHEMATICAL INTERPOLATIONS OF OBSERVED AND CALCULATED ANNUAL GROUNDWATER ELEVATIONS.

LOCATION: F:\PROJECT\4933001\FILE\BR_SFC1.PPT

MALCOLM PIRNIE

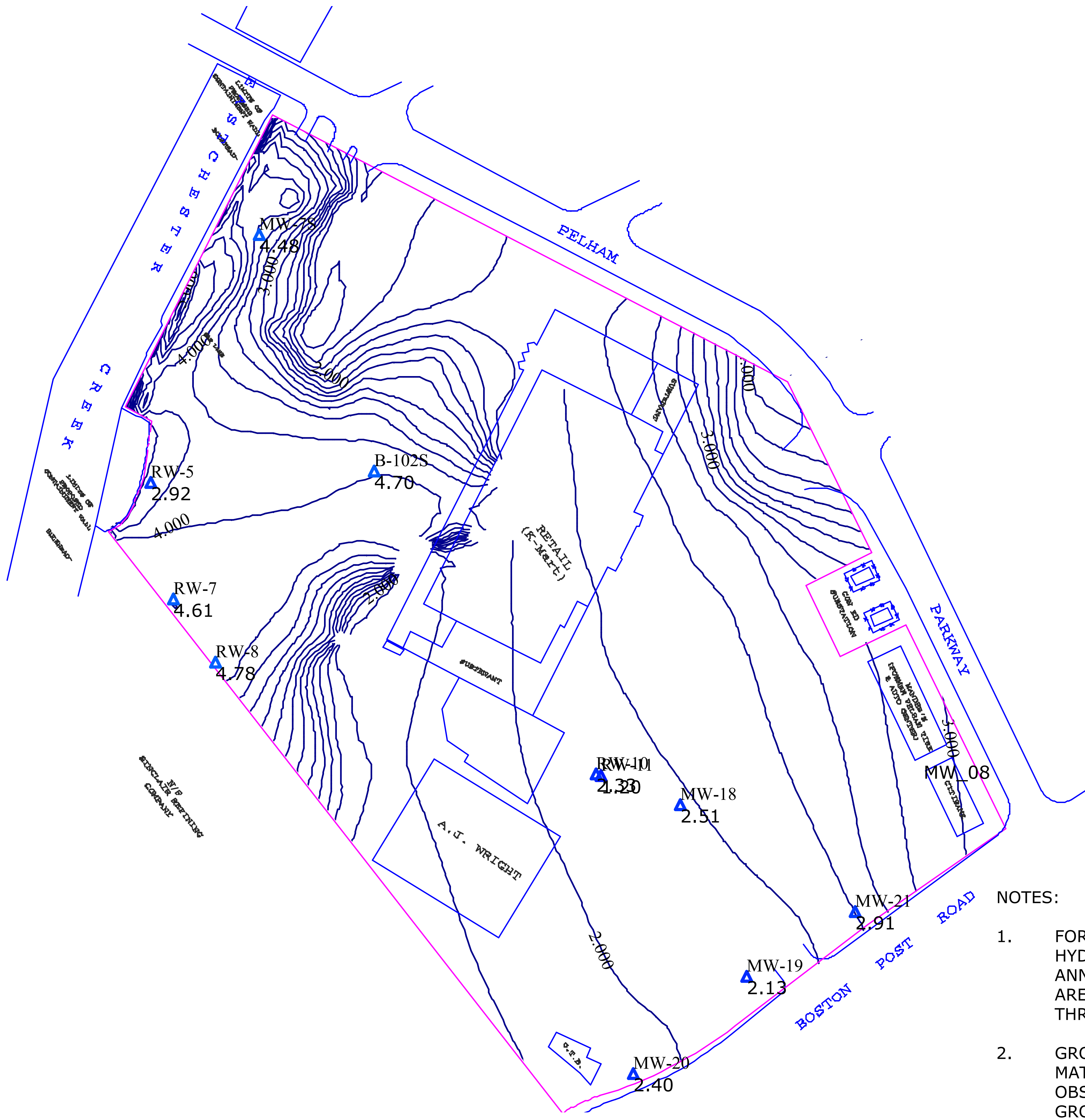
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

DEEP ZONE GROUNDWATER ELEVATION (ANNUAL AVERAGE)

FIGURE 1.5.11

LEGEND

RW_05 **WELL LOCATION**
2.92
GROUNDWATER ELEVATION
(FEET ABOVE/BELOW MEAN SEA LEVEL)



SCALE IN FEET
0 75 150 225 300 450

NOTES:

1. FOR PURPOSES OF PORTRAYING GENERALIZED HYDRAULIC GRADIENT AND FLOW DIRECTION, ANNUAL AVERAGE GROUNDWATER VALUES ARE GIVEN FROM READINGS TAKEN THROUGHOUT THE YEAR.

2. GROUNDWATER ISOCONTOURS ARE BASED ON MATHEMATICAL INTERPOLATIONS OF OBSERVED AND CALCULATED ANNUAL GROUNDWATER ELEVATIONS.

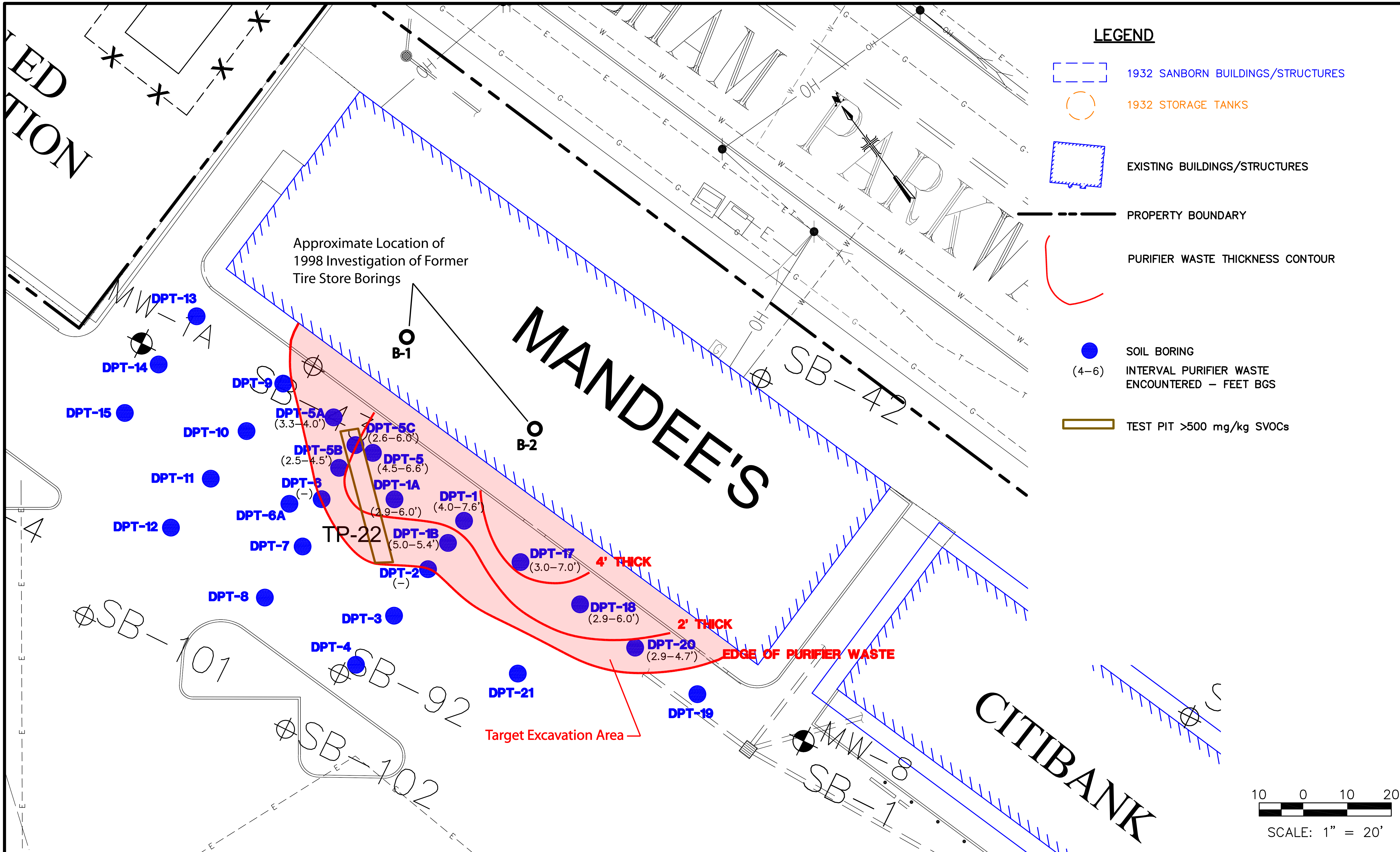
LOCATION: F:\PROJECT\4933001\FILE\BR_SFC1.PPT

MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

SHALLOW ZONE GROUNDWATER ELEVATION (ANNUAL AVERAGE)

FIGURE 1.5.12



MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

EXTENT OF PURIFIER WASTE

Figure 1.5.13

XREFS: I:\4933001\wells.dwg I:\4933001\MPI SITE.dwg IMAGES: None
User: NEMICKAS Spec: PIRNIE STANDARD File: I:\4933001\AREA-E-IRM-FIG1.DWG Scale: 1:1 Date: 04/15/2005 Time: 12:13 Layout: Layout1

MALCOLM PIRNIE	REVISIONS (NO. / BY / DATE / REMARKS)	DES AB DWN MDM CKD XXX	PELHAM PLAZA SITE PELHAM MANOR, NEW YORK REMEDIAL ACTION WORK PLAN	PROPOSED SOIL EXCAVATION AREAS SCALE: 1"=60'	COPYRIGHT © 2004 MALCOLM PIRNIE, INC. DATE FIGURE 3.1.1 CAD REF. NO. FIG 311

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES AB
DWN MDM
CKD XXX

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

FORMER MGP STRUCTURES AND PROPOSED SOIL EXCAVATION AREAS

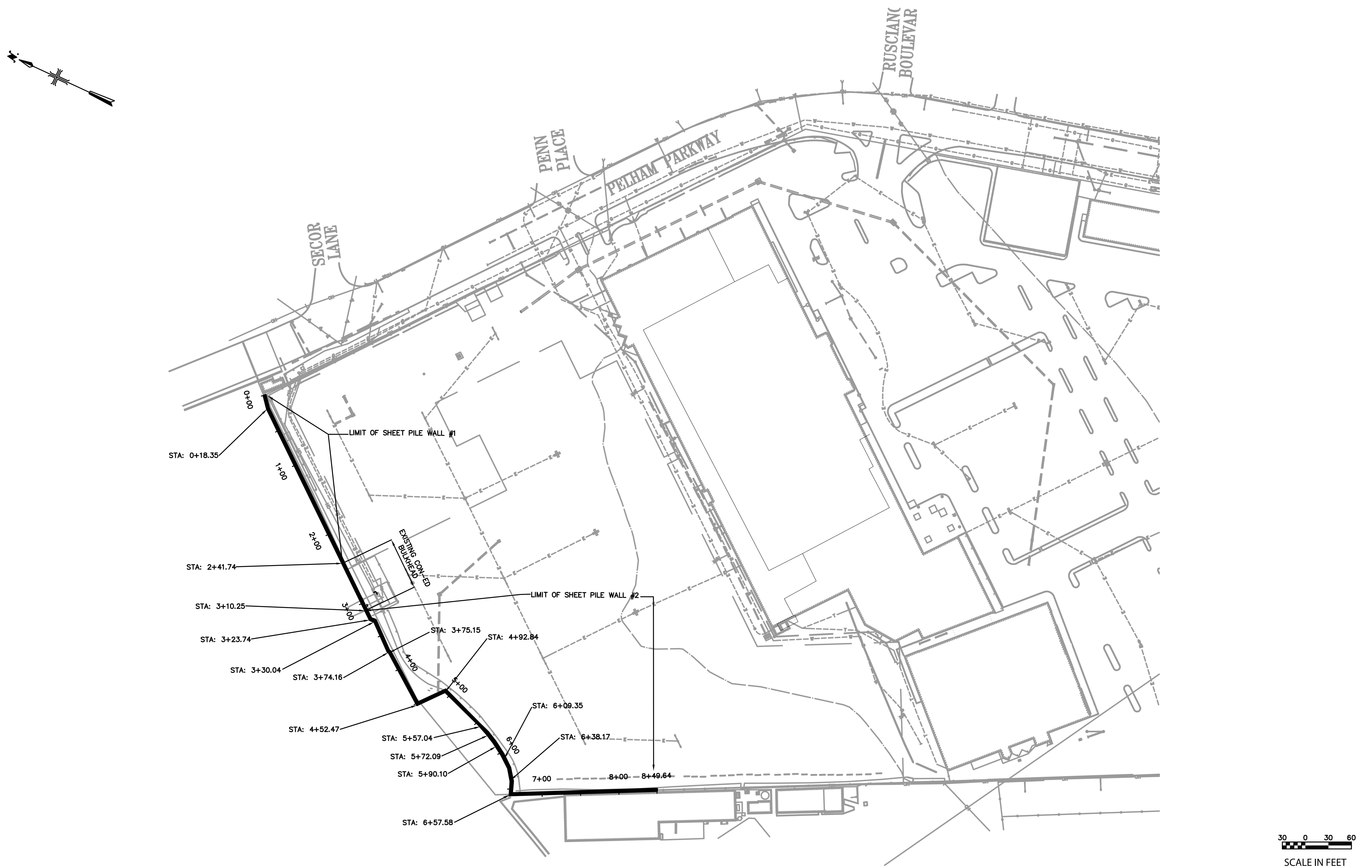
SCALE: 1"=60'

DATE

FIGURE 3.1.2

CAD REF. NO. FIG 312

XREFS: I:\4933001\wells.dwg I:\4933001\MPI SITE.dwg I:\4933001\FRAME.dwg IMAGES: None
User: NEMICKAS Spec: PIRNIE STANDARD File: I:\4933001\FIG 3-1-2ANREV.DWG Scale: 1:1 Date: 10/26/2005 Time: 12:14 Layout: Layout1



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User:ROBINSONT Spec:PIRNIE STANDARD? File:I:\4933001\FIG 3-2-1.DWG Scale:1:1 Date:08/26/2004 Time:10:52 Layout:Layout1

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES AB
DWN MDM
CKD XXX

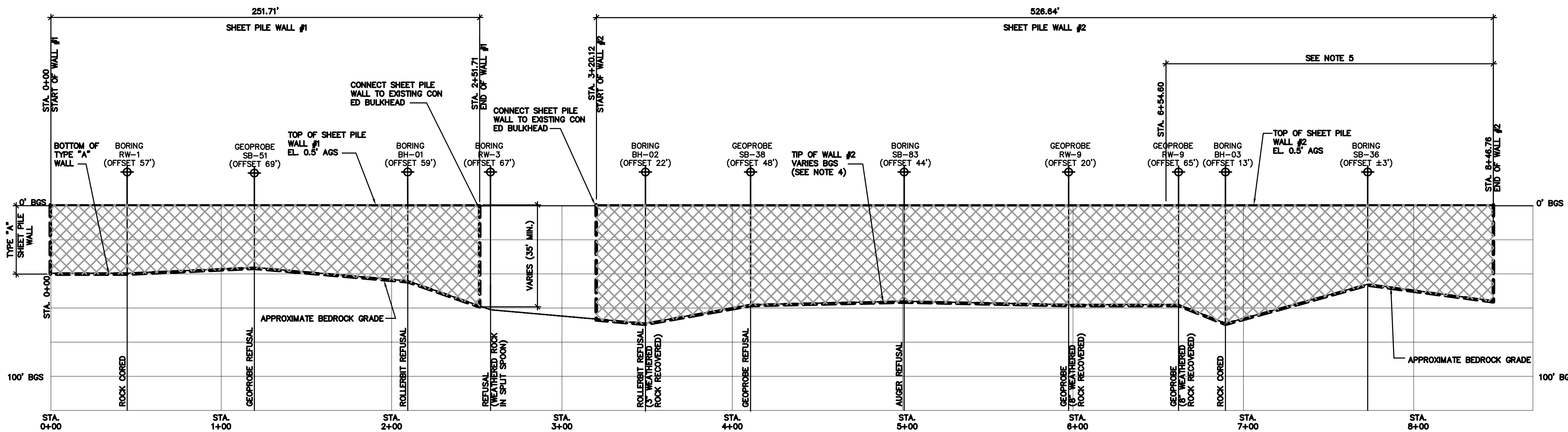
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

HYDRAULIC BARRIER SITE PLAN

DATE

FIGURE 3.2.1

CAD REF. NO. FIG 321



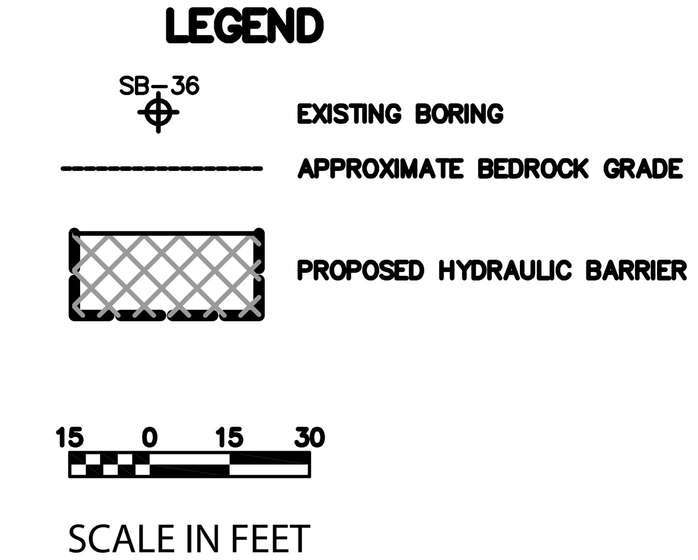
SHEET PILE WALL #1

STA. 0+00 TO STA. 2+51.71

SHEET PILE WALL #2

STA. 3+20.12 TO STA. 8+46.76

LEGEND



MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES KP/EL
DWN MDM
CKD XXX

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

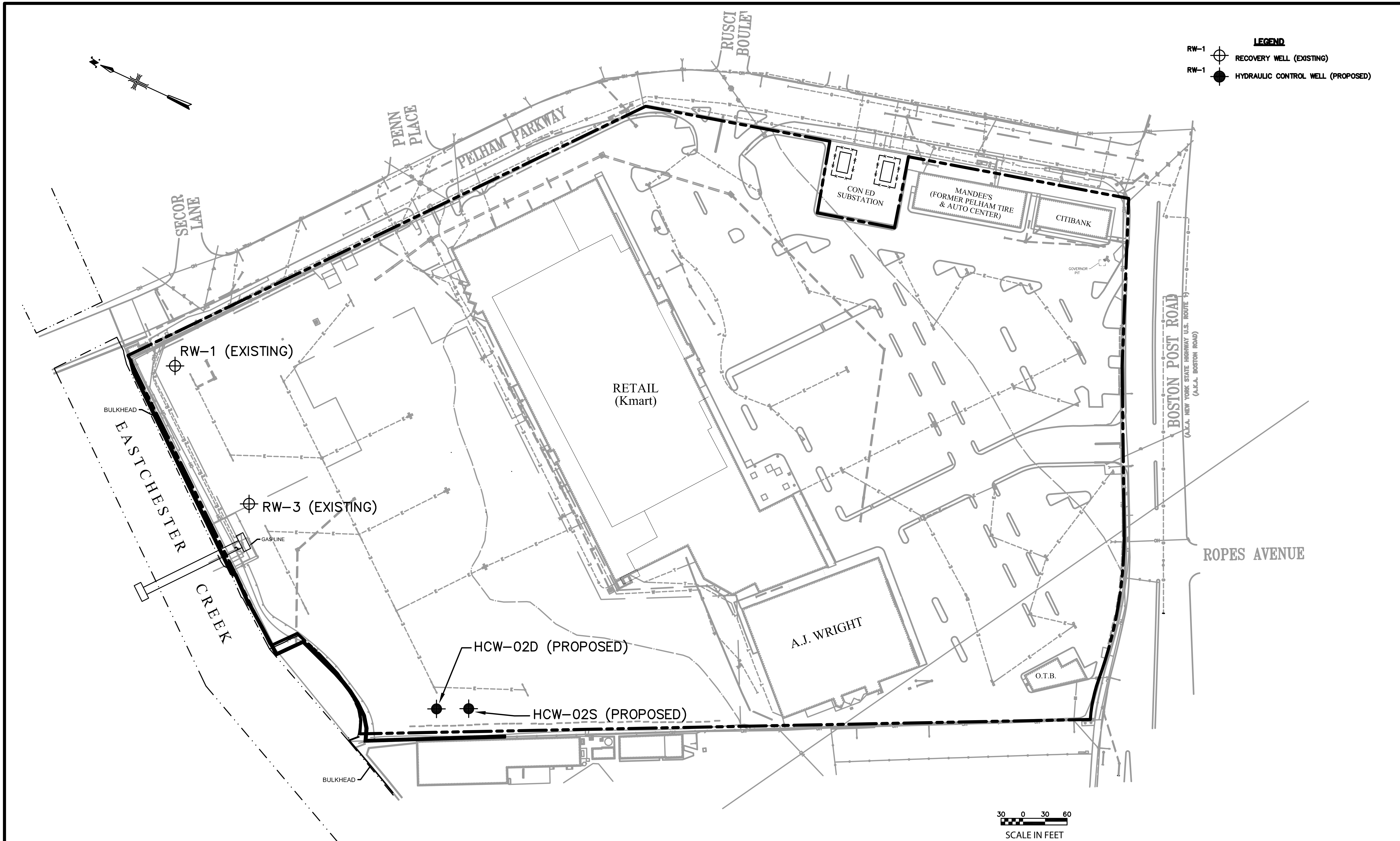
HYDRAULIC BARRIER PROFILE

DATE

FIGURE 3.2.2

CAD REF. NO. FIG 322

XREFS: G:\Robinson\Pelham\FRAME.dwg IMAGES:None
User:ROBINSONT Spec:PIRNIE STANDARD? File:I:\4933001\FIG 3-2-2.DWG Scale:1:1 Date:08/26/2004 Time:10:53 Layout:Layout1



MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES TAM
DWN MDM
CKD XXX

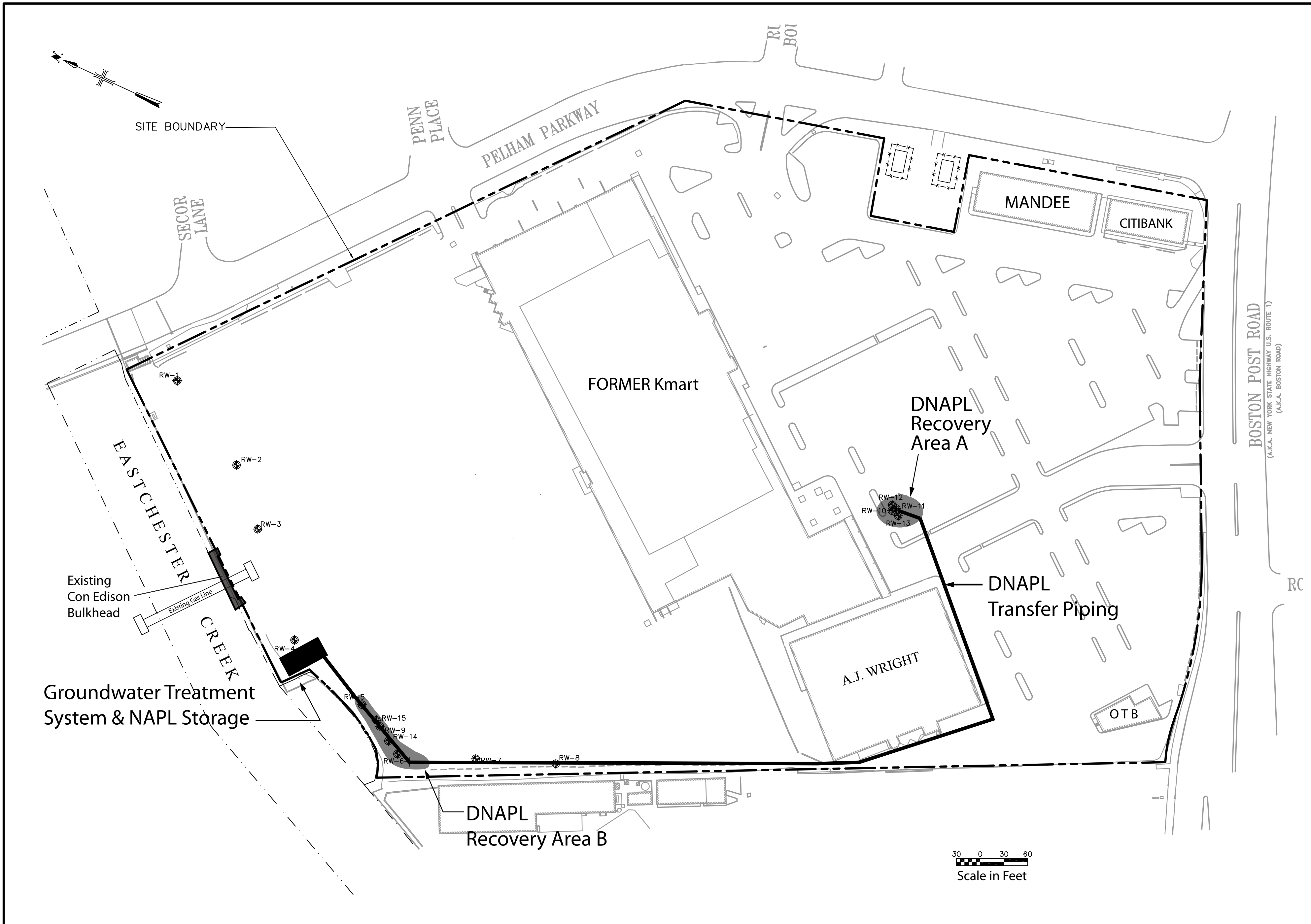
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

PROPOSED HYDRAULIC CONTROL SYSTEM

DATE ______

FIGURE 3.2.3

CAD REF. NO. FIG 323



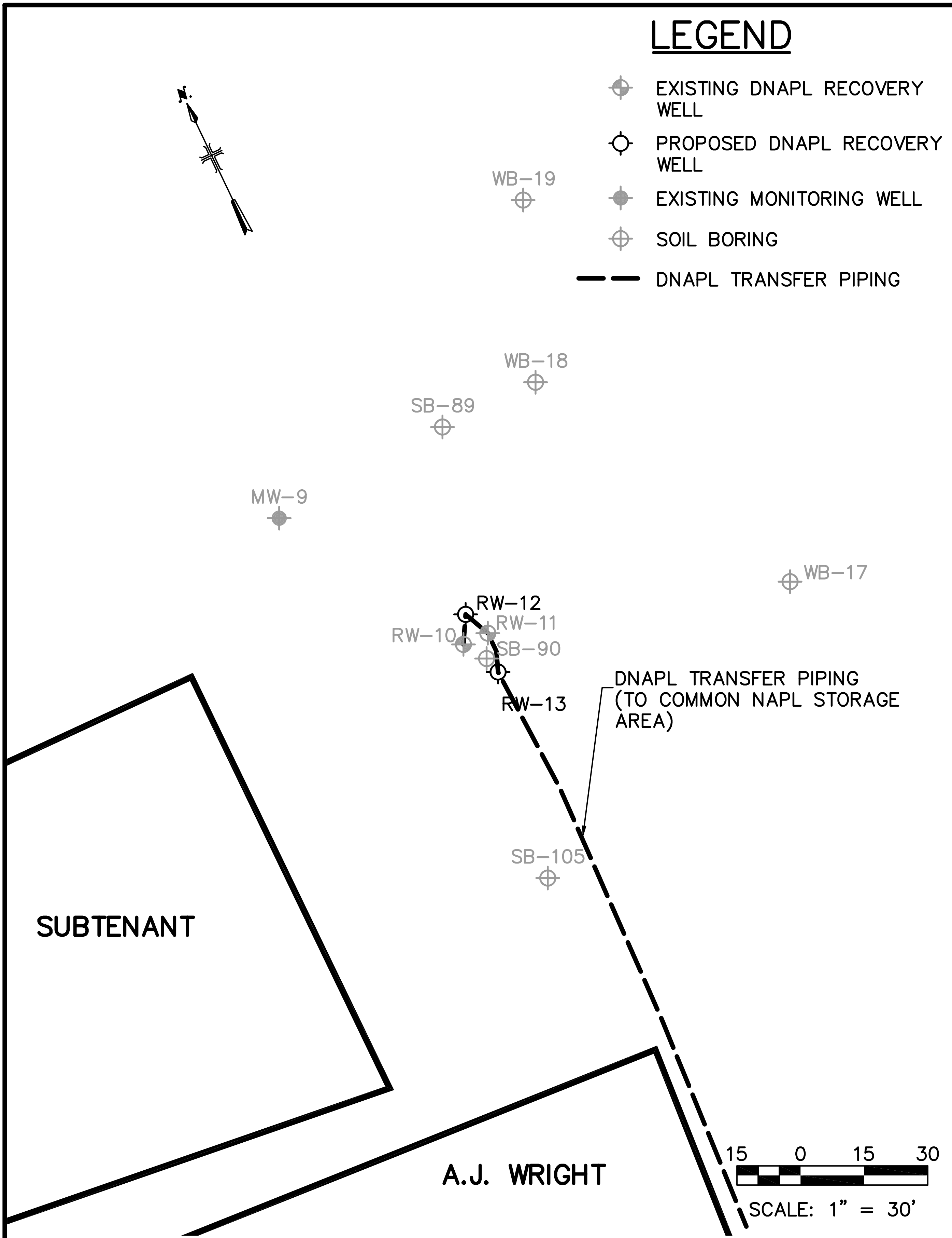
MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK
REMEDIAL ACTION WORK PLAN

PROPOSED DNAPL RECOVERY SYSTEM LAYOUT

FIGURE 3.2.4

CAD REF. NO. NNJ/P:/4933001/RAWP/FIGURES

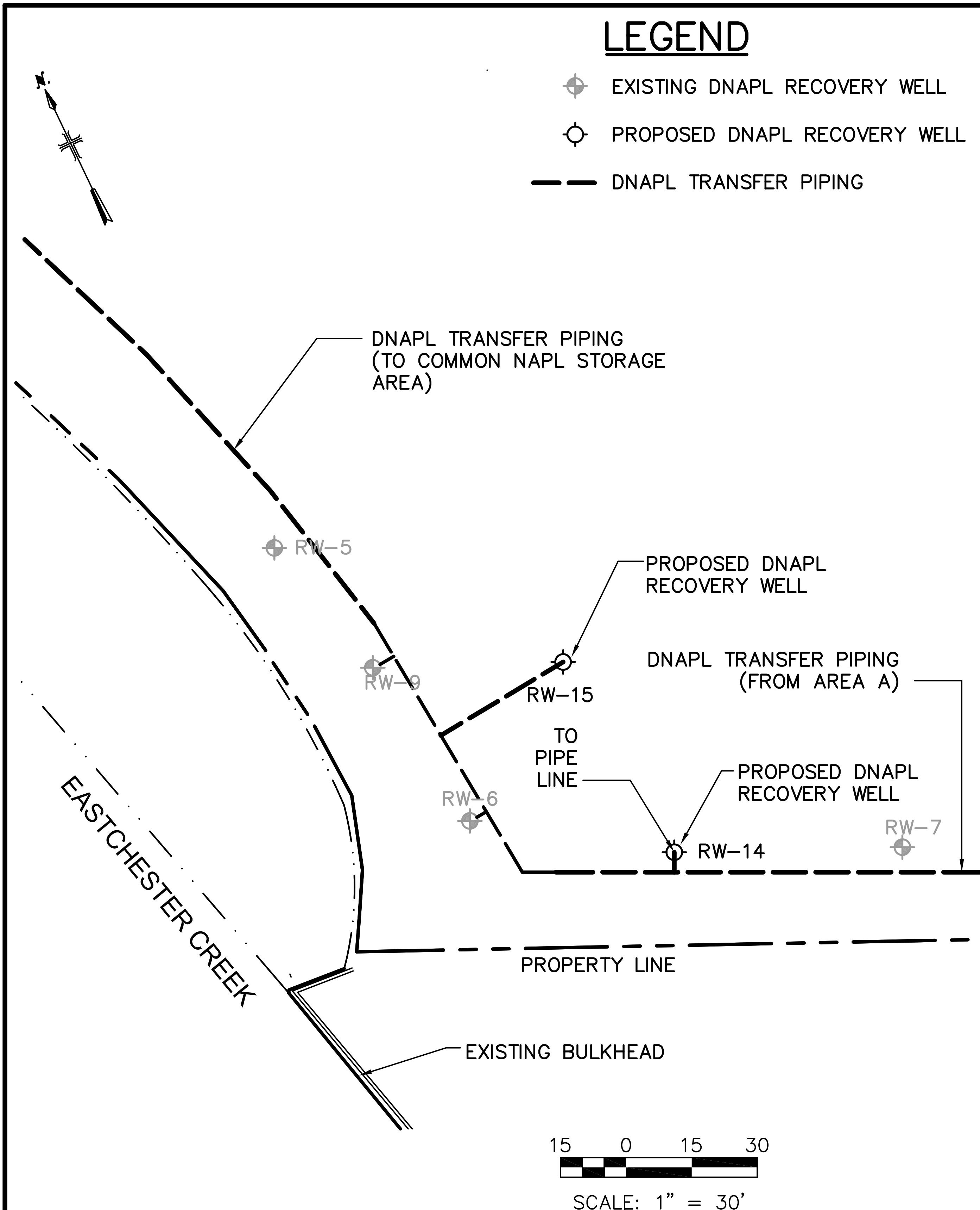


MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

PROPOSED DNAPL RECOVERY AREA A

FIGURE 3.2.5



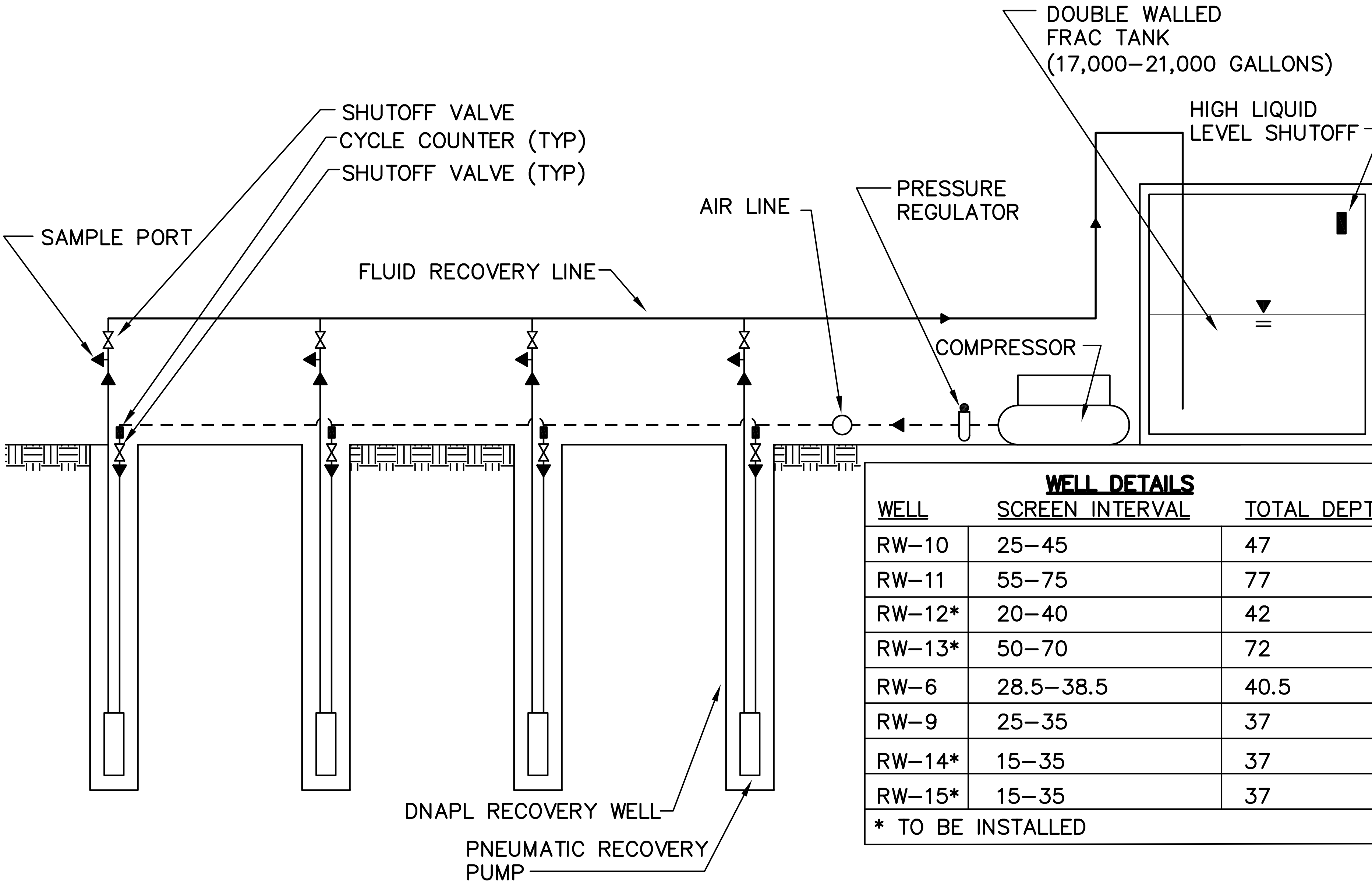
XREFS: IMAGES: None
User: ROBINSONT Spec: PIRNIE STANDARD? File: W:\4933001\FIG 3-2-6REVTR.DWG Scale: 1:1 Date: 08/22/2005 Time: 12:26 Layout: Layout2

MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

PROPOSED DNAPL RECOVERY AREA B

FIGURE 3.2.6



WELL DETAILS

WELL	SCREEN INTERVAL	TOTAL DEPTH
RW–10	25–45	47
RW–11	55–75	77
RW–12*	20–40	42
RW–13*	50–70	72
RW–6	28.5–38.5	40.5
RW–9	25–35	37
RW–14*	15–35	37
RW–15*	15–35	37

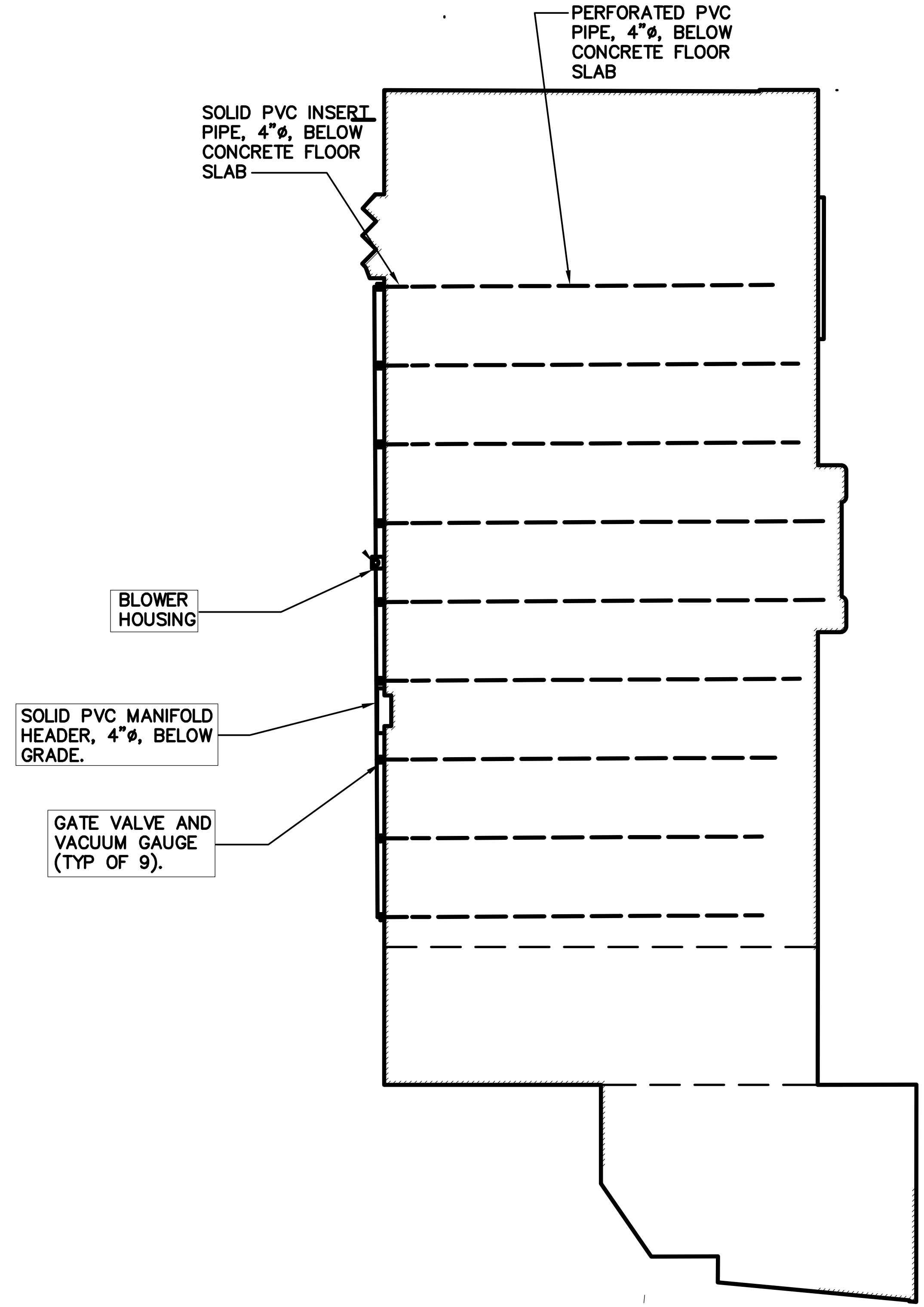
* TO BE INSTALLED

MALCOLM PIRNIE

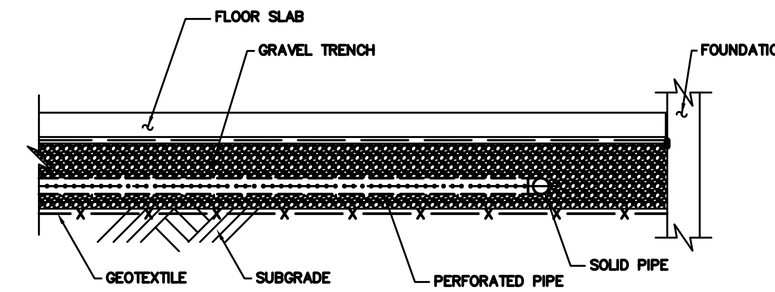
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

DNAPL PILOT RECOVERY SYSTEM SCHEMATIC

FIGURE 3.2.7

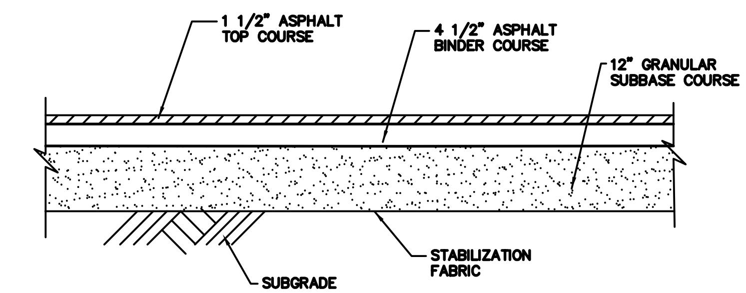


SUB-SLAB VAPOR EXTRACTION SYSTEM SCHEMATIC



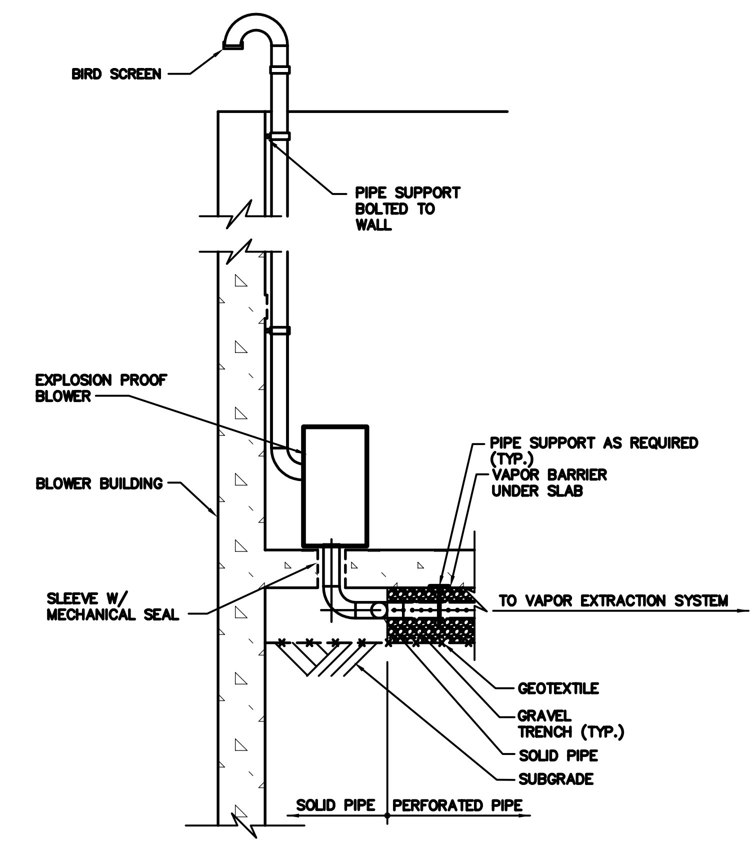
FLOOR SLAB DETAIL

NOT TO SCALE



ASPHALT PARKING LOT PAVEMENT DETAIL

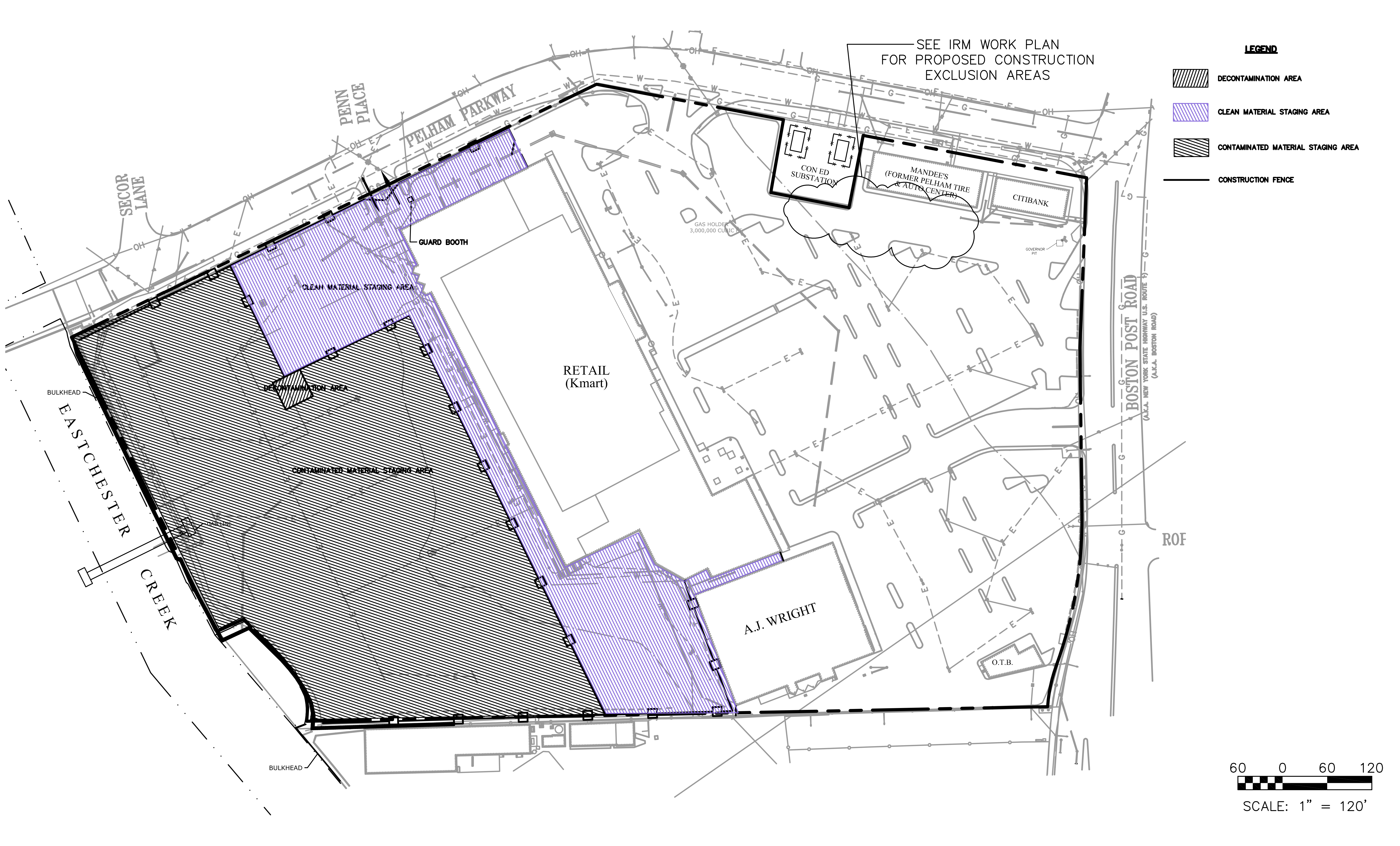
NOT TO SCALE



BLOWER SYSTEM DETAIL

NOT TO SCALE

MALCOLM PIRNIE	PELHAM PLAZA SITE PELHAM MANOR, NEW YORK	SUB-SLAB VAPOR EXTRACTION SYSTEM CONCEPTUAL DESIGN	FIGURE 3.2.8



MALCOLM PIRNIE

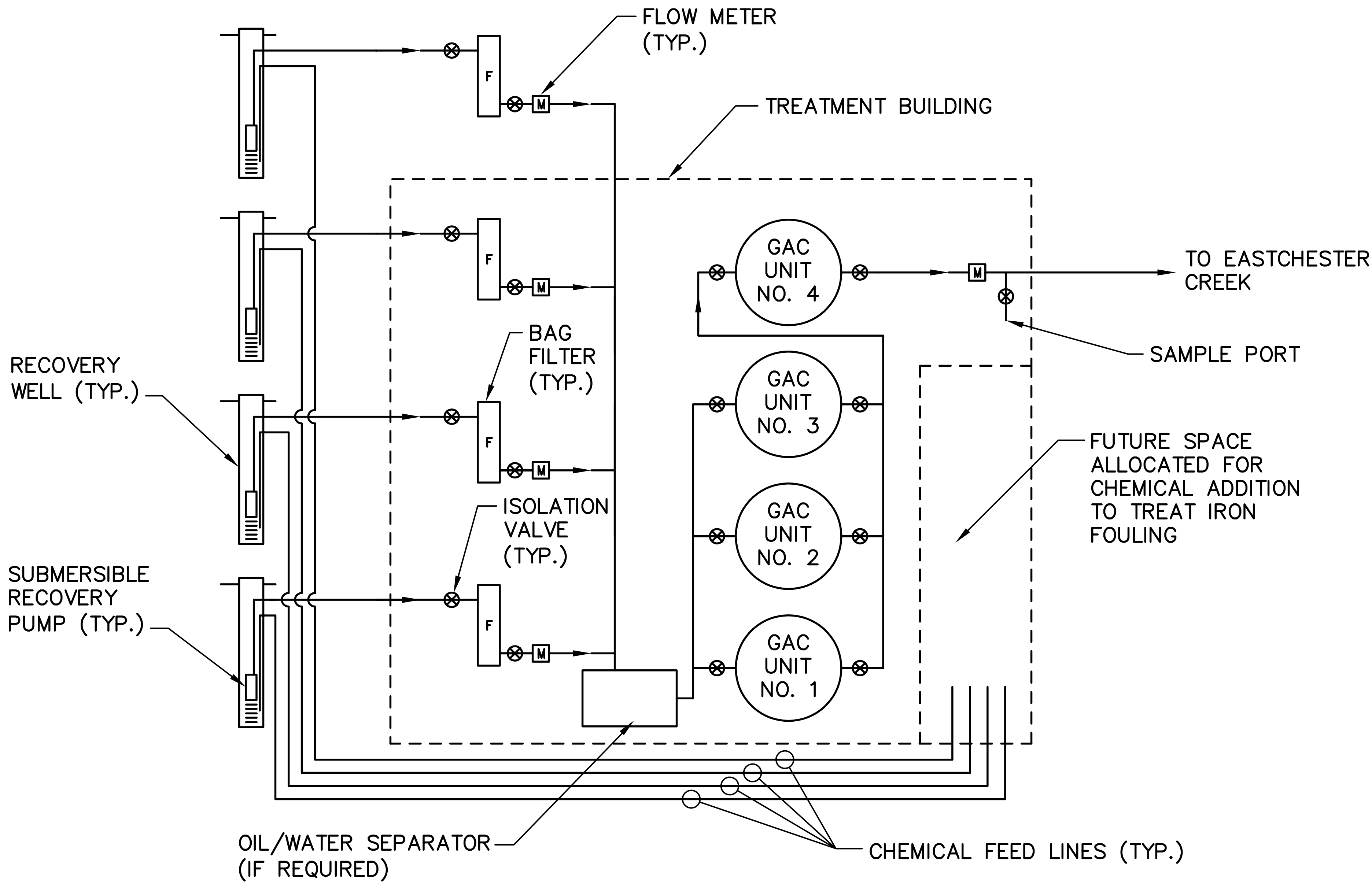
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

REMEDIAL ACTION WORK PLAN

SECURITY, TRAFFIC CONTROL, AND PROPOSED CONSTRUCTION EXCLUSION AREA

MALCOLM PIRNIE, INC.

FIGURE 5.2.1



MALCOLM PIRNIE

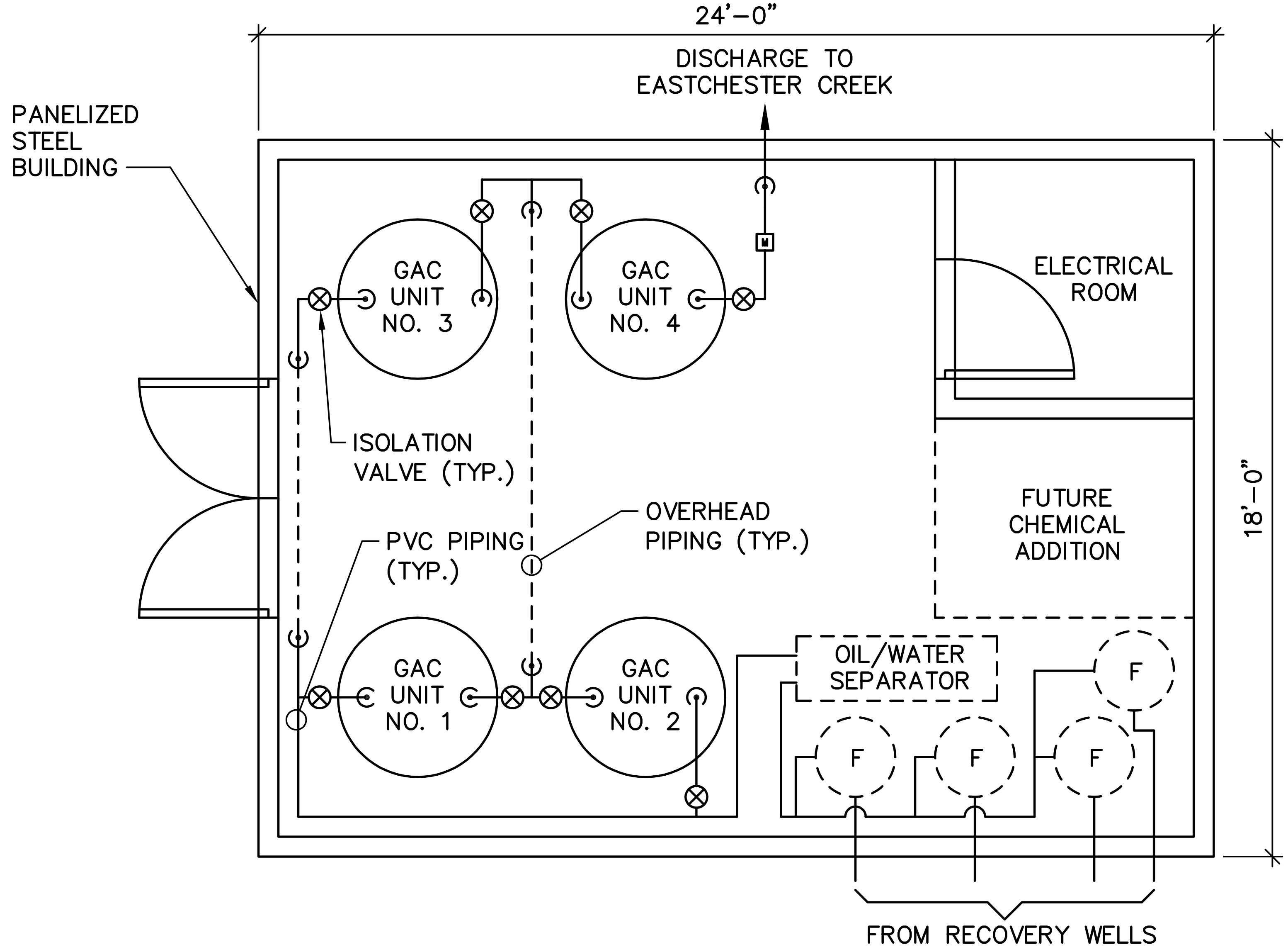
PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

PROCESS FLOW DIAGRAM

FIGURE 5.7.1

XREFS: IMAGES: None

User: NEMICKAS Spec: PIRNIE STANDARD File: I:\4933001\FIG 5-7-2REV.DWG Scale: 1:1 Date: 10/27/2005 Time: 11:09 Layout: Layout1



SCALE: 1/4"=1'-0"

MALCOLM PIRNIE

PELHAM PLAZA SITE
PELHAM MANOR, NEW YORK

PROPOSED TREATMENT BUILDING

FIGURE 5.7.2

TABLES

TABLE 7.1
LABORATORY ANALYTICAL METHODS FOR FIELD SAMPLES
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Matrix	Parameter	Analytical Method	Sample Container	Preservation	Holding Time
Soil	TCL VOCs	EPA 8260B	2 oz. clear glass	4°C	14 days
	TCL SVOCs	EPA 8270C	4 oz amber glass	4°C	7 days
	TAL Metals	EPA 6000/7000 series	4 oz clear glass	4°C	6 months (28 days for Hg)
	Cyanide	EPA 9012	4 oz glass	4°C	14 days
	Ignitability	EPA 1010	8 oz glass	4°C	ASAP
	Corrosivity	EPA 9040B/9045C	2 oz plastic	4°C	ASAP
	Reactivity	EPA 7.3	8 oz plastic	4°C	ASAP
Groundwater	TCL VOCs	EPA 8260B	(2) 40 ml clear glass vial	HCl, 4°C	14 days
	TCL SVOCs	EPA 8270C	1L amber glass	4°C	7 days
	TAL Metals	EPA 6000/7000 series	1L plastic	HNO_3,4°C	6 months (28 days for Hg)
	TAL Metals - dissolved	EPA 6000/7000 series	1L plastic	HNO_3,4°C	6 months (28 days for Hg)
	Cyanide	EPA 9012	250 mL plastic	NAOH to pH>12, 4°C	14 days
	Ignitability	EPA 1010	50 mL plastic	4°C	ASAP
	Corrosivity	EPA 9040B/9045C	25 mL plastic	4°C	ASAP
	Reactivity	EPA 7.3	8 oz plastic	4°C	ASAP

APPENDIX A

Representative Soil Boring Logs, Test Pit Logs and Photographs

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-2
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Contractor:	Brookside
Equipment Make/Model:	CAT A12 Backhoe
Weather:	55F, Sunny
Field Supervisor:	Julie Foley and Amy Sivers
Date:	10-14 and 10-15-02

Surface Conditions: Asphalt Paving

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
1	Black SAND, trace fine -coarse Gravel, brick and concrete and wood.	8.9	Moderate tar-like odor	Dry
2	Metal pipes at 1.5'.	6.5	NR	NR
3		17.5	NR	NR
4	Black stained SAND and GRAVEL (slag).	20 +	Strong tar-like odor	Dry
5		19.2		Wet
6	Dark brown/black SAND and GRAVEL (slag), sheen on soil and water.		Strong tar- and petro-like odor	
7				
8		NR	NR	NR
9	Bottom of test pit at 8' due to groundwater in excavation.			
10				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-3
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Contractor:	Brookside
Equipment Make/Model:	CAT A12 Backhoe
Weather:	60F, Sunny
Field Supervisor:	Julie Foley
Date:	10-14-02

Surface Conditions: Asphalt Paving

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Dark brown SAND and SILT, little brick, coal and wood and wire.	ND	None	Dry
2		ND	None	Dry
3				
4				
5	Dark brown SAND, little Gravel (including brick).	ND	NR	NR
6	Bottom of test pit at 5', on either concrete or rubble - could not be determined.			
7				
8				
9				
10				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-4
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016		
	Contractor:	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	65F, Clear
	Field Supervisor:	Amy Sivers and Julie Foley
Surface Conditions: Asphalt Paving	**Date:**	10-14-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Dark brown/black SAND, little fine-coarse Gravel and brick, trace Silt and wood and wire.	ND	None	Dry
2		ND	None	Dry
3	3" thick concrete on east and south walls of test pit. Black coal and slag GRAVEL, little Sand, trace Silt.	ND	None	Dry
4		20	Moderate tar-like odor	Dry
5	Black coal and slag GRAVEL, little Sand, trace Silt; some dried tar-like material.	120+	Strong tar-like odor	Moist
6		20	Strong tar-like odor	Moist
7	Black/dark brown SAND and SILT, some Gravel (including coal and slag) and boulders, trace Clay; some dried tar-like material.	25	Strong tar-like odor	Moist
8	3" galvanized steel pipe at 7'-8', could not be removed. Soil around pipe did not appear impacted.	NR	NR	NR
9	Bottom of test pit at 8'.			
10				

omments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-5
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	**Contractor:**	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	50F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10-18-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Orange brown SAND (mostly coarse), little Gravel (including concrete and brick), trace Silt; demolition FILL including pieces of brick wall and wire. 1" pipe running East-West at 1.5'.	0.2	None	Dry
2		0.5	None	Dry
	(Concrete at 2.5' in northern portion of test pit).			
3	Railroad ties at 2'-4'.	NR	Mild creosote odor	NR
	Brown SAND, little Gravel (including brick) (FILL).			
4	Concrete layer at 3.5'.	ND	None	Dry
5	Brown SAND, little Gravel (including brick) (FILL).			
6				
	Concrete layer at 6'.			
7				
8	Brown/dark brown SAND, trace Gravel and Silt; trace black staining.	0.2	None	Dry
9		NR	NR	NR
	Bottom of test pit at 9' due to caving of side walls.			
10				

omments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-6 South
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016		
	Contractor:	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	55F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10-17-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
	Weathered concrete to 4" bgs.	ND		Dry
1	Brown and orange SAND, little Gravel.	ND		Dry
2				
3	Hit ceramic storm drainage pipe at approximately 3' bgs. Terminated test pit and relocated to north of target structure.	ND		Dry
4				
5				
6				
7				
8				
9				
10				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-6 North
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Contractor:	Brookside
Equipment Make/Model:	CAT A12 Backhoe
Weather:	55F, Clear
Field Supervisor:	Amy Sivers
Date:	10-17-02

Surface Conditions: Asphalt Paving

Depth	Internal Materials/Fluids: Outside Structure (North)	Internal Materials/Fluids: Inside Structure (South)	PID	Odor	Moisture
1					
2	Orange-brown SAND (mostly fine), little Gravel (brick, concrete and coal), trace Silt (FILL).	Dark brown SAND, some Gravel (brick and concrete), trace Silt.	ND		Dry
3					
4		COBBLE and GRAVEL (concrete, brick, slag), little Sand, trace Silt.	ND		Dry
5					
6	Orange-brown SAND (mostly fine), little Gravel (brick, concrete and coal), little Silt.	Pieces of concrete at 5'; demolition fill including pieces of brick wall and re-bar.	ND		Dry at 6' outside; Wet at 6' inside.
7		Bottom of test pit at 6' due to groundwater in excavation.	ND		
8	Black stained SAND, trace Gravel; sheen on soil.		83 (outside)		Wet in both
9					
10	Bottom of test pit at 9' due to groundwater in excavation.				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-7
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016		
	Contractor:	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	60F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10-18-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Dark brown, red and yellow SAND, little Gravel (brick) and Silt.	ND	None	Dry
2				
3	Black stained SAND, trace Gravel (brick and coal) and Silt and Clay and Wood.	13	Moderate tar-like odor	Moist
4		21	Strong tar- and sweet petro-like odor	Moist
5	Black stained SAND, trace Gravel (brick and coal) and Silt and Clay and Wood; sheen on soil, water in excavation has sheen.	103	Strong tar- and sweet petro-like odor	Wet
6				
7	Bottom of test pit at 6' due to groundwater in excavation.			
8				
9				
10				

omments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-8 North
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016		
	Contractor:	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	60F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10-15-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Light brown SAND, little Gravel, trace Silt and Wood.	0.1	None	Dry
2				
	Dark brown/black SAND (coal), little Gravel (coal and brick), trace Wood.			
3		0.6	Strong petro-like odor	Moist
4	Concrete at 4' in northern portion.			
	Black SAND, trace Gravel (coal) and Silt.			
5				
6	Black SAND, trace Gravel (coal and slag and brick), Cobbles to 12" diameter, Wood and Silt.	11.6	Strong petro-like odor	Moist
7		11.4	Strong petro-like odor	Wet
8	Black SAND, trace Gravel (coal and slag and brick), Cobbles to 12" diameter, Wood and Silt.			
9		NR	NR	NR
10	Bottom of test pit at 9' due to groundwater in excavation.			

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-8NE
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	**Contractor:**	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	65F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10/17/2002

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Black GRAVEL (concrete, brick, wood, coal and slag), little Sand, little Wood.	0.4	Mild tar-like odor	Dry
2		2.2	Moderate tar-like odor	
3				
4				
5	Black SAND (coal like), little Gravel (coal, brick, & concrete)	ND		Dry
6	2" diam pipe at 5' bgs running NW-SE. Soil under pipe does not have visible free product. Soil consists of Sand and Gravel (brick).			
7	Red-brown GRAVEL (slag-like), trace Sand. 12" pipe at 7' bgs running NE-SW	2.6	Mild tar-like odor	Moist
8	Terminated excavation at 8' bgs due to groundwater.			Wet
9				
10	Bottom of test pit at 9' due to groundwater in excavation.			

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No.	TP-8 East & West
	AKRF Project Number : 03118-0309	Page 1	of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	**Contractor:**	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	65F, Clear
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	**Date:**	10/15/2002

Depth	Internal Materials/Fluids	PID	Odor	Moisture
	Weathered concrete to 4" bgs.	All PID readings <3 ppm.		
1				
2	Black SAND and GRAVEL (brick and concrete), trace Silt			
3				
4				
5				
6	Flat piece of rubber material at 6' bgs in TP-8 West. No structures found, terminated test pit at 6'bgs and relocated to TP-8 North.			
7				
8				
9				
10				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-9
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016		
	Contractor:	Brookside
	Equipment Make/Model:	CAT A12 Backhoe
	Weather:	60F, Cloudy
	Field Supervisor:	Amy Sivers
Surface Conditions: Asphalt Paving	Date:	10-17-02

Depth	Internal Materials/Fluids	PID	Odor	Moisture
1	Dark brown SAND, trace Gravel, Silt, Wood and Wire (FILL).	2.6	Mild tar-like odor	Dry
2		3.2		
3	Black SAND,little Gravel (coal), little wire. Light brown SAND, trace Gravel and Silt.	5.2	Moderate tar-like odor	Dry
4			Mild tar-like odor	
5	Dark brown SAND, some Gravel (including brick and concrete), trace Silt. Railroad ties in some areas at 5'.	4.6	Moderate tar-like odor	Dry
6		1.3	NR	Dry
7				
8	Dark brown SAND, some Gravel (including brick and concrete), trace Silt (little silt in eastern portion).	1.9	Mild tar-like odor	Dry
9	Bottom of test pit at 9' due to caving of walls.			
10				

Comments:

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-15
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016	
Contractor:	Creamer Environmental
Equipment Make/Model:	Construction King 580 SuperK
Weather:	80°, Inside
Field Supervisor:	Jennifer Clements
Surface Conditions: Concrete / Date:	8/29/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-4": CONCRETE.			
1	4"-2': Light brown fine to medium SAND.	ND	None	Dry
2		ND	None	Dry
3	2'-5': Brown fine to medium SAND, trace Gravel, trace Silt.	ND	None	Dry
4		ND	None	Dry
5		1.5	Mild tar-like	Dry
6	5'-8': Light brown fine to medium SAND, trace Gravel, trace fine Cobble, trace Wood fragments.	ND	None	Dry
7		ND	Mild tar-like	Dry
8		ND	Mild tar-like	Dry
9	8'-10': Brown fine to medium SAND, trace Gravel, trace Wood fragments. Concrete pipe at 9.5' below grade.	2.2	Mild tar-like	Dry
10		2.0	Mild tar-like	Dry
11	10'-11.5': Brown fine to medium SAND, trace Gravel, trace fine Cobble, trace Brick fragments.	1.5	Mild tar-like	Dry
12	11.5'-12': Black, dried tar-like material.	ND	Moderate tar-like	Dry
	12'-12.5': White and light gray SAND.	ND	None	Dry
13	End of test pit at approximately 12.5' below grade.			
14				
15				

Comments: Collected TP-15 (7.5), TP-15 (12.5) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-16N
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Construction King 580 SuperK
	Weather:	80°, Inside
	Field Supervisor:	Julie Foley
Surface Conditions: Concrete	**Date:**	8/29/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-4": CONCRETE.			
1	4"-2': Light brown fine SAND.	ND	None	Dry
2		1.3	None	Dry
3	2'-6': Brown fine SAND, trace Gravel, trace Silt.	3.1	Mild tar-like	Dry
4		2.9	Mild tar-like	Dry
5		15.4	Mild tar-like	Dry
6	6'-8': Brown fine SAND, some Gravel, trace Silt, trace dried black tar-like pieces.	10.2	Mild tar-like	Dry
7		2.1	Mild tar-like	Dry
8		6.4	None	Dry
9	8'-10': Dark brown fine SAND, trace Gravel, trace Silt, trace Wood fragments.	2.6	Mild tar-like	Dry
10		2.2	None	Dry
11	10'-11': Dark brown fine SAND, trace Gravel, trace Silt, trace Wood fragments.	ND	None	Dry
12	11'-13.5': Light gray fine to medium SAND, trace Gravel.	1.8	None	Dry
13				
14	End of test pit at approximately 13.5' below grade.			
15				

Comments: Collected PP-TP-16N (3-5), PP-TP-16N (11-12) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-16S
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Construction King 580 SuperK
	Weather:	80°, Inside
	Field Supervisor:	Jennifer Clements
Surface Conditions: Concrete	**Date:**	9/2/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-4": CONCRETE.			
1	4"-2': Brown fine to medium SAND, trace Gravel.	ND	None	Dry
2		ND	None	Dry
	2'-4': Brown fine to medium SAND, trace Gravel.			
3		ND	None	Dry
4		ND	None	Dry
5	4'-6': Brown fine to medium SAND, trace Gravel, trace dried black tar-like pieces, trace fine Cobbles.	ND	None	Dry
6		ND	None	Dry
7	6'-8': Brown fine to medium SAND, trace Gravel, trace black hard tar-like pieces.	0.6	Mild tar-like	Dry
8		ND	Mild tar-like	Dry
9	8'-10': Brown fine to medium SAND, trace Gravel, trace Cobbles, trace Wood, Brick and Metal fragments.	ND	Mild tar-like	Dry
10		ND	None	Dry
11	10'-12': Gray-brown fine to medium SAND.	ND	None	Dry
12		ND	None	Dry
	End of test pit at approximately 12' below grade.			
13				
14				
15				

Comments: Collected TP-16 (4.5-5), TP-16 (11-13), TP-16S (11-12) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-17
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Construction King 580 SuperK
	Weather:	80°, Inside
	Field Supervisor:	Jennifer Clements
Surface Conditions: Concrete	**Date:**	8/29/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": CONCRETE.			
1	3"-2': Brown fine to medium SAND.	ND	None	Dry
2		ND	None	Dry
	2'-4': Light brown fine to medium SAND, trace Silt, trace Gravel.			
3		ND	None	Dry
4		1.5	Mild tar-like	Dry
	4'-7': Light brown fine to medium SAND, trace Silt, trace Gravel, trace fine Cobbles.			
5		ND	None	Dry
6		1.0	Mild tar-like	Dry
7		1.3	Mild tar-like	Dry
	7'-8': Brown fine to medium SAND, trace Gravel (mottled with hard dried black tar-like pieces).			
8		ND	Mild tar-like	Dry
	8'-10': Medium brown fine to medium SAND, trace Gravel, trace Wood fragments.			
9		0.2	Moderate tar-like	Dry
10		0.2	Moderate tar-like	Dry
	10'-13': Light brownish-gray fine to medium SAND.			
11		ND	None	Dry
12		ND	None	Dry
13		ND	None	Dry
	End of test pit at approximately 13' below grade.			
14				
15				

Comments: Collected TP-17 (4-5), TP-17 (10-12) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-18
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Construction King 580 SuperK
	Weather:	80°, Inside
	Field Supervisor:	Jennifer Clements
Surface Conditions: Concrete	Date:	9/3/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": CONCRETE.			
1	3"-2': Medium brown fine to medium SAND, trace fine to medium Gravel, trace Wire and Brick fragments.	ND	None	Dry
2		ND	None	Dry
3	2'-4': Medium brown fine to medium SAND, trace Gravel, trace fine Cobble (mottled 6" layer of dry, black, tar-like Sand).	ND	Mild tar-like	Dry
4		ND	Mild tar-like	Dry
5	4'-8': Medium brown fine to medium SAND, trace Gravel, trace dried black tar-like pieces.	4.0	Mild tar-like	Dry
6		3.9	Mild tar-like	Dry
7		25.0	Mild tar-like	Dry
8		24.0	Mild tar-like	Dry
9	8'-10': Light gray-brown SAND.	ND	None	Dry
10		ND	None	Dry
11	10'-12': Light gray-brown SAND.	ND	None	Dry
12		ND	None	Dry
13	End of test pit at approximately 12' below grade.			
14				
15				

Comments: Collected TP-18 (3-4), TP-18 (6-8) and tested for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-19
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Construction King 580 SuperK
	Weather:	80°, Inside
	Field Supervisor:	Jennifer Clements
Surface Conditions: Concrete	**Date:**	9/2/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-4": CONCRETE.			
1	4"-2': Medium brown fine to medium SAND, trace Gravel, trace Wood fragments.	ND	None	Dry
2		2.9	Mild tar-like	Dry
3	2'-4': Medium brown fine to medium SAND, trace fine Cobbles, trace Wood fragments, trace Gravel.	0.7	Mild tar-like	Dry
4		0.6	Mild tar-like	Dry
5	4'-6': Medium brown fine to medium SAND, trace Gravel.	0.7	Solvent-like	Dry
6		0.8	Solvent-like	Dry
7	6'-8': Medium brown fine to medium SAND, trace Wood fragments, trace Gravel, trace Brick.	3.9	None	Dry
8		ND	None	Dry
9	8'-10': Medium brown fine to medium SAND, trace Cobbles, trace Gravel, trace pink Brick fragments	1.0	Mild tar-like	Dry
10		0.9	None	Dry
11	10'-12': Light gray brown SAND.	ND	None	Dry
12		ND	None	Dry
13	End of test pit at approximately 12' below grade.			
14				
15				

Comments: Collected TP-19 (3'), TP-19 (3') MS/MSD, TP-19 (8'), and duplicate sample TP-Z (8') and tested for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-20
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	75° and Sunny
	Field Supervisor:	Julie Foley
Surface Conditions: Asphalt	**Date:**	9/9/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
1	0"-6": Asphalt. 6"-5.5': Brown and gray-stained SAND, GRAVEL, COBBLES, and BOULDERS, trace Silt, trace Fill (wood, brick and glass fragments), trace Slag, trace black dried tar-like material.	8.1	Mild tar-like	Dry
2		14.3	Mild tar-like	Dry
3		16.9	Moderate tar-like	Dry
4		64.3	Moderate tar-like	Dry
5		57.1	Moderate tar-like	Dry
6	5.5'-6.5': Concrete slab.	48.4	Moderate tar-like	Dry
7	6.5'-10': Light brown SAND and GRAVEL, trace Cobbles.	ND	None	Dry
8		ND	None	Dry
9		ND	None	Dry
10				
11	End of test pit at approximately 10' below grade.			
12				
13				
14				
15				

Comments: Collected TP-20 (4-4.5), TP-20 (8-9) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-21
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	60° and Clear
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/10/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-6": ASPHALT.			
1	6"-1': Gray GRAVEL, SAND and SILT.	ND	Mild tar-like	Dry
	1'-1.5': Brown-orange SAND, trace Gravel, trace Cobble.			
2		5.	Mild tar-like	Dry
3	1.5'-5': Black SAND, trace Gravel, trace red and yellow Brick.	10.	Mild tar-like	Dry
4		20.	Mild tar-like	Dry
5		30.	Mild tar-like	Dry
	5'-7.5': Concrete Slab.			
6		NA	None	Dry
7		NA	None	Dry
8	7.5'-10': Gray-brown SAND, trace Gravel, mottled with gray Sand.	10.	Mild tar-like	Dry
9		ND	Mild tar-like	Dry
10		ND	Mild tar-like	Dry
11	10'-12': Gray-brown SAND, trace Gravel, mottled with gray Sand.	ND	None	Dry
12		ND	None	Dry
	End of test pit at approximately 12' below grade.			
13				
14				
15				

Comments: No samples collected.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-22
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016	**Contractor:**	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	60° and Clear
	Field Supervisor:	Julie Foley
Surface Conditions: Asphalt	**Date:**	9/9/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-6": ASPHALT and GRAVEL.	4.5	Mild tar-like	Dry
1	6"-1.5': SAND and GRAVEL (FILL).	5.1	Mild tar-like	Dry
2	1.5' - 2.5': GRAVEL and SAND (SLAG), some Silt, some black dried tar-like material. 6" drain pipe at 1.5' (damaged and repaired).	64.6	Strong acrid-tar-like	Dry
3	2.5'-4.5': Reddish brown WOOD CHIPS, little Silt, trace Sand (compacted).	>300	Strong acrid-tar-like	Dry
4		>300	Strong acrid-tar-like	Dry
5	4.5'-5': Light brown SAND and GRAVEL. No visual staining.	>300	Strong acrid-tar-like	Dry
6	End of test pit at approximately 5' below grade due to extremely high organic vapor readings. Workers upgraded to Level C PPE.			
7				
8				
9				
10				
11				
12				
13				
14				
15				

Comments: Collected TP-22 (1.5), TP-22 (3.0-3.5) tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-23
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants
116 East 27th Street, 7th Floor
New York, NY 10016

Contractor:	Creamer Environmental
Equipment Make/Model:	Case M318
Weather:	70° and Overcast, Rain
Field Supervisor:	Jennifer Clements
Date:	9/4/2003

Surface Conditions: Asphalt

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
1	0"-6": ASPHALT. 6"-1': CONCRETE aggregate.	ND	None	Dry
2		ND	None	Dry
3		ND	None	Dry
4	1'-6': Orange-brown fine to medium SAND, little Silt, trace Gravel.	ND	None	Dry
5		ND	None	Dry
6		ND	None	Dry
7	6'-7': Light gray fine to medium SAND.	ND	None	Dry
8	7'-8': Dark gray SAND.	ND	Mild tar-like	Dry
9	8'-10': Dark gray fine to medium SAND, little Silt, trace gravel. SHEEN.	ND	Mild tar-like	Dry
10	Concrete or Rock at 10'.			
11	End of test pit at approximately 10' below grade.			
12				
13				
14				
15				

Comments: Collected TP-23 (8-9) and tested for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-24A
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Overcast, Rain
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/3/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
1	0"-6": ASPHALT. 6"-1': CONCRETE.	ND	None	Dry
2	1'-3': Orange-brown fine to medium SAND, little Brick.	ND	None	Dry
3		ND	None	Dry
4	3'-8': Light gray SAND and SILT.	ND	None	Dry
5		ND	None	Dry
6		ND	None	Dry
7		ND	None	Dry
8		ND	None	Dry
9	8'-10': Blackish-brown tar-like NAPL on gray fine to medium SAND and trace Gravel.	75.4	Tar-like	Dry
10		75	Tar-like	Dry
11	End of test pit at approximately 10' below grade.			
12				
13				
14				
15				

Comments: Collected TP-24 (9) and tested for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-24B
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Overcast, Rain
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/3/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-6": ASPHALT.			
1	6"-1.5': CONCRETE.	ND	None	Dry
2	1.5'-4': Orange brown fine to medium SAND, some Clay, little Silt.	ND	None	Dry
3		ND	None	Dry
4		ND	None	Dry
	4'-10': Gray fine to medium SAND, little Silt.			
5		10.	Mild tar-like	Dry
6		15.	Mild tar-like	Dry
7		20.	Mild tar-like	Dry
8		30.	Mild tar-like	Dry
	8'-10': Blackish-brown tar-like NAPL on gray fine to medium SAND and trace Gravel.			
9		40.	Mild tar-like	Dry
10		30.	Mild tar-like	Dry
	End of test pit at approximately 10' below grade.			
11				
12				
13				
14				
15				

Comments: No samples collected.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-25
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Rain
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/4/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
1	0"-6": ASPHALT. 6"-1': Loose GRAVEL.	ND	Mild tar-like	Dry
2	1'-4': Black-stained fine to medium SAND (possible coal), trace Gravel, trace Wood and Brick fragments. SHEEN.	60.	Strong tar-like	Dry
3		80.	Strong tar-like	Moist
4		80.	Strong tar-like	Moist
5	4'-6': Black-stained fine to medium SAND, trace Gravel, trace Wood and Brick fragments. SHEEN.	>150	Strong tar-like	Wet
6		>150	Strong tar-like	Wet
7	End of test pit at 6' below grade.			
8				
9				
10				
11				
12				
13				
14				
15				

Comments: Collected TP-25 (4-5) for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-26
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016	**Contractor:**	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Cloudy
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/5/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-6": ASPHALT.			
1	6"-1': Black-stained GRAVEL (slag).	ND	None	Dry
	1'-2': Black coal-like SAND, some Silt.			
2		ND	None	Dry
	2'-3.5': CONCRETE with rebar.			
3		ND	None	Dry
4	3.5'-5': Black SAND, trace Silt, trace Gravel. SHEEN.	60.0	Moderate tar-like	Dry
5		30.0	Strong tar-like	Moist
	5'-7': Black SAND and GRAVEL, trace Silt. SHEEN.			
6		75.0	Moderate tar-like	Moist
	7'-10': PEAT and CLAY, some Grass.			
7		80.0	Moderate tar-like	Moist
8		ND	None	Wet
9		ND	None	Wet
10		ND	None	Wet
	10'-12': PEAT and CLAY, some Grass.			
11		ND	None	Wet
12		ND	None	Wet
	End of test pit at approximately 12' below grade.			
13				
14				
15				

Comments: Collected TP-26 (5-6) and tested for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).
Groundwater at approximately 8' below grade.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY		Test Pit No. TP-29
	AKRF Project Number : 03118-0309		Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016	
Contractor:	Creamer Environmental
Equipment Make/Model:	Case M318
Weather:	70° and Clear
Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt — **Date:**	9/8/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": ASPHALT.			
1	3"-1': CONCRETE and GRAVEL aggregate.	ND	None	Dry
	1'-4': Brown SAND and BRICK, trace medium Cobbles (Brick is possible tank bottom).			
2		5.	None	Dry
3		10.	None	Dry
4		30.	None	Dry
	4'-7': Black SAND, fine Gravel, trace medium Cobbles. SHEEN.			
5		91.	Mild tar-like	Dry
6		90.	Mild tar-like	Moist
7		100+	Strong tar-like	Wet
8	End of test pit at 7' below grade due to health and safety concerns.			
9				
10				
11				
12				
13				
14				
15				

Comments: Collected TP-29 (7') and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Groundwater at approximately 6.5' below grade.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-31
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Clear
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/5/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": ASPHALT.	NA	None	Dry
1	3"-2': Dark brown SAND, trace Brick, trace Wood.	30.	Mild tar-like	Dry
2		30.	Mild tar-like	Dry
3		>150	Strong tar-like	Moist
4	Water intrusion at 3.5' below grade.	>150	Strong tar-like	Wet
5	2'-7': Black SAND, some Gravel, trace Silt, trace Brick. SHEEN.	>150	Strong tar-like	Wet
6		>150	Strong tar-like	Wet
7		>150	Strong tar-like	Wet
8		ND	None	Wet
9		ND	None	Wet
	8'-11': PEAT with Organics.			
10		ND	None	Wet
11		ND	None	Wet
	End of test pit at approximately 11' below grade.			
12				
13				
14				
15				

Comments: Collected PP-TP-31 (11) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method), Total Cyanide (Method 9012) and fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-32
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Clear
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	Date:	9/5/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-6": ASPHALT and CONCRETE.	ND	None	Dry
1	6"-1': Dark gray SAND, trace Brick, trace Gravel.	ND	None	Dry
	1'-2': Light gray SAND, some silt.			
2		>150	Strong tar-like	Wet
	2'-5': Black SAND with some Coal and Gravel (slag).			
3	NAPL on water.	>150	Strong tar-like	Moist
4		>150	Strong tar-like	Moist
5				
	End of test pit at 5' below grade.			
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Comments: Collected TP-32 (4-5) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method), Total Cyanide (Method 9012) and fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-33
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants
116 East 27th Street, 7th Floor
New York, NY 10016

Contractor:	Creamer Environmental
Equipment Make/Model:	Case M318
Weather:	70° and Clear
Field Supervisor:	Jennifer Clements
Date:	9/8/2003

Surface Conditions: Asphalt

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": ASPHALT.	NA	None	Dry
1	3"-1': Gray SAND, some Silt, some Gravel aggregate.	ND	None	Dry
2	1'-4': Black SAND, some fine to medium Gravel, trace red and yellow Brick, trace Metal pieces.	ND	Mild tar-like	Dry
3		10.	Mild tar-like	Dry
4		80.	Moderate tar-like	Dry
5	4'-8': Black SAND, some fine to medium Gravel, trace red and yellow brick, trace metal. SHEEN.	100.	Strong tar-like	Moist
6		100.	Strong tar-like	Wet
7		>100	Strong tar-like	Wet
8				
9	End of test pit at 8' below grade.			
10				
11				
12				
13				
14				
15				

Comments: Collected TP-33 (6-8) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Groundwater at 5.5' below grade.

AKRF, Inc.	Pelham Plaza, Pelham Manor, NY	Test Pit No. TP-34
	AKRF Project Number : 03118-0309	Page 1 of 1

Environmental Consultants 116 East 27th Street, 7th Floor New York, NY 10016		
	Contractor:	Creamer Environmental
	Equipment Make/Model:	Case M318
	Weather:	70° and Clear
	Field Supervisor:	Jennifer Clements
Surface Conditions: Asphalt	**Date:**	9/8/2003

Depth (ft)	Internal Materials/Fluids	PID (ppm)	Odor	Moisture
	0"-3": ASPHALT.	NA	None	Dry
1	3"-1': Gray SAND and SILT, some Concrete with rebar.			
		ND	None	Dry
2				
		ND	None	Dry
3				
	1'-6': Brownish-gray SAND, some fine Gravel, trace Metal (cables and pipes).	ND	None	Dry
4				
		5.0	None	Dry
5				
		10.0	Mild tar-like	Moist
6				
	6'-8.5': Black SAND, some Slag, some Coal fragments. SHEEN.	99.0	Moderate tar-like	Moist
7				
		104.0	Strong tar-like	Wet
8				
9	End of test pit at approximately 8.5' below grade.			
10				
11				
12				
13				
14				
15				

Comments: Collected TP-34 (8.5) and tested for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Groundwater located at approximately 7' below grade.

Photograph 1: Concrete slab at 7 to 7.5 feet bgs in TP-12, located at eastern edge of former 350,000 ft^3 relief holder footprint.

Photograph 2: Concrete slab at 7 to 8 feet bgs in TP-12B, located in center of former 350,000 ft^3 relief holder footprint.

Photograph 3: Concrete slab at 7 to 8 feet bgs (in left side of photograph) in TP-13, located at southern edge of former 350,000 ft^3 relief holder footprint.

Photograph 4: Concrete slab at 7 feet bgs in TP-14, located at northern edge of former 350,000 ft^3 relief holder footprint.

Photograph 5: Sidewall of TP-14, located at northern edge of former 350,000 ft^3 relief holder footprint.

Photograph 6: Bottom of test pit at 12.5 feet bgs in TP-15, located within former purifier house footprint.

Photograph 7: Bottom of test pit at 13.5 feet bgs in TP-16, located in footprint of former purifier house.

Photograph 8: Bottom of test pit at 13 feet bgs in TP-17, located within footprint of former purifier house.

Photograph 9: Bottom of test pit at 12 feet bgs in TP-18, located at northern edge of former 1 million ft^3 gas holder footprint.

Photograph 10: Bottom of test pit at 12 feet bgs in TP-19, located at western edge of former 1 million ft^3 gas holder footprint.

Photograph 11: Concrete pad at 5.5 to 6.5 feet bgs in TP-20, located at northern edge of former 3 million ft^3 gas holder footprint.

Photograph 12: Concrete slab at 5 to 7.5 feet bgs in TP-21, located at southern edge of former 3 million ft^3 gas holder footprint.

Photograph 13: Reddish-brown wood chips at 2.5 to 4.5 in TP-22, located adjacent to Mandee's building.

Photograph 14: Concrete and brick walls in TP-23, located within footprint of former generator house.

Photograph 15: NAPL at 8 to 10 feet bgs in TP-24, located within footprint of former generator house and adjacent to former underground brick tar tank.

Photograph 16: Black-stained material and NAPL on groundwater at 1 to 4 feet bgs in TP-25, located within footprint of former underground brick tar tank.

Photograph 17: Sheen on groundwater at 4 feet bgs in TP-25, located within footprint of former underground brick tar tank.

Photograph 18: Vertical pipe at approximately 0.5 feet bgs in TP-26, located within footprint of former pump house.

Photograph 19: Concrete partition at western end of TP-26, located within footprint of former pump house.

Photograph 20: NAPL and groundwater at 5 feet bgs in TP-29, located within footprint of former 100,000 gallon ammonia tank.

Photograph 21: Groundwater with sheen at 4 feet bgs in TP-31, located in southwestern portion of site, adjacent to Eastchester Creek.

Photograph 22: Groundwater and NAPL at 2 feet bgs in TP-32, located in vicinity of former brick storage area.

Photograph 23: Metal pipe and groundwater with sheen at 4 feet bgs in TP-33, located north of TP-32.

Photograph 24: Concrete pad with rebar and groundwater with sheen at 6 feet bgs in TP-34, located within footprint of former liquid petroleum process building.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-1 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 75F, Sunny Sampler: AKRF/Steve Grens and Julie Foley	Drilling Start: Time: 07:55, Date: 09-18-02 Finish: Time: 09:30, Date: 09-18-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	42		0-5": ASPHALT. 5"-18": Brown fine SAND, trace fine Gravel (including slag) and Silt and Wood. (Some black staining.)	4.4	Tar-like odor	Moist	PP-SB-1(0-2'), PP-SB-1(0-2')WC
2			18"-36": Orange and brown SAND, some Silt, trace fine Gravel.	4.4	Tar-like odor	Moist	
3			36"-42": Orange-brown SAND, little fine Gravel.	1.2	None	Dry	
4				0.8	None	Dry	
5	42		0-30": Orange and brown SAND, little fine Gravel (including some slag), trace Silt in lenses.	ND	None	Moist	
6				ND	None	Moist	
7			30"-42": Orange and brown quartz SAND, little fine Gravel.	ND	None	Moist	
8				ND	None	Moist	
9	42		0-6": Brown quartz SAND, trace fine Gravel and Silt. 6"-18": Light brown quartz SAND, trace fine Gravel.	1.6	None	Moist	
10			18"-42": Brown quartz SAND, little fine Gravel.	0.1	None	Moist	
11				0.1	None	Moist	
12					None	Moist	
13	48		0-18": Brown SAND, little fine Gravel, trace Silt.	2.3	None	Moist	
14			18"-48": Light brown and white SAND (with some mica), some fine Gravel.	0.5	None	Moist	
15				ND	None	Moist	
16				ND	None	Moist	
17	48		0-24": Brown quartz SAND (with some mica), little fine Gravel. (Some orange banding at 23"-24".)	0.8	None	Moist	
18			24"-27": Brown SAND, little Silt and fine Gravel. 27"-33": Brown medium-fine micaceous SAND	ND	None	Moist	
19			33"-35": COAL fragments. 35"-46": Grey micaceous SAND.	ND	None	Wet	
20			46"-48": Grey fine GRAVEL, some medium-fine Sand, trace Silt.	ND	None	Wet	
21	18			ND	None	Wet	
22			Gray fine GRAVEL (weathered rock fragments), little Sand, trace Silt	ND	None	Wet	
23							
24							
25	12		0"-3": Grey SAND, some fine Gravel, trace Silt. 3"-6": Weathered ROCK fragments 6"-12": Grey micaceous SAND, some fine Gravel (weathered rock fragments).	ND	None	Wet	
26							
27							
28							

Notes: **ND - Not Detected**

Sample PP-SB-1(0-2') was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). A separate Waste Characterization sample PP-SB-1(0-2')WC was analyzed for TCLP VOCs, TCLP SVOCs, TCLP TAL Metals, PCBS (Method 8082), Ignitability, Corrosivity, Reactivity, and TPH (Method 418.1)

Groundwater apparent at 18'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-1 Sheet 2 of 2

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	70F, Sunny.
Sampler:	AKRF/Steve Grens and Julie Foley

Drilling	
Start	Finish
Time: 08:45	Time: 11:20
Date: 9-18-02	Date: 9-18-02

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29	18		0-6": Brown fine micaceous SAND, trace Silt. 6"-18": Grey medium-coarse SAND, trace Silt and fine Gravel.	ND	None	Wet	PP-SB-1(28'-30')
30				ND	None	Wet	
31			Refusal at 30', with both direct push and with augers; rock fragments in tip of sampling spoon; apparent bedrock refusal.				
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: **ND - Not Detected**

Sample PP-SB-1(28'-30') was analyzed forTCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-2 Sheet 1 of 3

Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 80F, Clear. Sampler: AKRF/Amy Sivers	Drilling		
		Start	Finish	
		Time:	Time: 12:00	
		Date: 09-20-02	Date: 09-20-02	

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			Augered through 6" ASPHALT.				
1	36		0-3": Black stiff SAND, little Silt, trace Clay (soil is tar-like).	4.5	Moderate tar-like odor		PP-SB-2(0.5'-1')
2			3"-15": Dark brown stiff SAND, little fine Gravel (including coal and brick), trace Silt and Clay (black stained).	1.3		Moist	
3			15"-23": Brown SAND, little fine Gravel (including coal and brick), trace Silt.	ND	None	Moist	
4			23"-36": Light brown loose fine-medium quartz SAND (FILL).	ND	None	Moist	
5	48		Light brown quartz SAND, trace fine Gravel (FILL).	ND	None	Moist	
6				ND	None	Moist	
7				ND	None	Moist	
8				ND	None	Moist	
9	30		Brown loose quartz SAND, little fine Gravel.	1.5	None	Moist	
10				ND	None	Moist	
11				ND	None	Moist	
12							
13	42		Brown loose quartz SAND, little fine Gravel.	2.8	None	Moist	
14				ND	None	Moist	
15				0.9	None	Moist	
16				9.3	Mild sweet, light solvent-like odor	Wet	
17	18		0-9": Grey loose quartz and mica SAND, trace Silt (grey stained).	80.4	Strong sweet, light solvent-like odor	Wet	PP-SB-2(16'-16.5')
18			9"-18": Grey and brown stiff fine micaceous SAND, little Silt (grey stained).	21.5	Moderate sweet, light solvent-like odor	Wet	
19			(Sleeve stuck - sample shaken out).				
20							
21	30		0-12": Grey and brown stiff fine micaceous SAND, little Silt (grey stained).	35.4	Moderate sweet, light solvent-like odor	Wet	
22			12"-30": Grey-brown very stiff fine micaceous SAND, little Silt, trace Clay.	20.6	Moderate sweet, light solvent-like odor	Wet	
23				55.1	Moderate sweet, light solvent-like odor	Wet	
24							
25	24		Grey-brown fine micaceous SAND, little Silt.	37.1	Strong sweet, light solvent-like odor	Wet	
26				48.6	Strong sweet, light solvent-like odor	Wet	
27							
28							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Samples PP-SB-2(0.5'-1') and PP-SB-2(16'-16.5') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 15'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-2

Sheet 2 of 3

Drilling Method:	Hurricane Truck Mounted Rig	Drilling	
Sampling Method:	Direct Push	Start	Finish
Driller :	EPI, Inc.	Time:	Time: 16:45
Weather:	80F, Clear.	Date: 09-20-02	Date: 09-23-02
Sampler:	AKRF/Amy Sivers		

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			Grey-brown fine micaceous SAND, some Silt.	52.3	Moderate sweet, light solvent-like odor	Wet	
30	36			29.1	Moderate sweet, light solvent-like odor	Wet	
31				46.4	Moderate sweet, light solvent-like odor	Wet	
32							
33			Brown fine micaceous SAND, trace Silt.	21.9	Moderate sweet, light solvent-like odor	Wet	PP-SB-2(34'-35')WC
34	36			23.6	Moderate sweet, light solvent-like odor	Wet	
35				64.7	Moderate sweet, light solvent-like odor	Wet	
36							
37			Brown fine micaceous SAND, trace Silt.	12.4	Moderate sweet, light solvent-like odor	Wet	
38	18			13.9	Moderate sweet, light solvent-like odor	Wet	
39							
40			0-6": Grey-brown fine mica and quartz SAND (slight grey staining).				
41			6"-18": Grey-brown fine mica and quartz SAND .	51.3	Moderate sweet, light solvent-like odor	Wet	
42	18			68.2	Moderate sweet, light solvent-like odor	Wet	
43							
44							
45			Grey-brown fine micaceous SAND.	18.9	Mild sweet, light solvent-like odor	Wet	
46	8						
47							
48			0-12": Grey-brown stiff, compacted fine micaceous SAND, trace fine Gravel and Silt (some dark and light brown banding, no grain size variation between layers).				
49				13.2	Moderate sweet, light solvent-like odor	Wet	
50	24		12"-24": Grey-brown fine SAND, trace Silt.	51.3	Moderate sweet, light solvent-like odor	Wet	
51							
52							
53			Grey-brown stiff fine micaceous SAND, trace Silt.	35.2	Moderate sweet, light solvent-like odor	Wet	
54	18		(Sleeve stuck - sample shaken out).	26.7	Moderate sweet, light solvent-like odor	Wet	
55							
56							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Sample PP-SB-2(34'-35')WC was analyzed for TCLP TCL VOCs, TCLP TCL SVOCs, TCLP Metals, Total Cyanide, Total Petroleum Hydrocarbons, PCBs, Ignitability, Corrosivity, and Reactivity.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-2

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80F, Clear.
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time:	Time: 16:45
Date: 09-20-02	Date: 09-23-02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57			Grey-brown fine micaceous SAND, trace Silt.	18.6	Mild sweet, light solvent-like odor	Wet	
58	12		(Sleeve stuck - sample shaken out).				
59							
60							
61			0-12": Grey-brown fine micaceous SAND, trace Silt.	18.9	Mild sweet, light solvent-like odor	Wet	
62	30		12"-30": Grey-brown fine micaceous SAND, trace medium Sand and Silt.	53.1	Mild sweet, light solvent-like odor	Wet	
63				44.4	Mild sweet, light solvent-like odor	Wet	
64							
65			Grey-brown fine micaceous SAND.	27.1	Moderate sweet, light solvent-like odor	Wet	
66	4						
67							
68							
69			0-12": Grey-brown fine-medium quartz and mica SAND (dark stained with sheen at 6", with PID hit of 217.4ppm)	15.2	Strong sweet, light petro-like odor	Wet	
70	24		12"-24": Grey-brown fine micaceous SAND.	14.6	Mild sweet, light solvent-like odor	Wet	
71							
72							
73			End of boring at 72' due to limitations of equipment - not refusal, bedrock not encountered.				
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-8 Sheet 1 of 3
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : EPI, Inc Weather: 70F, Sunny Sampler: AKRF/Julie Foley	Drilling Start: Time: 07:30, Date: 09-24-02 Finish: Time:10:30, Date: 09-25-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			Augered through 6" of CONCRETE.				
1–4	30		0-6": Light brown fine quartz SAND, trace Asphalt. 6"-21": Dark brown fine SAND, some Silt, trace fine Gravel (including coal). 21"-22": COAL fragments, some Sand, trace fine Gravel (including slag) and Silt. 22"-30": Dark brown fine SAND, some Silt, trace fine Gravel (coal and slag).	ND ND 0.2	None None None	Moist Moist Moist	
5–8	18		Black fine GRAVEL (slag) and SAND.	ND ND	None None	Moist Moist	PP-SB-8(4'-5.5')
9–12	18		0-12": Black fine GRAVEL (coal and slag), little Sand (slag) (black stained, sheen on soil and water, brown staining on acetate liner). 12"-18": Black fine SAND, little Silt, trace fine Gravel (coal and slag) (sheen on soil and water, brown staining on acetate liner).	90.9 188.4	Strong petro-like odor Strong petro-like odor	Wet Wet	PP-SB-8(8'-12')Fingerprint
13–16	12		Black fine GRAVEL (coal and slag), little Sand (slag) (sheen on soil and water, brown staining on acetate liner).	151.3 330	Strong petro-like odor	Wet	PP-SB-8(12'-13')
17–20	24		0-3": Black fine GRAVEL (coal and slag), trace fine Sand (slag) (orange staining and sheen on acetate liner, soil and water). 3"-24": Dark brown ORGANIC SILT, trace Clay (peat).	>415 52.6	Very strong petro like odor Mild petro-like and moderate organic odor	Wet Moist	PP-SB-8(16'-17')
21–24	6		0-3": Black fine GRAVEL (coal and slag), some fine Sand, trace Silt (orange-brown staining on acetate liner). 3"-4": Light brown fine micaceous SAND. 4"-6": Dark brown ORGANIC SILT, trace Clay (peat).	451	Strong petro-like and organic odor	Wet	
25–28	18		0-12": Brown fine-medium mica and quartz SAND, trace Silt and Organic matter (twigs) and fine Gravel. 12"-14": Light grey-brown fine-medium quartz SAND. 14"-18": Dark brown SILT and CLAY, trace fine Gravel and Organic matter (stems and roots).	21.9 9.5	Moderate organic odor None	Moist Moist	

Notes: PID - Photoionization detector   ND - Not Detected   Petro - Petroleum

Samples PP-SB-8(4'-5.5') and PP-SB-8(16'-17') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-8(8'-12')Fingerprint was analyzed for oil ID (Method Modified 8100). Sample PP-SB-8(12'-13') was not sent for lab analysis.
Groundwater apparent at 8'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-8

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	70F, Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 07:30	Time:10:30
Date: 09-24-02	Date: 09-25-02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29–32	24		0-12": Grey quartz SAND, trace fine Gravel. 12"-24": Grey quartz SAND, little fine Gravel.	16.9 7.8	Mild petroleum-like odor None	Wet Wet	
33–36	30		0-12": Dark brown micaceous CLAY, little Silt, trace fine Sand and Organic matter (fine lenses and layers of mica flakes and organic matter). 12"-30": Light grey quartz SAND, little fine Gravel.	10.1 5.6 4.8	None None None	Moist Moist Moist	
37–40	12		Grey quartz SAND (with some mica flakes), some fine Gravel.	5.2	None	Wet	
41–44	18		0-3": Grey quartz SAND, little fine black gravel. 3"-8": Grey SILT, little fine Sand, trace fine Gravel and Clay. 8"-18": Grey quartz SAND, little fine Gravel.	5.2 3.7	Mild petroleum-like odor None	Wet Wet	
45–48	18		Grey quartz SAND (with some mica flakes), little Silt, trace fine Gravel (silt occurs in lumps).	7.4 6.4	None None	Wet Wet	
49–52	12		0-5": Light grey fine SAND (with trace mica flakes), trace fine Gravel and Silt. 5"-10": Grey fine micaceous SAND, some fine Gravel, trace Silt. 10"-12": Brown fine micaceous SAND, trace fine Gravel and Silt.	11.2	Mild petroleum-like odor	Wet	
53–56	6		Light brown fine micaceous SAND, trace fine Gravel and Silt.	2.8	Moderate petro-like odor	Wet	

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-8

Sheet 3 of 3

Drilling Method:	Hurricane Truck Mounted Rig	Drilling	
Sampling Method:	Direct Push	Start	Finish
Driller :	EPI, Inc.	Time: 07:30	Time:10:30
Weather:	70F, Sunny	Date: 09-24-02	Date: 09-25-02
Sampler:	AKRF/Julie Foley		

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57–60	12		Brown quartz and mica SAND, some fine Gravel, trace Silt. (Sheen on outside of sampling assembly).	11.9	Strong petro-like odor	Wet	
61–64	0		No recovery in acetate liner. Sheen on liner; strong petroleum-like odor in liner. Liner has a PID reading of 47.5ppm at the lower end.				
65–68	3		0-2": Brown fine micaceous SAND, trace Silt. 2"-3": Brown quartz and mica SAND, trace fine Gravel. (Sleeve stuck - sample shaken out).	2.4	None	Wet	
69–72	6		Brown fine micaceous SAND, trace Silt. (Sheen on bottom of sampling foot). (Sleeve stuck - sample shaken out).	2.2	None	Wet	
73–84			End of boring at 72 feet due to equipment limitations. No refusal. No bedrock.				

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

End of boring at 72 feet due to equipment limitations. Did not hit refusal, did not encounter bedrock.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-9

Sheet 1 of 2

Drilling Method:	4 1/4" Auger
Sampling Method:	2' Split Spoon
Driller :	SDS
Weather:	75F, Clear.
Sampler:	AKRF/Julie Foley & Amy Sivers

Drilling	
Start	Finish
Time: 07:10	Time: 09:10
Date: 10-01-02	Date: 10-01-02

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
		2		Augered through 6" ASPHALT.				
1 2	8	2 3 2		0-4": Brown quartz SAND, some fine Gravel, trace Silt. 4"-8": Brown and orange SILT and CLAY, trace Sand and fine Gravel and Organic matter (mottled).	0.9	None	Moist	PP-SB-9(1'-4'), PP-SB-H(1'-4')
3 4	18	3 5 7 7		0-3": Brown SILT & CLAY, little fine Gravel (some slag) and Sand (orange mottled). 3"-9": Brown fine-medium quartz SAND, trace Silt and Clay and fine Gravel and Organic matter. 9"-18": Orange-brown quartz SAND, trace fine Gravel and Silt.	0.9 0.9	None None	Moist Moist	
5 6	24	10 5 7 7		0-12": Light orange-brown SAND, little fine Gravel, trace Organic matter (leaves) (red mottling/staining). 12"-24": Light orange-brown SAND, some fine Gravel, trace Organic matter (leaves) (red mottling/staining).	0.6 0.7	None None	Moist Moist	
7 8	18	7 9 5 5		Light orange-brown SAND, little fine Gravel, trace Organic matter (leaves) (red mottling/staining).	0.6 0.5	None None	Moist Moist	
9 10	18	3 5 4 3		0-2": Grey-brown quartz SAND (slough). 2"-18": Light orange-brown quartz SAND, little fine Gravel.	0.5 0.6	None None	Moist Moist	
11 12	18	1 1 1 2		0-6": Light brown and white quartz SAND, trace fine Gravel (thin orange banding). 6"-18": Light brown and white fine-medium quartz SAND, trace fine Gravel (thin orange banding throughout).	0.4 0.4	None None	Moist Moist	
13 14	18	3 3 3 3		0-2": Light brown and white fine-medium quartz SAND, trace fine Gravel (thin orange banding throughout). 2"-12": Light brown quartz SAND. 12"-18": Grey-brown quartz SAND, trace fine Gravel.	0.3 0.3	None None	Wet Wet	
15 16	15	1 1 2 3		Grey-brown quartz and mica SAND (some orange and olive banding).	1.2 1.5	None None	Wet Wet	
17 18	24	1 1 2 2		0-12": Grey-olive green quartz and mica SAND. 12"-24": Olive green-grey fine SAND and SILT.	3.2 1.7	Mild organic odor None	Wet Wet	PP-SB-9(16'-17')
19 20	24	2 2 2 2		0-8": Grey-brown quartz and mica SAND, trace Silt (possible slough). 8"-24": Olive green-grey compacted fine micaceous SAND, some Silt (thin black bands - possibly heavy minerals; not staining - throughout).	1.3 1.2	None Mild organic odor	Wet Wet	
21 22	24	2 5 10 10		0-12": Grey-brown fine-medium quartz and mica SAND, trace Silt, (possible slough). 12"-24": Brown-olive-grey moderately stiff fine micaceous SAND and SILT.	2.0 1.5	None None	Wet Wet	
23 24	24	1 1 2 2		0-3": Grey-brown quartz and mica SAND, trace Silt (probable slough). 3"-24": Grey-brown fine micaceous SAND and SILT.	0.7 0.6	None None	Wet Wet	
25 26	24	2 1 1 2		Grey fine micaceous SAND and SILT.	0.2 0.2	None None	Wet Wet	
27 28	18	1 1 1 1		0-2": Grey-brown fine SAND and SILT (probable slough). 2"-24": Grey fine micaceous SAND and SILT.	0.1 0.2	None None	Wet Wet	

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Samples PP-SB-9(1'-4), PP-SB-H(1'-4') and PP-SB-9(16'-17') were analyzed for, TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 12'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-9 Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 4 1/4" Auger Sampling Method: 2' Split Spoon Driller : SDS Weather: 75F, Clear. Sampler: AKRF/Julie Foley & Amy Sivers	Drilling Start: Time: 07:10, Date: 10-01-02 Finish: Time: 09:10, Date: 10-01-02

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29	14	0		Grey fine micaceous SAND, trace Silt.	0.2	None	Wet	
		0						
		0						
30		0		(No blows necessary - weight of sampling assembly pushed the spoon down).				
31	24	0		Grey fine micaceous SAND, little Silt.	0.1	None	Wet	
		0						
		0						
32		0		(No blows necessary - weight of sampling assembly pushed the spoon down).	0.1	None	Wet	
				End of boring at 32' - installed a well at this boring location.				
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-13

Sheet 1 of 2

Drilling Method:	Dingo Rig	**Drilling**	
Sampling Method:	Direct Push	**Start**	**Finish**
Driller :	EPI, Inc.	**Time: 14:15**	**Time: 12:20**
Weather:	80F, Inside	**Date: 08-20-02**	**Date: 08-21-02**
Sampler:	AKRF/Julie Foley		

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Tile and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	24		Orange-brown SAND, trace fine Gravel. (Sleeve stuck - sample shaken out).	7	None	Dry	
2				0.4	None	Dry	
3				2.1	None	Dry	
4				0.7	None	Dry	
5	48		0-18": Orange-brown SAND, trace fine Gravel.	0.2	None	Dry	
6			18"-20": Dark brown SAND, trace fine Gravel (dark brown stained). 20"-36": Brown SAND (with trace mica), little fine Gravel, trace Silt.	0.7	None	Dry	
7			36"-40": Orange SAND (highly compacted in sleeve). 40"-41": Weathered CONCRETE.	2.2	None	Dry	
8			41"-48": Brown SAND, trace fine Gravel and Silt (compacted in sleeve).	8.1	None	Dry	
9	36		0-12": Light brown SAND, trace fine Gravel. (Sleeve stuck - sample shaken out).	ND	None	Dry	
10			12"-24": Brown SAND (with little mica), little fine Gravel.	0.2	None	Moist	
11			24"-36": Brown medium-coarse SAND, little fine Gravel.	0.6	None	Moist	
12							
13	36		0-18": Light brown SAND, trace fine Gravel. (Sleeve stuck - sample shaken out).	0.4	None	Moist	
14			18"-30": Orange-brown medium-coarse SAND, trace fine Gravel.	0.1	None	Moist	
15			30"-36": Black medium-coarse SAND (black stained).	0.1	None	Moist	
16							
17	48		0-12": Light brown SAND, little fineG ravel (slough)	2.3	None	Moist	PP-SB-13(16'-17') PP-SB-13(17'-18')
18			12"-24": Grey fine-medium micaceous SAND (grey stained, dark red-brown oil-like stain on sleeve)	38.5	Strong petro-like odor	Wet	
19			24"-30": Grey fine-medium micaceous SAND. 30"-34": Grey medium-coarse micaceous SAND (grey stained). 34"-48": Grey fine-medium micaceous SAND (grey stained).	19.8	Strong petro-like odor	Wet	
20				18.5	Strong petro-like odor	Wet	
21	42		0-12": Brown fine-medium micaceous SAND.	ND	None	Wet	
22			12"-30": Grey-brown fine-medium micaceous SAND, trace Silt.	ND	None	Wet	
23			30"-42": Brown fine-medium micaceous SAND.	ND	None	Wet	
24				ND	None	Wet	
25	30		Grey fine moderately stiff micaceous SAND, trace Silt.	ND	None	Wet	
26				ND	None	Wet	
27				0.3	None	Wet	
28							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Samples PP-SB-13(16'-17') and PP-SB-13(17'-18') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater believed to be at 17'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Drilling Method:	Dingo Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80F, inside
Sampler:	AKRF/Julie Foley

Boring No. SB-13

Sheet 2 of 2

Drilling	
Start	Finish
Time: 14:15	Time: 12:20
Date: 08-20-02	Date: 08-21-02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29				0.3	None	Wet	
30	36		Grey fine-medium moderately stiff micaceous SAND, little Silt.	0.1	None	Wet	
31				0.1	None	Wet	
32							
33			Advanced to bedrock and attempted to collect sample from directly above bedrock.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53			Refusal at 52' believed to be highly compact soils. Unable to collect sample from directly above bedrock because driller was not able to retrieve sampling equipment from the boring.				
54							
55							
56							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-19 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Dingo Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 75F, Inside Sampler: AKRF/Julie Foley	Drilling Start: Time: 07:10, Date: 08-29-02 Finish: Time: 09:50, Date: 08-29-02

Surface Condition: Tile and Concrete

Depth (feet)	Recovery (inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	48		0-42": Light brown SAND, trace fine Gravel and Silt.	0.1	None	Dry	
2				ND	None	Dry	
3				ND	None	Dry	
4			42"-48": Light brown fine-medium compacted SAND, little Silt.	3.7	None	Dry	
5	48		0-12": Light brown fine-medium SAND, trace Silt. 12"-13": CONCRETE.	5.1	None	Dry	
6			13"-24": Orange-brown SAND, trace fine Gravel, with a 2" horizon of brown fine Sand and Silt. 24"-27": Orange compacted SILT and fine SAND, trace fine Gravel (dark staining).	5.1	None	Dry	
7			27"-48": Orange-brown SAND, trace fine Gravel and Silt.	5.1	None	Dry	
8				1.0	None	Dry	
9	48		0-2": White-brown SAND and CONCRETE (slough). 2"-10": Orange-brown medium-coarse SAND, trace fine Gravel. 10"-13": Black fine GRAVEL (coal and slag), little Sand (sheen on soil).	1.9	None	Dry	PP-SB-19(9'-10'), PP-SB-19(9'-10')MS
10			13"-48": Dark brown SAND, trace fine Gravel (dark brown stained).	ND	None	Dry	
11	48		0-3": Light brown SAND, some fine Gravel (slough). 3"-11": Orange-brown fine-medium SAND, little fine Gravel.	1.8	None	Dry	
12			11"-48": Very light brown fine SAND (fill).	ND	None	Dry	
13	42		0-12": Light brown fine-medium SAND, trace fine Gravel (slough). (Sleeve stuck, sample shaken out). 12"-24": Very light brown fine SAND.	2.2	None	Dry	
14				0.6	None	Dry	
15			24"-36": light brown medium-coarse SAND, trace fine Gravel.	ND	None	Dry	
16			36"-42": Grey-brown medium-coarse quartz SAND, trace fine Gravel.	ND	None	Wet	
17	30		0-12": Dark grey quartz and mica SAND.	1.2	None	Wet	PP-SB-19(18'-20')
18			12"-24": Dark grey fine-medium micaceous SAND, trace Silt.	2.5	None	Wet	
19			24"-30": Black fine micaceous SAND, some Silt.	2.5	None	Wet	
20							
21	24		0-12": Olive-green-grey fine micaceous SAND, trace Silt.	0.6	None	Wet	
22			12"-24": Grey fine micaceous SAND, trace Silt.	1.0	None	Wet	
23							
24							
25	18		Grey fine-medium micaceous SAND.	0.6	None	Wet	
26							
27							
28							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Samples PP-SB-19(9'-10'), PP-SB-19(9'-10')MS, and PP-SB-19(18'-20') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

8'-12' Interval: Due to heavy sloughing, we retrieved two four-foot samples for this one four-foot interval.

Groundwater apparent at 15'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-19**

Sheet 2 of 2

Drilling Method:	Dingo Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	75F, inside
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 07:10	Time: 09:50
Date: 08-29-02	Date: 08-29-02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			0-12": Grey fine-medium micaceous SAND.	0.6	None	Wet	
30	24		12-24": Olive and orange-brown and grey fine-medium micaceous SAND (colors alternate in 1/4" layers, looks like mottling or staining).	0.1	None	Wet	
31							
32							
33				ND	None	Wet	
34	12		Light grey-brown fine-medium micaceous SAND.				
35							
36							
37			Advanced to bedrock and collected a two-foot sample from directly above bedrock.				
38							
39							
40							
41							
42							
43							
44							
45							
46							
47	12		Grey-brown fine micaceous SAND.	0.3	None	Wet	
48							
49			Refusal at 48'.				
50							
51							
52							
53							
54							
55							
56							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-23
Environmental Consultants	AKRF Project Number : 03118-0309	Sheet 1 of 2
116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Dingo Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 75F, inside. Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:15, Date: 08-26-02 Finish: Time: 14:40, Date: 08-26-02

Surface Condition: Tile and Concrete

Depth (feet)	Recovery (Inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	48		Orange, brown and grey SAND, little fine Gravel (fill) (black stained at 36").	0.5	None	Dry	
2				0.7	None	Dry	
3				3	Mild petro or coal like odor	Dry	
4				0.9	None	Dry	
5	30		0-18": Orange, brown and grey SAND, little fine Gravel (fill). 18"-30": Dark orange-brown SAND, trace fine Gravel (some black staining).	3.9	None	Dry	PP-SB-23(7'-8')
6				8	None	Dry	
7				54.3	None	Dry	
8	36		0-24": Orange, brown and grey SAND, little fine Gravel (slough). 24"-36": Light brown medium-coarse SAND, trace fine Gravel.	61.9	None	Dry	
9	36		0-12": Brown SAND, little fine Gravel (fill). (Sleeve stuck - sample shaken out). 12"-24": Light brown SAND, some fine Gravel (fill). 24"-36": Dark brown medium-coarse SAND, some fine Gravel (fill).	32	Mild sweet, light petro-like odor	Dry	
10				6.2	None	Dry	
11				4.1	None	Dry	
12							
13	30		0-10": Light brown SAND, trace fine Gravel (slough; fill). 10"-18": Dark brown SAND, little fine Gravel (slough; fill). 18"-30": Light brown and white medium-coarse SAND (fill). (Sleeve stuck - sample shaken out).	35	None	Dry	
14				18.7	None	Dry	
15				0.4	None	Dry	
16							
17	8		Dark grey micaceous SAND.	4.9	Mild organic odor	Wet	
18							
19							
20							
21	30		0-6": Dark grey micaceous SAND. 6"-12": Grey-brown micaceous SAND. 12"-15": Black micaceous SAND (black stained; leaves brown smear on acetate liner). 15"-30": Gey-brown fine-medium micaceous SAND, little Silt.	9.9	Strong sweet, light petro-like odor	Wet	PP-SB-23(22.5'-24')
22				75	Strong sweet, light petro-like odor	Wet	
23				271	Strong sweet, light petro-like odor	Wet	
24							
25	30		Grey-brown fine-medium micaceous SAND, little Silt (12"-13" is medium-coarse micaceous SAND).	3.3	None	Wet	
26				1.9	None	Wet	
27				0.2	None	Wet	
28							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-23(7'-8') and PP-SB-23(22.5'-24') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 16'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-23 Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Dingo Rig Sampling Method: Direct Push Driller : EPI, inc. Weather: 75F, Inside. Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:15, Date: 08-26-02 Finish: Time: 14:40, Date: 08-26-02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29				0.2	None	Wet	
30	36		Grey fine-medium micaceous SAND, trace Silt. (Sleeve stuck - sample shaken out).	0.3	None	Wet	
31							
32							
33			Advance to bedrock from 32' and collect a four foot sample from directly above bedrock.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45				2.1	None	Wet	
46	24		Grey fine-medium micaceous SAND.	0.3	None	Wet	
47							
48							
49			Refusal at 48'.				
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-34

Sheet 1 of 3

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	85 Sunny
Sampler:	AKRF/AES

Drilling	
Start	Finish
Time: 14:00	Time: 09:15
Date: 09-05-02	Date: 09-06-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1, 2, 3, 4	30		0-14": Black and dark brown stained SAND, little fine Gravel (slag), trace Silt, trace Clay (FILL). 12"-15": BRICK (FILL). 15"-18": Dark brown and black stained medium-coarse SAND, trace Clay (FILL). 18"-24": CONCRETE, thin piece of metal (FILL). 24"-30": Grey-brown medium-coarse quartz SAND (FILL).	3.0 2.0 1.3	NR NR NR	Moist Moist Moist	
5, 6, 7, 8	48		0-3": Brown medium-coarse SAND, some fine Gravel (brick) (FILL). 3"-6": Black stained medium-coarse SAND, trace Clay, trace Silt (FILL). 6"-30": Grey-brown medium-coarse quartz SAND, trace fine Gravel (FILL). 30"-36": Dark brown stained medium-coarse quartz SAND (FILL). 36"-48": Light brown medium-coarse quartz SAND (FILL).	1.7 3.4 17.3 37.6	NR NR NR NR	Moist Moist Moist Moist	
9, 10, 11, 12	42		0-6": Brown SAND, some fine Gravel (brick fragments) (FILL). 6"-42": Very light brown-grey coarse quartz SAND (some mica) (FILL).	5.8 41.3 3.1 3.4	Mild petro-like odor Mild petro-like odor Mild petro-like odor	Moist Moist Wet Wet	PP-SB-34(9-10)
13, 14, 15, 16	36		0-6": Black and grey stained SAND, (sheen on glove) (FILL). 6"-18": Brown quartz SAND FILL). 18"-30": Light brown quartz SAND (FILL). 30"-36": Grey fine-medium micaceous SAND. (Sleeve stuck, sample shaken out)	4.7 0.2 0.3 3.0	Moderate petro-like odor None Mild petro-like odor	Wet Wet Wet	
17, 18, 19, 20	12		0-3": Brown quartz SAND (slough). 3"-12": Grey fine-medium micaceous SAND. (Sleeve stuck, sample shaken out)	0.0 3.0	None	Wet	
21, 22, 23, 24	24		0-6": Grey fine-medium micaceous SAND. 6"-18": Dark grey stained quartz and mica SAND. 18"-24": Grey fine micaceous SAND.	0.3 0.6	Moderate petro-like odor Mild petro-like odor	Wet Wet	PP-SB-34(20-21)
25, 26, 27, 28	18		Grey-brown fine micaceous SAND, trace Silt.	0.0 0.3	None None	Wet Wet	

Notes: **ND - Not Detected** **Petro - Petroleum** **NR - Not Recorded** **PID - Photoionization Detector**

Samples PP-SB-34(9-10) and PP-SB-34(20-21) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater believed to be at 10'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-34**

Sheet 2 of 3

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	70 Sunny
Sampler:	AKRF/AES

Drilling	
Start	Finish
Time: 14:00	Time: 09:15
Date: 09-05-02	Date: 09-06-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29	30		0-3": Dark grey medium-coarse SAND (slough). 3"-30": Grey-brown fine micaceous SAND.	0.3	None	Wet	
30				0	None	Wet	
31				0	None	Wet	
32							
33			Advanced to bedrock from 32'.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-34

Sheet 3 of 3

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc
Weather:	75 Sunny
Sampler:	AKRF/AES

Drilling	
Start	Finish
Time: 08:30	Time: 09:15
Date: 09-05-02	Date: 09-06-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57							
58	NR						
59							
60			Dark grey-brown fine-medium quartz and mica SAND, little fine Gravel (rock fragments and rounded pebbles).	0.0	None	Wet	
61			Refusal at 60' - apparently bedrock). End of boring at 60'.				
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-35 Sheet 1 of 3
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 75 Sunny Sampler: AKRF/AES	Drilling Start: Time: 08:30, Date: 09-05-02 Finish: Time: 12:00, Date: 09-05-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2 3 4	24		0-6": ASPHALT and CONCRETE (augered through, but did not recover in spoon). 6"-12": Brown and black stained SAND, little fine Gravel, trace silt (FILL). 12"-20": Black GRAVEL (slag and concrete), some SAND (FILL). 20"-24": GRAVEL (concrete and brick), trace brown SAND (FILL).	0.0 0.0	None None	Dry Dry	
5 6 7 8	42		0-6": GRAVEL (concrete and brick), trace brown SAND (FILL). 6"-24": Black SAND, little fine Gravel (coal and slag) (FILL). 24"-30": Brown SAND, little Clay, trace Silt (grey staining) (FILL). 30"-42": Orange-brown SAND, trace Silt, trace Clay (FILL).	0.0 0.0 0.0 0.0	None None None None	Dry Dry Dry Dry	PP-SB-35(4.5-6)
9 10 11 12	36		0-12": Black and dark brown stained medium-coarse SAND, little Clay, trace Silt, trace fine Gravel (concrete) (FILL). 12"-33": Orange-brown medium-coarse quartz SAND (FILL). 33"-36": Grey-brown fine-medium micaceous SAND.	0.0 0.0 0.0	NR NR NR	Moist Moist Wet	
13 14 15 16	42		0-6": Orange-brown medium-coarse SAND, trace fine Gravel (slough). 6"-24": Grey-brown fine-medium micaceous SAND. 24"-42": Grey-brown medium-coarse micaceous SAND, (sheen on sand, slight orange staining on sleeve and glove).	0.0 0.0 0.3	NR NR NR	Wet Wet Wet	PP-SB-35(14-15.5)
17 18 19 20	8		Brown medium-coarse quartz SAND (FILL).	NR	None	Wet	
21 22 23 24	24		0-12": Brown medium-coarse quartz SAND (FILL). 12"-24": Dark brown-black stained medium-coarse quartz SAND, (sheen on soil, dark orange-brown product on liner and glove) (FILL). Sleeve stuck, sample shaken out.	2.4 393	Moderate petro-like odor Strong petro-like odor	Wet Wet	
25 26 27 28	24		0-6": Dark grey fine-medium micaceous SAND (liner stained orange-brown). 6"-8": Dark orange medium-coarse SAND (NAPL saturated). 8"-24": Dark grey fine micaceous SAND, little Silt. (Exterior of the sleeve has dark brown product on surface).	34.4 16.9	Strong petro-like odor Mild petro-like odor	Wet Wet	PP-SB-35(25-25.5) Fingerprint

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

Samples PP-SB-35(4.5-6) and PP-SB-35(14-15.5) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).
Sample PP-SB-353(25-25.5) Fingerprint was analyzed for Modified 8100 for an oil ID.
Groundwater apparent at 10'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-35**

Sheet 2 of 3

Drilling Method:	Hurricane Truck Mounted Rig	Drilling	
Sampling Method:	Direct Push	Start	Finish
Driller :	EPI, Inc.	Time: 08:30	Time: 12:00
Weather:	75 Sunny	Date: 09-05-02	Date: 09-05-02
Sampler:	AKRF/AES		

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			Grey-brown fine micaceous SAND, trace Silt.	2.3	Mild petro-like odor	Wet	
30	12						
31							
32							
33			Grey-brown fine micaceous SAND.	1.7	None	Wet	
34	24			2.0	None	Wet	
35							
36							
37			Grey-brown fine micaceous SAND.	0.9	None	Wet	
38	12						
39							
40			Advanced to bedrock from 40' without sampling.				
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-35

Sheet 3 of 3

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	75 Sunny
Sampler:	AKRF/AES

Drilling	
Start	Finish
Time: 08:30	Time: 12:00
Date: 09-05-02	Date: 09-05-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57							
58							
59							
60							
61	NR		No sample recovery as driller lost rods and sampler in the boring. End of boring at 64'.				
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-41 Sheet 1 of 1
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hand Auger/Dingo Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: Sunny Sampler: AKRF/Axel Schwendt	Drilling Start: Time: 07:50, Date: 10-03-02 Finish: Time: 08:10, Date: 10-03-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Unpaved soil	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	Hand augered		0-24": Dark brown Sandy SILT, some Organic matter.	ND	None	Dry	
2				ND	None	Dry	
3			24"-48": Orange-brown SAND, little Silt.				
4			(Hand augered 0-4').				
5	48		0-12": Orange-brown SAND, little Silt.	0.6	None	Dry	
6			12"-24": Grey-tan Silty SAND, little fine Gravel.	0.7	None	Dry	
7			24"-48": Orange-brown SAND, trace fine Gravel and Silt.	0.4	None	Dry	
8				0.5	None	Dry	
9			0-18": Brown SAND, little Silt, trace fine Gravel.	0.6	None	Dry	PP-SB-41(8.5-9.5)
10			Refusal at 9.5' below grade.				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB-41(8.5'-9.5') was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater not encountered.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-42 Sheet 1 of 1

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Dingo Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	75F, Sunny
Sampler:	AKRF/Axel Schwendt

Drilling	
Start	Finish
Time: 09:00	Time:
Date: 10-03-02	Date: 10-03-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Unpaved Soil	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	42		0-24": Brown stiff Silty SAND, trace fine Gravel.	ND	None	Dry	
2				ND	None	Dry	
3			24"-42": Orange-brown Silty SAND, trace fine Gravel (including coal).	ND	None	Dry	
4				ND	None	Dry	
5	36		Orange-brown medium-coarse SAND, trace fine Gravel and Silt.	ND	None	Dry	
6				ND	None	Dry	
7				ND	None	Dry	
8							
9	36		Orange-brown SAND, trace fine Gravel and Silt.	ND	None	Dry	
10				ND	None	Dry	
11				ND	None	Dry	
12							
13	30		Orange-brown SAND, trace fine Gravel.	ND	None	Dry	
14				ND	None	Dry	
15				ND	None	Dry	
16							
17	24		Orange-brown medium-coarse SAND.	ND	None	Dry	PP-SB-42A(17'-18')
18				ND	None	Moist	
19			Refusal at 18.5'.				
20							
21							
22							
23							
24							
25							
26							
27							
28							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Sample PP-SB-42A(17'-18') was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater believed to be at >18'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80 Sunny
Sampler:	AKRF/Julie Foley

Boring No. **SB-43**

Sheet 1 of 2

Drilling	
Start	Finish
Time: 10:40	Time: 12:40
Date: 09-18-02	Date: 09-18-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	36		0-6": ASPHALT and CONCRETE (augered through, but did not recover in spoon). 6"-12": COAL and SLAG, trace black fine Sand (FILL). 12"-18": Brown-dark brown fine SAND, trace Silt (NAPL-saturated) (FILL). 18"-30": Black fine SAND and SILT, trace fine Gravel (FILL). 30"-36": Brown fine SAND, some Silt (FILL).	1.5	Slight petro-like odor	Dry	PP-SB-43(2-3)
2				28.9	Moderate tar-like and petro-like odor	Moist	
3				50.6	None	Dry	
4							
5	48		0-18": Brown SAND, 1/2" band of tar-like material (FILL). 18"-30": Light brown SAND, some lenses of fine Gravel (FILL). 30"-48": Light brown SAND and fine GRAVEL (FILL).	4.4	None	Dry	
6				2.6	None	Dry	
7				3.0	Slight tar-like odor	Dry	
8				1.9	None	Dry	
9	48		0-2": Light brown SAND (black staining), (sheen on water and sleeve) (FILL). 2"-6": Orange-brown SAND, trace Silt, trace fine Gravel, (staining on top 2") (FILL). 6"-48": Orange-brown SAND, little fine Gravel (FILL).	1.9	Moderate tar-like odor	Wet Moist	
10				0.1	None	Dry	
11				ND	None	Dry	
12				0.5	None	Dry	
13	24		0-4": Light brown SAND with black staining, (slight sheen on water and sleeve) (FILL). 4"-24": Light orange-brown quartz and mica SAND, little fine Gravel, (orange and white banding in sand) (FILL).	1.9	Mild tar-like odor	Wet Moist	
14				0.8	None	Dry	
15							
16							
17	18		0-6": Grey-brown fine-medium micaceous SAND (FILL). 6"-18": Grey-brown quartz and mica SAND, trace fine Gravel (FILL).	0.1	None	Moist	
18				3.7	None	Moist	
19							
20							
21	18		Grey-brown quartz and mica SAND, trace fine Gravel (FILL).	0.5	None	Wet	
22				2.3	None	Wet	
23							
24							
25	18		Brown fine SAND, trace Silt.	1.2	None	Wet	
26				1.6	None	Wet	
27							
28							

Notes: **ND - Not Detected** **Petro - Petroleum** **NR - Not Recorded** **PID - Photoionization Detector**

Samples PP-SB-43(2-3) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method), PCBs and Total Cyanide (Method 9012).

Groundwater apparent at 20'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-43 Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller: EPI, Inc. Weather: 80 Sunny Sampler: AKRF/Julie Foley	Drilling Start: Time: 10:40, Date: 09-18-02 Finish: Time: 12:40, Date: 09-18-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			Brown fine micaceous SAND.	1.0	None	Wet	PP-SB-43(29-30)
30	24			4.0	None	Wet	
31							
32							
33			End of Boring at 32'. No refusal.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

Samples PP-SB-43(29-30) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method), PCBs and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-45 Sheet 1 of 5
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller: EPI, Inc. Weather: 80 Sunny Sampler: AKRF/Julie Foley	Drilling Start: Time: 13:00, Date: 09-16-02 Finish: Time: 13:30, Date: 09-17-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	36		0-6": ASPHALT and CONCRETE (augered through, but did not recover in spoon). 6"-30": Dark brown SAND and fine GRAVEL, trace Silt, trace Slag (FILL). 30"-36": Orange-brown medium-coarse quartz SAND, trace fine Gravel (FILL).	2.1	None	Moist	
2				1.6	None	Moist	
3				1.0	None	Dry	
4							
5	42		0-6": Dark brown-black fine-medium SAND and fine GRAVEL (slough). 6"-42": Orange-brown quartz SAND and fine GRAVEL (FILL).	3.8	None	Dry	PP-SB-45(4.5-6.0) PP-SB-45(4.5-6.0)MS
6				1.0	None	Dry	
7				0.5	None	Dry	
8				0.2	None	Dry	
9	36		0-6": Orange-brown fine-medium quartz SAND, trace fine Gravel (FILL). 6"-9": Black stained fine-medium SAND (FILL). 9"-30": Light brown medium-coarse quartz SAND (FILL). 30"-36": Dark orange-brown medium-coarse quartz SAND, trace fine Gravel (FILL).	2.7	None	Dry	
10				1.6	None	Dry	
11				0.5	None	Moist	
12							
13	24		Brown quartz SAND, trace fine Gravel (FILL).	0.5	None	Moist	
14				0.5	None	Moist	
15							
16							
17	48		0-12": Brown quartz SAND with some mica, trace fine Gravel (FILL). 12"-48": Dark grey stained medium-coarse micaceous SAND, little fine Sand, trace fine Gravel.	ND	None	Wet	PP-SB-45(17-18.5) PP-SB-F(17-18.5)
18				ND	None	Wet	
19				ND	None	Wet	
20				ND	None	Wet	
21	0		No recovery. PID of liner was ND.				
22							
23							
24							
25	6		Grey-brown fine micaceous SAND.	ND	None	Wet	
26							
27							
28							

Notes: ND - Not Detected   Petro - Petroleum   NR - Not Recorded   PID - Photoionization Detector

Samples PP-SB-45(4.5-6), PP-SB-45(4.5-6)MS, PP-SB-45(17-18.5), and PP-SB-F(17-18.5) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 16'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-45**

Sheet 2 of 5

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80 Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 13:00	Time: 13:30
Date: 09-16-02	Date: 09-17-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			Brown fine micaceous SAND.	ND	None	Wet	
30	36			ND	None	Wet	
31				ND	None	Wet	
32							
33			Advanced to bedrock from 32' without sampling.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-45**

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80 Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 13:00	Time: 13:30
Date: 09-16-02	Date: 09-17-02

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57			Advanced to bedrock from 32' without sampling.				
58							
59							
60							
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-45**

Sheet 4 of 5

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80 Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 13:00	Time: 13:30
Date: 09-16-02	Date: 09-17-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
85–90			Advanced to bedrock from 32'. (Stopped drilling for the day at 92', collected sample at 90'-92' at end of day).				
91–92	24		Grey-brown fine micaceous SAND, trace Silt.	0.2	None	Wet	
93–112			Advanced to bedrock from 92'.				

Notes: PID - Photoionization Detector ND - Not Detected Petro - Petroleum

End of boring at 92'. Stopped drilling at 92 feet because drillers are out of rods.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-45

Sheet 5 of 5

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80 Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 13:00	Time: 13:30
Date: 09-16-02	Date: 09-17-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt and Concrete	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
113–122			Advanced to bedrock from 92' without sampling.				
123–138			At 122' the sampling rods broke as the driller pushed down. No sample was retrieved from the hole and equipment limitations prevented deeper drilling at this				

Notes: PID - Photoionization Detector ND - Not Detected Petro - Petroleum

End of boring at 122' due to equipment limitation.

AKRF, Inc.	**Pelham Plaza, Pelham, NY**	**Boring No. SB-53**
	AKRF Project Number : 03118-0309	Sheet 1 of 3

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Hurricane Truck Mounted Rig	Drilling	
Sampling Method:	Direct Push	Start	Finish
Driller :	EPI, Inc.	Time: 08:30	Time: 14:00
Weather:	80F, Sunny	Date: 9/4/02	Date: 9/4/02
Sampler:	AKRF/Julie Foley		

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2 3 4	36		0-3" ASPHALT 3"-12": Fine GRAVEL, little grey-brown Silt and Sand (FILL). 12"-18": Orange-brown SAND, trace Silt (FILL). 8"-30": Light orange-brown SAND (FILL). 30"-36": Brown SAND, trace Silt, compacted (FILL).	1.5 0.6 0.3	None None None	Dry Dry Dry	
5 6 7 8	48		0-6": Brown SAND, trace Silt, compacted (FILL). 6"- 24": Light brown SAND, trace Silt and Organic matter (grass, roots, wood) (FILL). 24"-36": Light brown SAND, trace Silt (some red-orange mottling) (FILL). 36"-42": Red-brown SAND, little Silt, compacted (FILL). 42"-48": Red-brown SAND, trace Silt, trace Organic matter (FILL).	0.3 0.6 0.6 6.0	None None None None	Dry Dry Dry Dry	PP-SB-53(7'-8')
9 10 11 12	48		0-6": Light brown fine-medium SAND, trace fine Gravel (Slough) (FILL). 6"-12": Fine GRAVEL, some grey Sand, trace Asphalt (Slough) (FILL). 12"-24": Red-brown SAND (Slough) (FILL). 24"-42": Grey stained quartz and mica SAND, trace fine Gravel (sheen on water and soil) (FILL). 30"-42": Some red staining on soil, (brown oil-like staining smeared on liner). 42"-48": Grey stained SAND, little fine Gravel (sheen on soil and water) (FILL).	0.3 0.8 548 1120	None None Strong gasoline-like odor Strong gasoline-like odor	Moist Moist Wet Wet	PP-SB-53(10.5'-11.5')
13 14 15 16	24		Grey quartz and mica SAND, some fine Gravel, some black staining (FILL).	147.5 52.8	Strong petro-like odor Strong petro-like odor	Wet Wet	
17 18 19 20	24		0-18": Grey stained quartz and mica SAND (mostly coarse), trace fine Gravel, (rainbow sheen on water, brown staining on sleeve) (FILL). 18"-24": Grey-brown fine-medium micaceous SAND (sheen on soil, light staining on sleeve) (FILL).	116.6 122.7	Strong petro-like odor Strong petro-like odor	Wet Wet	PP-SB-53(16-20) Fingerprint
21 22 23 24	18		0-6": Grey micaceous SAND (black stained soil with sheen). 6"-18": Grey micaceous SAND (sheen on soil, brown sheen on water, brown staining top 2' of liner; bottom 2' had very dark brown staining on liner with NAPL droplets).	635 272	Strong petro-like odor Strong petro-like odor	Wet Wet	PP-SB-53(20-22)WC
25 26 27 28	4		Grey fine-medium micaceous SAND, slight sheen on soil (point was stuck, no recovery in the sleeve, 4" sample is from point).	30.9	Strong-moderate petro-like odor	Wet	

Notes: **ND - Not Detected** **Petro - Petroleum** **NR - Not Recorded** **PID - Photoionization Detector**

Samples PP-SB-53(7'-8') and PP-SB-53(10.5'-11.5') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method), PCBs and Total Cyanide (Method 9012).
Sample PP-SB-53(20'-22')WC was analyzed for TCLP VOCs, TCLP SVOCs, TCLP TAL Metals, TPH, Ignitability, Corrosivity, Reactivity, PCBs and CN.
Sample PP-SB-53(16'-20') Fingerprint was analyzed for Modified 8100 for an oil ID.
Groundwater apparent at 10'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. **SB-53** Sheet 2 of 3
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : EPI, Inc. Weather: 80F, Sunny Sampler: AKRF/Julie Foley	Drilling Start: Time: 08:30, Date: 9/4/02 Finish: Time: 14:00, Date: 9/4/02

Depth (feet)	Recovery (inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29–32	30		0-18": Grey-brown fine-medium micaceous SAND. 18"-30": Grey-brown quartz SAND.	7.4 11.4 4.4	None None None	Wet Wet Wet	
33–36	8		Grey-brown quartz SAND (mostly coarse).	1.8	None	Wet	
37–40	0		No recovery in acetate liner.				
41–44	8		Grey-brown fine-medium micaceous SAND, trace Silt.	1.3	Mild petroleum-like odor	Wet	
45–56			Advanced from 44' to bedrock to collect sample directly above bedrock.				

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-53

Sheet 3 of 3

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	EPI, Inc.
Weather:	80F, Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 08:30	Time: 14:00
Date: 9/4/02	Date: 9/4/02

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57			Advanced from 44' to bedrock to collect sample directly above bedrock.				
58							
59							
60							
61			0-24": Dark grey SAND, some fine Gravel (gneissic rock).	0.6	None	Wet	
62	30			1.0	None	Wet	
63			29"-30": Black compacted TAR, dark brown in middle and black on outside.	2.2	Tar-like odor	Wet	
64							
65			Refusal, apparent bedrock, at 64'.				
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

Notes: ND - Not Detected Petro - Petroleum NR - Not Recorded PID - Photoionization Detector

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-59 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller: Talon Weather: 75F, Clear. Sampler: AKRF/Amy Sivers	Drilling Start: Time: 13:45, Date: 10-07-02 Finish: Time: 14:40, Date: 10-07-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	42		0-6": ASPHALT and CONCRETE pieces, trace Sand and Silt. 6"-18": Black SAND, little fine Gravel (brick and slag), trace Silt.	2.9	None	Dry	
2			18"-24": Grey-brown and black SAND, little fine Gravel (coal & slag) and Silt, trace Clay.	23.2	None	Dry	
3			24"-42": Black and grey-brown SAND (some is coal), trace fine Gravel (including coal and slag) and Silt.	14.0	Mild tar-like odor	Dry	
4				44.6	Mild tar-like odor	Dry	
5	36		0-6": Brown and black SAND, little Silt and fine Gravel (slough). 6"-18": Dark brown and grey SAND (some is coal), little fine Gravel (including coal and brick), trace Silt and Clay.	11.2	None	Dry	PP-SB-59(4.5'-5.5')
6			18"-36": Black and dark brown SAND, little Silt and Organic matter (roots and stems), trace fine Gravel and Clay (sheen on soil at 30"-36").	56.2	Moderate tar-like odor	Moist	
7				86.7	Moderate tar-like odor	Wet	
8							
9	42		0-3": Black SAND (coal), trace Silt (slough). 3"-7": Dark brown fine-medium SAND, little Silt, trace Organic matter (roots). 7"-19": Grey-brown quartz SAND, little fine Gravel, trace Silt.	7.8	Mild tar-like odor	Wet	PP-SB-59(9.5'-10')
10			19"-25": Black SAND, trace fine Gravel and Silt (black stained, sheen on soil, orange staining on acetate liner).	32.6	Strong tar-like odor	Wet	
11			25"-42": Dark brown ORGANIC SILT (roots, stems and leaves), little Clay, trace fine-medium Sand (orange-brown staining on acetate liner).	>305	Moderate tar-like and organic odor	Wet	
12				154.2	Moderate tar-like and organic odor	Wet	
13	36		0-6": Black and brown SAND, little fine Gravel, trace Silt (sheen on soil). 6"-24": Grey-brown fine-medium SAND, little Silt, trace fine Gravel and Organic matter (roots and leaves) (sheen on exterior of soil only).	103.2	Strong tar-like and petro-like odor	Wet	
14			24"-36": Dark grey-brown quartz and mica SAND, trace fine Gravel and Silt (slight sheen on exterior of soil only).	53.9	Moderate tar-like and petro-like odor	Wet	
15				28.2	Mild tar-like odor	Wet	
16							
17	48		Dark grey-brown quartz and mica SAND (mostly coarse) (dark grey stained).	7.8	Mild tar-like odor	Wet	
18				6.3	Mild tar-like odor	Wet	
19				17.3	Mild tar-like odor	Wet	
20				10.4	Mild tar-like odor	Wet	
21	46		0-42": Dark grey quartz and mica SAND (mostly coarse, some banding of fine-medium Sand) (sheen on soil at 28"-30").	5.8	None	Wet	
22				4.4	None	Wet	
23			42"-46": Grey-brown fine micaceous SAND, trace Silt.	8.2	None	Wet	
24				10.9	Mild organic odor	Wet	
25	30		0-18": Dark grey-brown fine-medium micaceous SAND, trace Silt.	1	None	Wet	
26			18"-30": Dark grey-brown fine-medium micaceous SAND, trace fine Gravel and Silt.	2.2	None	Wet	
27			(Sleeve stuck - sample shaken out).	0.9	None	Wet	
28							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-59(4.5'-5.5') and PP-SB-59(9.5'-10') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 7'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	Talon
Weather:	75F, Clear.
Sampler:	AKRF/Amy Sivers

Boring No. **SB-59**

Sheet 2 of 2

Drilling	
Start	Finish
Time: 13:45	Time: 14:40
Date: 10-07-02	Date: 10-07-02

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			0-12": Grey-brown medium-coarse quartz SAND, trace fine Gravel.	2.2	None	Wet	
30	30		12"-30": Dark grey-brown fine-medium micaceous SAND, little fine Gravel, trace Silt.	0.7	None	Wet	
31							
32							
33			Refusal at 32.5'. Could not determine if bedrock.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. **SB-60** Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Truck Mounted Rig Sampling Method: Direct Push Driller : Talon Weather: 60F, Sunny Sampler: AKRF/Julie Foley	Drilling Start: Time: 10:20, Date: 10-08-02 Finish: Time: 12:00, Date: 10-08-02

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	48		0-6": ASPHALT and CONCRETE.	1.8	None	Dry	PP-SB-60(2.5'-3.5') PP-SB-K(2.5'-3.5')
2			6"-48": Black SAND and fine GRAVEL (slag and coal and brick), trace Silt.	1.4	Mild tar-like odor	Dry	
3				12.2	Moderate tar-like odor	Dry	
4				74.5	Strong tar-like odor	Dry	
5	36		0-6": Black SAND (coal), little Silt, trace fine Gravel (Slag). 6"-12": Brown SAND, little Silt, trace fine Gravel (coal and slag) (some black staining on soil).	25.5	None	Dry	
6			12"-15": Brown SAND and SILT, trace Orgnics. 15"-33": Brown SAND and SILT, trace fine Gravel (slag and coal) and organcis (some black staining).	20.9	Mild tar-like odor	Moist	
7			33"-36": Grey-brown SAND, little Silt, trace fine Gravel (including slag).	10.5	Mild organic odor	Wet	
8							
9	42		0-6": Brown SAND, little Silt, trace fine Gravel (slag) (some black staining) (SLOUGH). 6"-24": Dark brown SAND, little Silt, trace Clay and fine Gravel (slag). (Small pockets of tar-like material).	137.6	Strong tar-like odor	Wet	
10			24"-30": Brown SAND, little Silt and Clay, trace Organics (black stained).	22.4	Strong tar-like odor	Wet	
11			30"-42": Brown SAND, trace fine Gravel (slag) (sheen on soil, black staining).	22	Moderate tar-like odor	Wet	
12				36.9	Strong petro-like odor	Wet	
13	48		0-6": Brown SAND, trace Silt (black stained). 6"-18": Dark brown SAND, little Silt, trace Clay.	48.5	Moderate petro-like/organic odor	Wet	PP-SB-60(14'-16') PP-SB-60(14'-16')MS
14			18"-48": Brown quartz and mica SAND, trace fine Gravel (slag and coal and rock) and Silt (sheen on soil, grey stained).	31.5	Moderate petro-like/organic odor	Wet	
15				>183	Strong petro-like odor	Wet	
16				81.9	Strong petro-like odor	Wet	
17	36		0-2": Brown SAND and SILT, trace Clay and Organics. 2"-20": Red-orange-brown ORGANICS, trace Sand, Silt and Clay.	154.4	Strong organic odor	Wet	
18			20"-26": Dark grey SILT, little fine Sand and Clay, trace Organics.	139.5	Strong organic odor	Wet	
19			26"-36": Light grey quartz and mica SAND, trace Silt and fine Gravel.	67.6	Moderate organic odor	Wet	
20							
21	48		0-24": Grey quartz and mica SAND, trace Silt.	12.2	Moderate organic odor	Wet	
22			24"-48": Grey medium-fine quartz and mica SAND, trace fine Gravel.	6.4	Moderate organic odor	Wet	
23			(Sleeve stuck, sample shaken out).	8.4	Mild petro-like odor	Wet	
24				23.5	Mild petro-like odor	Wet	
25	30		Grey-brown quartz and mica SAND.	835	Mild petro-like odor	Wet	
26			(Sleeve stuck, sample shaken out).	12.9	Mild petro-like odor	Wet	
27				12.8	Mild petro-like odor	Wet	
28							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Samples PP-SB-60(2.5'-3.5'), PP-SB-K(2.5'-3.5'), PP-SB-60(14'-16') and PP-SB-60(14'-16')MS were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 14'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-60**

Drilling Method:	Hurricane Truck Mounted Rig
Sampling Method:	Direct Push
Driller :	Talon
Weather:	60F, Sunny
Sampler:	AKRF/Julie Foley

Drilling	
Start	Finish
Time: 10:20	Time: 12:00
Date: 10-08-02	Date: 10-08-02

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29				8.8	Mild petro-like odor	Wet	
30	NR		Grey-brown SAND, trace fine Gravel.	15.7	Mild petro-like odor	Wet	
31			(Sleeve stuck, sample shaken out).	5.2	Mild petro-like odor	Wet	
32							
33			End of boring - equipment limitation.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-61
Environmental Consultants 116 East 27th Street, 7th Fl, New York, NY 10016	AKRF Project Number : 03118-0309	Sheet 1 of 2

Drilling Method:	Hurricane Truck Mounted Rig	Drilling		
Sampling Method:	Direct Push	Start		Finish
Driller :	Talon	Time: 12:15		Time: 14:30
Weather:	60F, Sunny	Date: 10-08-02		Date: 10-08-02
Sampler:	AKRF/Julie Foley			

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2 3 4	48		0-6": Light grey fine GRAVEL and light brown SAND, trace Silt. 6"-24": Black SAND, trace Silt and fine Gravel (slag and coal). 24"-30": Orange SAND, trace fine Gravel and Silt. 30"-38": Light brown SAND, trace fine Gravel. 38"-48": Dark brown/black quartz and mica SAND, trace fine Gravel and Silt.	1.5 2.9 12.1 15.1	None None None None	Dry Dry Dry Dry	PP-SB-61(3'-4')
5 6 7 8	36		0-6": Light brown SAND, trace Silt and fine Gravel. 6"-8": Brwn SAND, little Silt (black stained). 8"-10": Weathered CONCRETE. 10"-22": Orange-brown and dark brown SAND and SILT (mottled, compacted). 22"-28": Orange-brown SAND and SILT, trace Clay (compacted). 28"-36": Dark brown and black SAND and SILT, trace Clay (compacted).	5.5 8.5 4.5	None None None None	Dry Dry Dry Dry	
9 10 11 12	36		0-6": Brown and black SAND and SILT, trace fine Gravel and Clay (mottled). 6"-18": Light brown SAND, little fine Gravel, trace Silt (1" black band at 12"). 18"-30": Brown SAND, trace fine Gravel. 30"-36": Brown SAND, trace fine Gravel (NAPL-saturated, brown staining on sleeve, sheen on soil and water).	18.2 32.8 129.1	Mild petro-like odor Mild petro-like odor Strong petro-like odor	Moist Moist Wet	
13 14 15 16	48		0-6": Brown and black SAND, some Silt, trace fine Gravel and Clay (mottled) (SLOUGH). 6"-30": Brown SAND, trace fine Gravel (NAPL-saturated, NAPL smeared and beading on liner, sheen on soil and water). 30"-48": Brown SAND (slight sheen on soil and water).	143.5 160.5 38.3 31.7	Mild petro-like odor Strong petro-like odor Moderate petro-like odor	Moist Wet Wet Wet	PP-SB-61(12.5'-14.5') PP-SB-61(12.5'-14.5')WC
17 18 19 20	24		0-18": Grey-brown quartz and mica SAND, trace Silt and fine Gravel. 18"-24": Grey-brown quartz and mica SAND.	8.5 6.5	Mild petro-like odor Mild petro-like odor	Wet Wet	
21 22 23 24	48		0-32": Grey-brown fine-medium mica SAND. 32"-48": Grey fine mica SAND.	1.9 3.4 3.5 3.4	None None None None	Wet Wet Wet Wet	
25 26 27 28	36		Grey fine mica SAND.	0.9 2.1 2	None None None	Wet Wet Wet	

Notes: PID - Photoionization detector | ND - Not Detected | NR - Not Recorded | Petro - Petroleum

Samples PP-SB-61(3'-4') and PP-SB-61(12.5'-14.5') were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). PP-SB-61(12.5'-14.5')WC was analyzed for TCLP VOCs, TCLP SVOCs, TCLP TAL Metals, TPH, Ignitability, Corrosivity, Reactivity, PCBs and CN.

Groundwater apparent at 12'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY	Boring No. SB-61
AKRF Project Number : 03118-0309	Sheet 2 of 2

Drilling Method:	Humcane Truck Mounted Rig	Drilling	
Sampling Method:	Direct Push	Start	Finish
Driller :	Talon	Time: 12:15	Time: 14:30
Weather:	60F, Sunny	Date: 10-08-02	Date: 10-08-02
Sampler:	AKRF/Julie Foley		

Depth (feet)	Recovery (Inches)	Soil Type		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29			0-12": Grey fine mica SAND.	1.3	None	Wet	
30	18		12"-18": Grey fine mica SAND and SILT.	1	None	Wet	
31							
32							
33			End of boring at 32' - equipment limitation.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected NR - Not Recorded Petro - Petroleum

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-68**

Sheet 1 of 2

Drilling Method:	Hurricane
Sampling Method:	Direct Push/4' Sampler
Driller :	Talon
Weather:	75° sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 9:20	Time: 10:50
Date: 9-11-03	Date: 9-11-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
0-4	42		0-4" ASPHALT. 4-42" Dark grey stained SAND, little Silt, trace fine Gravel. Concrete pieces at 14-16"	0.8 0.9 1.6 1.3	Mild tar-like Mild tar-like Mild tar-like Mild tar-like	Moist Moist Moist Moist	
4-8	26		Black SAND, little Silt, trace fine Gravel. ROCK and BRICK pieces at 3-6".	4.3 6.1 9.8	Moderate tar-like Moderate tar-like Moderate tar-like	Moist Moist Moist	PP-SB-68 (6-8) (VOCs, SVOCs)
8-12	6		Black SAND, little Silt, trace fine Gravel.	10.4	Moderate tar-like	Moist	
12-16	48		0-12" Dark grey medium-fine SAND, trace Silt. 12-32" Grey coarse-medium SAND, little fine Gravel, trace Silt. 32-38" Black stained SAND, trace Silt and fine Gravel. 38-48" PEAT: organics, little Silt, trace Sand.	0.8 4.7 16.4 17.2	Mild tar-like Mild tar-like Moderate tar-like Moderate tar-like	Wet Wet Wet Wet	PP-SB-68 (14-15) (VOCs, SVOCs)
16-20	48		0-24" SLOUGH - Loose black and grey SAND, trace Silt and Peat pieces. 24-35" PEAT: organics, little Silt, trace Sand. 35-40" Grey dense SAND.	5.6 33.9 9.0	Moderate petro and tar-like Moderate petro and tar-like Moderate sulfurous and organic	Wet Wet Wet	
20-24	40		0-28: Grey SAND, trace Silt. 28-40": Grey coarse-medium SAND, trace fine Sand and Silt.	2.0 2.5 9.4	Moderate sulfurous and petro-like Moderate sulfurous and petro-like Moderate sulfurous and petro-like	Wet Wet Wet	
24-28	36		Grey-brown SAND, trace Silt. (Sleeve stuck - sample shaken out)	1.8 2.0 4.3	Mild petro-like Mild petro-like Mild petro-like	Wet Wet Wet	

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Began discrete sampling at 20' below ground.

Sample PP-SB68(6-8) and PP-SB-68 (14-15) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-68 Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Sampling Method: Direct Push/4' Sampler Driller : Talon Weather: 70° sunny Sampler: AKRF/Amy Sivers	Drilling Start — Time: 9:20, Date: 9-11-03 Finish — Time: 10:50, Date: 9-11-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			Grey-stained SAND, trace Silt.	6.7	Mild petro-like	Wet	
29			(Sleeve stuck - sample shaken out)	5.9	Mild petro-like	Wet	
30	42			2.3	Mild petro-like	Wet	
31							
32							
33			End of boring at 32' as per work plan protocol.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Started discrete sampling at 20' below ground

Sample PP-SB68(6-8) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-69

Sheet 1 of 2

Drilling Method:	Hurricane	Drilling	
Sampling Method:	Direct Push/4' Sampler	Start	Finish
Driller :	Talon	Time: 07:30	Time: 10:15
Weather:	65° sunny	Date: 9-9-03	Date: 9-9-03
Sampler:	AKRF/Eric Sivers		

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt parking lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	48		0-16" ASPHALT, Concrete rubble, Brick rubble, little sand.	ND	None	Dry	
1			16-48" Black GRAVEL, little Silt and Sand (coal, slag).	0.5	Mild tar-like	Dry	
2				0.1	Mild tar-like	Dry	
3				7.4	Mild tar-like	Dry	
4	48		0-6" SLOUGH.	14.5	Mild tar-like	Dry	SB-69 (5-6') (VOCs, SVOCs)
5			6-27" Black GRAVEL, little Sand and Silt (coal, slag).	14.2	Mild tar-like	Dry	
6			27"-30" Grey GRAVEL (stone rubble).	7.9	Mild tar-like	Dry	
7			30-48" Black SAND, little Silt and Gravel. SHEEN on soil.	4.8	Strong tar-like	Wet	
8	48		0-6" SLOUGH.	6.8	Strong tar-like	Wet	
9			6-14" Dark grey SAND, little Silt, trace Gravel. SHEEN on soil.	1.7	Strong tar-like	Wet	
10			14-24" Brown SAND, some Silt, trace Gravel (NAPL saturated).	7.6	Strong tar-like	Wet	
11			24-42" Brown SAND, some Silt, trace Roots. SHEEN on soil. 42-48" Grey micaceous SAND.	5.2	Strong tar-like	Wet	
12	48		0-27" Grey micaceous SAND. Light SHEEN on soil.	10.9	Strong tar-like	Wet	PP-SB-69 (15-16') (VOCs, SVOCs)
13			27-48" Dark brown stained micaceous SAND. Dark brown staining.	12.8	Strong tar-like	Wet	
14				66.8	Strong tar-like	Wet	
15				>140	Strong tar-like	Wet	
16	34		0-1" Dark brown PEAT, little micaceous Sand. Oil-like stain on sleeve.	29.1	Strong tar-like	Moist	
17			1-34" Dark brown PEAT.	28.5	Strong tar-like	Moist	
18				45.3	Strong tar-like	Moist	
19				6.1	Strong tar-like	Moist	
20	38		0-8" Dark brown PEAT. SHEEN on water.	46.4	Strong tar-like	Moist	
21			8-19" Dark brown Silty SAND, trace Roots and peaty Organics.	12.8	Moderate tar-like	Moist	
22			19-38" Dark grey micaceous SAND.	8.1	Moderate tar-like	Wet	
23				6.3	Moderate tar-like	Wet	
24	28		0-28" Grey micaceous SAND. SHEEN on water.	6.5	Moderate tar-like	Wet	
25				11.8	Moderate tar-like	Wet	
26				44.7	Moderate tar-like	Wet	
27							
28							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Started discrete sampling at 16' below ground.

Samples PP-SB69(5-6) and PP-SB-69(15-16) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-69

Sheet 2 of 2

Drilling Method:	Hurricane
Sampling Method:	Direct Push/4' Sampler
Driller :	Talon
Weather:	65° sunny, windy
Sampler:	AKRF/Eric Sivers

Drilling	
Start	Finish
Time: 07:30	Time: 10:15
Date: 9-9-03	Date: 9-9-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	36		0-36" Grey micaceous SAND.	1.5	Mild tar-like	Wet	
29			(Sleeve stuck - sample shaken out).	2.4	Mild tar-like	Wet	
30				3.2	Mild tar-like	Moist	
31				6.1	Mild tar-like	Moist	
32	36		0-36" Grey micaceous SAND, trace fine Gravel.	3.2	Mild tar-like	Wet	
33			(Sleeve stuck - sample shaken out).	0.6	Mild tar-like	Wet	
34				1.4	Mild tar-like	Wet	
35				2.0	Mild tar-like	Wet	
36	48		0-48" Grey micaceous SAND, trace fine Gravel.	2.1	Mild tar-like	Wet	
37				3.5	Mild tar-like	Wet	
38				1.9	Mild tar-like	Wet	
39				10.1	Mild tar-like	Wet	
40	36		0-29" Dark grey micaceous SAND.	0.2	None	Wet	
41			29-36" Dark grey micaceous coarse SAND.	0.1	None	Wet	
42				0.3	None	Wet	
43				0.1	None	Wet	
44			End of boring at 44' as per work plan protocol.				
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Started discrete sampling at 16' below ground.

Samples PP-SB69(5-6) and PP-SB-69(15-16) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

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116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY		Boring No. SB-75	
AKRF Project Number : 03118-0309		Sheet 1 of 2	
Drilling Method:	4 1/4" Auger	Drilling	
Sampling Method:	2' Split Spoon	Start	Finish
Driller :	General Borings	Time: 10:20	Time: 13:20
Weather:	75F, Sunny	Date: 09-08-03	Date: 09-08-03
Sampler:	AKRF/Amy Sivers		

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
1 2	n/a	n/a n/a n/a n/a		Augered through asphalt and concrete 0 to 2'.				
3 4	6	9 7 5 5		0-3" Black SAND, little fine Gravel (concrete pieces), trace Silt. 3-6" Brown SAND, trace Silt.	ND ND	Dry Wet	None None	
5 6	12	5 5 6 6		Medium dense brown SAND.	ND	Moist	None	
7 8	8	4 3 5 6		0-6" Brown SAND. 6-8" Black SAND, trace Silt, fine Gravel. Soil is NAPL-saturated.	102.9	Wet	Moderate tar-like	
9 10	24	3 3 3 5		0-12" Brown SAND. 12-24" Black and dark brown SAND, little fine Gravel, trace Silt. SHEEN on soil.	57.1 >200	Wet Wet	None Mild tar-like	PP-SB-75 (8-10) and Duplicate (VOCs, SVOCs, Metals, CN)
11 12	24	2 2 4 7		0-14" Black SAND, trace fine Gravel, trace Silt. SHEEN on soil. 14-24" Brown SAND.	120.8 62.9	Wet Wet	Mild tar-like None	
13 14	24	5 6 8 9		0-12" Black SAND, trace fine Gravel. SHEEN on soil. 12-22" Brown SAND, trace Silt. 22-24" Brown SAND, little Silt, black staining. SHEEN on soil.	66.9 37.8	Wet Wet	Mild tar-like Mild tar-like	
15 16	24	2 2 4 8		Dark grey SAND, trace fine Gravel, trace Silt. SHEEN on soil 0-8". Black stained 0-10" and 20-24".	82.2 44.9	Wet Wet	Mild tar-like Mild tar-like	
17 18	24	5 6 7 11		0-20" Grey coarse-medium SAND, little fine Sand, trace Silt. 0-2" soil is NAPL-saturated. 20-22" Grey coarse-medium SAND, trace fine Sand. Soil is NAPL-saturated. 22-24" Grey Silty SAND.	14.2 45.0	Wet Wet	Mild tar-like Mild tar-like	
19 20	24	5 6 8 13		0-19" Black SAND, trace Silt. SHEEN on soil. 19-24" Grey silty SAND.	141.3 24.1	Wet Wet	Mild tar-like Mild tar-like	
21 22	15	7 27 33 36		0-10" Grey-brown SAND, little Silt. 10-12" Weathered ROCK, trace SAND. Heavy SHEEN on soil and water. 12-15" ROCK. Heavy SHEEN on soil and water.	37.8	Wet	Moderate tar-like	
23 24	24	40 18 21		0-20" Grey-brown SAND, little Silt, trace fine Gravel. SHEEN on soil 0-20", 12-14" soil is NAPL-saturated. 20-24" Grey-brown GRAVEL (weathered rock), little Sand, trace Silt. Light SHEEN on soil.	175.0 55.5	Wet Wet	Moderate tar-like Moderate tar-like	
25 26	14	26 31 14 11		Dense grey-brown SAND, little Silt, trace fine Gravel. SHEEN on soil.	47.1	Wet	Mild tar-like	
27 28	18	15 16 21 31		0-12" Grey-brown SAND, trace Silt. 12-15" Grey-brown coarse SAND, little fine Gravel, trace medium-fine Sand. 15-18" Grey ROCK pieces, trace Sand, Silt, and Clay. SHEEN on soil.	14.6	Wet Wet	Mild tar-like Mild tar-like	

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Started using water to create a head in the augers at 20' due to running sands.

Sample PP-SB-75(8-10) and duplicate sample PP-SBW(8-10) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	**Pelham Plaza, Pelham, NY** AKRF Project Number : 03118-0309	Boring No. **SB-75** Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 4 1/4" Auger Sampling Method: 2' Split Spoon Driller : General Borings Weather: 75F, Sunny. Sampler: AKRF/Amy Sivers	Drilling Start: Time: 10:20, Date: 09-08-03 Finish: Time: 13:20, Date: 09-08-03

Depth (feet)	Recovery (Inches)	Blow Counts	Soil Type	Surface Condition: Loose soil (backfilled test pit)	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
29 30	24	40 45 100/5		0-10" Loose GRAVELLY SAND (rock pieces, rounded). 10-24" Grey-brown SAND, some fine Gravel (rounded rock pieces), trace Silt.	8.3	Wet Wet	Mild tar-like Mild tar-like	
31 32	n/a	n/a n/a n/a n/a		Split Spoon refusal at 29.5. Auger refusal at 31' below ground.				
33				End of boring at 31' on apparent bedrock.				
34								
35								
36								
37								
38								
39								
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41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Started using water to create a head in the augers at 20'.

Sample PP-SB-75(8-10) and duplicate sample PP-SBW(8-10) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-79 Sheet 1 of 2

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	4 1/4" Auger
Sampling Method:	2' Split Spoon
Driller :	General Borings
Weather:	80° rainy
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 13:00	Time: 13:45
Date: 09-4-03	Date: 09-4-03

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
	n/a	n/a		Augered through ASPHALT 0-6".				
1 - 2	12	9 36 22		0-3" Light brown and yellow SAND and BRICK (concrete). 3-12" Black SAND and fine GRAVEL, trace Silt. SHEEN on soil.	0.2 17.5	Moist Moist	Moderate tar-like Moderate tar-like	
3 - 4	14	11 15 17 19		0-3" Yellow-brown GRAVEL (concrete), trace Sand. SHEEN on soil. 3-14" Black fine GRAVEL, little Sand, trace Silt. SHEEN on soil.	2.3 94.5	Moist Moist	Strong tar-like Strong tar-like	
5 - 6	12	6 9 7 6		Black fine GRAVEL, trace Sand, trace Silt. Soil is NAPL-saturated	74.3	Wet	Strong tar-like	
7 - 8	14	6 6 10 10		Black fine GRAVEL, little Sand, trace Silt (possible slough). Soil is NAPL-saturated.	22.9	Wet	Strong tar-like	
9 - 10	12	5 10 3 3		Black and brown GRAVEL, little Sand, trace Silt. (Loose, some may be slough.) Soil is NAPL-saturated.	7.9	Wet	Strong tar-like	
11 - 12	24	1 1 1 2		0-6" SLOUGH - loose SAND and Gravel. 6-24" Grey-brown Silt with some organics, little Clay, trace Sand.	12.9 2.7	Wet Wet	Mild organic Mild organic	
13 - 14	24	4 3 3 3		0-4" SLOUGH - loose SAND and Gravel. 4-24" Grey-brown SILT with some organics, little Clay, trace Sand. Lower 6" some clay.	12.9 2.7	Wet Wet	Mild organic Mild organic	
15 - 16	24	1 1 4 6		0-4" SLOUGH - loose SAND and Gravel. 4-20" Grey-brown SILT with some organics, little Clay, trace Sand. 20-24" Grey-brown mica-SAND, little Silt.	4.4 4.7	Wet Wet	Mild organic Mild organic	
17 - 18	24	4 14 24 24		0-6" SLOUGH - loose SAND and Gravel and Silt. NAPL in soil. 6-12" Grey mica and quartz SAND, trace Silt, little fine Sand. 12-24" Grey medium-fine SAND, little Silt, trace organics in layers.	11.3 2.8	Wet Wet	None None	
19 - 20	24	18 18 21 20		0-2" SLOUGH - loose SAND and Gravel and Silt. NAPL in soil. 2-16" Grey coarse-medium quartz and mica SAND, trace Silt, fine Sand. 16-24" Grey medium-fine mica SAND, trace fine Gravel, coarse Sand, Silt.	11.3 9.8	Wet Wet	None None	
21 - 22	18	5 5 7 12		0-12" SLOUGH - loose SAND and Gravel and Silt and Clay. NAPL in soil. 12-16" likely Slough, as above. 16-18" Grey medium-coarse SAND, trace Silt.	0.9 0.2	Wet Wet	Mild petro-like Mild petro-like	
23 - 24	24	13 12 12 14		0-16" SLOUGH. NAPL in spots. 16-24" Grey SAND, trace fine Gravel, Silt. Soil is NAPL-saturated.	0.9 >267	Wet Wet	Mild petro-like Strong tar-like	PP-SB-79 (22-26) (VOCs, SVOCs)
25 - 26	24	4 2 9 10		0-2" SLOUGH. 2-10" Grey coarse-medium SAND, trace fine Sand and Silt. Soil is NAPL-saturated 10-24" Grey fine-medium SAND, little Silt.	>250 5.9	Wet Wet	Strong petro-and tar-like Moderate tar-like	
27 - 28	20	4 6 10 10		0-3" SLOUGH. 3-20" Grey medium-coarse SAND, trace Gravel, fine Sand and Silt.	3.8 10.7	Wet Wet	Moderate tar-like Moderate tar-like	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB79(22-26) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-79 Sheet 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 4 1/4" Auger Sampling Method: 2' Split Spoon Driller : General Borings Weather: 80° rainy Sampler: AKRF/Amy Sivers	Drilling Start: Time: 13:00, Date: 09-4-03 Finish: Time: 13:45, Date: 09-4-03

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
29 30	24	6 8 9 7		0-3" Slough. SHEEN on soil 3-12" Grey SAND, trace silt and fine Gravel. SHEEN on soil. 12-24" Dense grey SAND, little Silt and Gravel. Spotty SHEEN on soil.	73.0 22.9	Wet Wet	Strong tar-like Strong tar-like	
31 32	18	3 2 4 7		0-6" Slough 6-18" Grey SAND, trace fine Gravel and Silt. Spotty SHEEN on soil.	8.2 17.9	Wet Wet	Moderate tar-like Moderate tar-like	
33 34	18	8 9 16 24		0-6" Slough. 6-18" Grey-brown SAND, trace fine Gravel and Silt.	0.5 0.4	Wet Wet	Moderate tar-like Moderate tar-like	
35 36 37 38 39 40 41 42 43 44 45 46 47				End of split spoon sampling at 34' due to running sands. Advanced augers to auger refusal.				
48 49 50 51 52 53 54 55 56				End of boring at auger refusal at 47' on apparent bedrock.				

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB79(22-26) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-87 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 4 1/4" Auger Sampling Method: 2' Split Spoon Driller : General Borings Weather: 70° Cloudy Sampler: AKRF/Becky Kinal	Drilling Start Time: 07:30, Date: 09-03-03 Finish Time: 10:30, Date: 09-03-03

Depth (feet)	Recovery (Inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
1 2	2	75 15		Dense grey-black medium GRAVEL (concrete fragments), some black SAND.	ND	Dry	None	
3 4	18	22 20 29 32		Dense black-stained SAND, trace fine Gravel, trace Silt. (Gravel appears to be coal fragments).	8.2 17.7	Dry Dry	Mild tar-like Mild tar-like	
5 6	18	23 33 22 20		Dense black-stained SAND and GRAVEL (coal fragments), trace Silt. Grey slag at 14-16".	42.0 15.0	Dry Dry	Mild petro-like Mild petro-like	PP-SB-87 (4-6) (VOCs, SVOCs, metals, CN)
7 8	12	35 33 20 20		Dense black-stained SAND, some fine Gravel, some Silt. (some Gravel is coal fragments).	16.2	Moist	Mild petro-like	
9 10	18	12 16 19 15		Dense black SAND and Gravel, some Silt. (Sand and Gravel appears to be coal fragments.)	46.6 71.0	Wet Wet	Moderate petro-like Moderate petro-like	
11 12	16	15 30 12 14		Medium dense black SAND and GRAVEL, trace Silt (coal fragments present in Sand and Gravel.) NAPL and SHEEN in soil.	159.0 59.0	Wet Wet	Strong petro-like Strong petro-like	PP-SB-87 (10-12) (VOCs, SVOCs, metals, CN)
13 14	18	15 6 5 3		Black medium-coarse SAND and GRAVEL, trace Silt (coal fragments present in Sand and Gravel.) SHEEN on soil.	151.0 139.0	Wet Wet	Strong petro-like Strong petro-like	
15 16	20	2 2 1 2		0-4" Black medium-coarse SAND and GRAVEL, trace Silt. SHEEN on soil. 4-20" Brown organic PEAT (roots, stems, leaves), trace Silt.	81.0 82.0	Wet Wet	Strong petro-like Strong petro-like	
17 18	15	2 3 3 3		Loose brown organic PEAT (roots, leaves), some brown Silt.	21.0 67.0	Moist Moist	Moderate petro-like Moderate petro-like	
19 20	18	4 5 15 10		0-12" Brown SILT, some organics (roots, leaves), slight plastic. 12-18" Gray medium-coarse SAND, trace Silt, Mica present.	20.7 47.0	Wet Wet	Moderate petro-like Moderate petro-like	
21 22	12	4 6 10 19		0-6" Grey SAND, some Silt, some fine Gravel. 10-12" Grey micaceous SAND and fine GRAVEL, some Silt.	20.3 5.0	Wet Wet	Moderate petro-like Moderate petro-like	
23 24		14 11 10 10		Dense grey SAND and GRAVEL, trace Silt, Mica present.	5.1 2.9	Wet Wet	Mild petro-like Mild petro-like	
25 26	24	4 6 6 15		Medium dense grey micaceous SAND, trace fine GRAVEL, trace Silt.	0.7 0.5	Wet Wet	Mild petro-like Mild petro-like	
27 28	24	4 5 5 7		0-12" Grey SAND and GRAVEL, trace Silt. 12-24" Grey SAND and GRAVEL, some Silt. (Mica present).	2.7 2.4	Wet Wet	Mild petro-like Mild petro-like	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-87(4-6) and PP-SB-87(10-12) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-87

Sheet 2 of 2

Drilling Method:	4 1/4" Auger
Sampling Method:	2' Split Spoon
Driller :	General Borings
Weather:	70° Cloudy
Sampler:	AKRF/Becky Kinal

Drilling Start	Finish
Time: 07:30	Time: 10:30
Date: 09-03-03	Date: 09-03-03

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected for Lab Analysis
29	18	4		Medium dense dark grey SAND and GRAVEL, some Silt, Mica present.	4.5	Wet	Mild petro-like	
		5						
		6			1.9	Wet	None	
30		7						
31	12	4		0-4" Dark grey SAND, some fine Gravel, trace Silt.	2.0	Wet	None	
		5		4-7" Black stained SAND, some fine Gravel, trace Silt.				
		4		7-12" Brown and dark grey SAND and GRAVEL.	2.1	Wet	None	
32		6						
33	24	4		0-18" Grey SAND, some fine Gravel, trace Silt.	2.0	Wet	Mild petro-like	
		4		Black stained at 16-18".				
		5		18-24" Light brown/orange SAND, trace Gravel, trace Silt, Mica present.	0.1	Wet	Mild petro-like	
34		7						
35	10	3		0-2" Orange-brown SAND, some Gravel, trace Silt.	0.1	Wet	Mild petro-like	
		5		2-4" Black stained SAND, some Gravel, trace Silt.				
		8		4-10" Grey SAND, trace fine Gravel, some Silt.	0.1	Wet	Mild petro-like	
36		9						
37	24	7		0-8" Orange-brown SAND, trace Silt, trace fine Gravel.	3.6	Wet	Mild petro-like	
		9						
		15		8-24" Grey SAND, some Silt, trace fine Gravel, black staining at 8-10".	0.4	Wet	None	
38		11						
39				End of split spoon sampling at 38' due to running sands.				
40				Advanced augers to auger refusal.				
41								
42								
43								
44								
45								
46								
47								
48								
49				End of boring at auger refusal on apparent bedrock at 48'.				
50								
51								
52								
53								
54								
55								
56								

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-87(4-6) and PP-SB-87(10-12) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-89**

Sheet 1 of 4

Drilling Method:	Rotosonic
Sampling Method:	10¼" diam core barrel
Driller :	Prosonic
Weather:	60° Cloudy
Sampler:	AKRF/Eric Sivers, Amy Sivers

Drilling	
Start	Finish
Time: 08:40	Time: 14:30
Date: 09-22-03	Date:09-22-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1			0-12" CONCRETE and ASPHALT.	116.5	Strong tar-like	Dry	
2			12-40" Black GRAVEL, little Sand, trace Silt.	181.3	Strong tar-like	Dry	
3	60			421	Strong tar-like	Dry	
4				450	Strong tar-like	Dry	
5			40-60" Black GRAVEL (cobbles), trace Sand, trace Silt. Heavy SHEEN on soil	454	Strong tar-like	Dry	
6							
7			0-24" Black GRAVEL, little SAND, trace Silt, trace Clays, trace Organics (peat-like). Heavy SHEEN on soil and water.	189.5	Strong tar-like	Wet	
8				108.9	Strong tar-like	Wet	
9			24-48" Grayish brown fine to medium SAND, trace Silt, trace clay, trace Gravel, trace organics (roots). Mild SHEEN on soil.	>808	Strong tar-like	Wet	
10				>629	Strong tar-like	Wet	
11				>891	Strong tar-like	Wet	PP-SB (15-16) and PP-SB (15-16) MS/MSD
12	96		48-84" Grayish brown SAND, little fine Gravel. Mild SHEEN on soil. Orange staining on plastic sleeve.	>863	Strong tar-like	Wet	
13				>788	Strong tar-like	Wet	
14			84-96" Brown GRAVEL, little Sand. Soil is NAPL-saturated	>998	Strong tar-like	Wet	
15							
16							
17			0-24" Black GRAVEL, little Sand, trace Silt. Heavy SHEEN on soil.	>308	Strong tar-like	Wet	
18			24-120" Grayish brown medium to coarse SAND, trace fine Gravel, trace Silt. 24-108" Light SHEEN on soil. 60-120" have 1/2"-thick layers of NAPL. 108-120" Heavy SHEEN on soil	>472	Strong tar-like	Wet	
19				>534	Strong tar-like	Wet	
20				>415	Strong tar-like	Wet	
21				>317	Strong tar-like	Wet	
22	120			>107.5	Strong tar-like	Wet	
23				25.9	Strong tar-like	Wet	
24				136.5	Strong tar-like	Wet	
25				56.8	Strong tar-like	Wet	
26				>343	Strong tar-like	Wet	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-89(15-16), PP-SB-89(15-16)MS/MSD and PP-SB-89(110-111) and duplicate PP-SB-S were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-89 Sheet 2 of 4
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: 60° Cloudy Sampler: AKRF/Eric Sivers, Amy Sivers	Drilling Start: Time: 08:40, Date: 09-22-03 Finish: Time: 14:30, Date: 09-22-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
27			0-24" Black SAND, trace fine Gravel. Soil is NAPL-saturated.	>1481	Strong tar-like	Wet	
28				>1000	Strong tar-like	Wet	
29			24-60" Black fine SAND. Soil is NAPL-saturated.	>1000	Strong tar-like	Wet	
30				>1000	Strong tar-like	Wet	
31	60			>1000	Strong tar-like	Wet	
32							
33							
34							
35							
36							
37			0-24" Black fine SAND, trace Silt. Soil is NAPL saturated.	>1296	Strong tar-like	Wet	
38			24-60" Black and gray fine SAND, little Silt. Layers of gray and black fine SAND, black layers are NAPL saturated.	NM	Strong tar-like	Wet	
39				NM	Strong tar-like	Wet	
40				NM	Strong tar-like	Wet	
41	60			>1179	Strong tar-like	Wet	
42							
43							
44							
45							
46							
47			0-120" Blackish gray fine SAND, little Silt. 0-60" Soil is NAPL-saturated in layers 1/8"-1/2" thick. 60-96" Soil has mild SHEEN.	>1000	Strong tar-like	Wet	
48				>1000	Strong tar-like	Wet	
49				>1000	Strong tar-like	Wet	
50				>1000	Strong tar-like	Wet	
51	120			>1000	Strong tar-like	Wet	
52				>473	Strong tar-like	Wet	
53				194.2	Strong tar-like	Wet	
54				153.9	Strong tar-like	Wet	
55				242.7	Strong tar-like	Wet	
56				102.4	Strong tar-like	Wet	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-89(15-16), PP-SB89(15-16)MS/MSD and PP-SB89(110-111) and duplicate were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-89**

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	60° Cloudy
Sampler:	AKRF/Eric Sivers, Amy Sivers

Drilling	
Start	Finish
Time: 08:40	Time: 14:30
Date: 09-22-03	Date: 09-22-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-48" Gray fine SAND, some Silt.	NM	Mild light petro-like	Wet	
57				18.7	Mild light petro-like	Wet	
58				14.9	Mild light petro-like	Wet	
59				16.3	Mild light petro-like	Wet	
60			48-96" Gray fine SAND, little Silt.	3.2	Mild light petro-like	Wet	
61	96			3.6	Mild light petro-like	Wet	
62				2.9	Mild light petro-like	Wet	
63				3.3	Mild light petro-like	Wet	
64							
65							
66			0-84" Grayish brown fine SAND, little Silt.	1.8	Mild light petro-like	Wet	
67				2.6	Mild light petro-like	Wet	
68				2.8	Mild light petro-like	Wet	
69				3.3	Mild light petro-like	Wet	
70				1.9	Mild light petro-like	Wet	
71	108			6.3	Mild light petro-like	Wet	
72				5.5	Mild light petro-like	Wet	
73			84-96" Grayish brown fine to medium SAND, trace silt.	3.0	Mild light petro-like	Wet	
74			96-120" Grayish brown fine SAND, little Silt.	6.3	Mild light petro-like	Wet	
75							
76			0-36" Grayish brown fine SAND, little Silt. 12-24" Soil has mild SHEEN.	4.9	Mild light petro-like	Wet	
77				9.2	Mild light petro-like	Wet	
78				98.8	Mild light petro-like	Wet	
79			36-60" Grayish brown fine SAND, little Silt. Orange staining.	106	Mild light petro-like	Wet	
80				128	Mild light petro-like	Wet	
81	96		60-96" Grayish brown fine SAND, little Silt. 72-84" Soil has mild SHEEN 84-96" Soil is NAPL-saturated.	155.2	Mild light petro-like	Wet	
82				228.4	Strong light petro-like	Wet	
83				>567	Strong light petro-like	Wet	
84							
85							
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-89(15-16), PP-SB89(15-16)MS/MSD and PP-SB89(110-111) and duplicate were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-89 Sheet 4 of 4
Environmental Consultants 116 East 27th Street, 7th Fl, New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10¼" diam core barrel Driller: Prosonic Weather: 60° Cloudy Sampler: AKRF/Eric Sivers, Amy Sivers	Drilling Start: Time: 08:40, Date: 09-22-03 Finish: Time: 14:30, Date: 09-22-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-24" Grayish brown fine to medium SAND, little Silt. NAPL in water.	222.4	Mild light petro-like	Wet	
87				74.1	Mild light petro-like	Wet	
88			24-96" Grayish brown fine to medium SAND, trace Silt.	NM	Mild light petro-like	Wet	
89				78.3	Mild light petro-like	Wet	
90				79.1	Mild light petro-like	Wet	
91	96			205	Mild light petro-like	Wet	
92				156.1	Mild light petro-like	Wet	
93				159.8	Mild light petro-like	Wet	
94				124.9	Mild light petro-like	Wet	
95				53.8	Mild light petro-like	Wet	
96			0-36" Very loose grayish brown fine SAND, little Silt. NAPL in soil.	35.4	Moderate sweet, light petro-like	Wet	
97				90.1	Moderate sweet, light petro-like	Wet	
98				40.4	Moderate sweet, light petro-like	Wet	
99			36-48" Gray fine to medium SAND, trace Silt, some orange staining.	143.6	Moderate sweet, light petro-like	Wet	
100			48-120" Grayish brown fine SAND, trace Silt.	146.9	Moderate sweet, light petro-like	Wet	
101	120			24.8	Moderate sweet, light petro-like	Wet	
102				57.7	Moderate sweet, light petro-like	Wet	
103				59.1	Moderate sweet, light petro-like	Wet	
104				193.6	Moderate sweet, light petro-like	Wet	
105				138.3	Moderate sweet, light petro-like	Wet	
106			0-72" Grayish brown fine to medium SAND, trace fine sand, trace Silt.	60.6	Moderate sweet, light petro-like	Wet	PP-SB-89 (110-111) & duplicate
107				113.2	Moderate sweet, light petro-like	Wet	
108				91.1	Moderate sweet, light petro-like	Wet	
109				130.6	Moderate sweet, light petro-like	Wet	
110				129.8	Moderate sweet, light petro-like	Wet	
111	120			166.6	Moderate sweet, light petro-like	Wet	
112			72-96" Dark gray GRAVEL, trace Sand, trace Silt. (Gravel is angular rock pieces.)	10.8	Moderate sweet, light petro-like	Wet	
113				14.2	Moderate sweet, light petro-like	Wet	
114			96-120" Brownish gray SAND, little Gravel. (Gravel is angular and rounded rock pieces.)	26.5	Moderate sweet, light petro-like	Wet	
115			72-120" is WEATHERED BEDROCK.	98.4	Moderate sweet, light petro-like	Wet	
116			End of boring at 116' at apparent weathered bedrock.				

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-89(15-16), PP-SB89(15-16)MS/MSD and PP-SB89(110-111) and duplicate were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-90**

Sheet 1 of 5

Drilling Method:	Rotosonic	**Drilling**	
Sampling Method:	10'/4" diam core barrel	**Start**	**Finish**
Driller :	Prosonic	**Time: 09:00**	**Time: 11:00**
Weather:	75° and clear	**Date: 09-17-03**	**Date: 09-17-03**
Sampler:	AKRF/Amy Sivers		

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-12" ASPHALT and CONCRETE	1.2	None	Dry	
1			12-60" Black GRAVEL, little Sand, trace Silt. Gravel is clinker-like.	4.7	Mild coal-like	Dry	
2				16	Moderate coal-like	Wet	
3	60			15.5	Moderate coal-like	Wet	
4				22.1	Moderate coal-like	Wet	
5							
6			0-12" Black GRAVEL, trace Sand , trace Silt. SHEEN on water Sleeve full of water, fines may been lost.	45	Moderate tar-like	Wet	
7							
8							
9							
10							
11	12						
12							
13							
14							
15							
16			0-24" Black SAND, some fine Gravel, some Silt, trace Clay, trace Organics. SHEEN on soil.	350	Strong tar-like	Wet	SB-90 (24-26) and Duplicate (VOCs, SVOCs, Metals, CN)
17				>200	Strong tar-like	Wet	
18			24-48" Green-stained dense gray SAND, some Silt, trace Clay.	145.6	Strong tar-like	Wet	
19				>542	Strong tar-like	Wet	
20			48-72" Gray and black SAND, trace fine Gravel, trace Silt.	>500	Strong tar-like	Wet	
21	120			>500	Strong tar-like	Wet	
22			72-120" Gray and black SAND, trace fine Gravel. Soil is NAPL-saturated.	>500	Strong tar-like	Wet	
23				>500	Strong tar-like	Wet	
24				>500	Strong tar-like	Wet	
25				>500	Strong tar-like	Wet	
26							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples SB-90 (24-26), duplicate sample PP-SB-T(24-26), SB-90 (74-76), SB-90 (94-96) and SB-90 (114-116) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-90 (26-28)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-90
	AKRF Project Number : 03118-0309	Sheet 2 of 5

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Rotosonic	Drilling	
Sampling Method:	10"/4" diam core barrel	Start	Finish
Driller :	Prosonic	Time: 09:00	Time: 11:00
Weather:	75° and clear	Date: 09-17-03	Date: 09-17-03
Sampler:	AKRF/Amy Sivers		

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-120" Dark gray fine to medium SAND, trace coarse Sand, trace fine Gravel. NAPL saturated.	>500	Strong tar-like	Wet	PP-SB90 (26-28) (Oil ID)
27				>500	Strong tar-like	Wet	
28				>500	Strong tar-like	Wet	
29				>500	Strong tar-like	Wet	
30				>500	Strong tar-like	Wet	
31	120			>500	Strong tar-like	Wet	
32				>500	Strong tar-like	Wet	
33				>500	Strong tar-like	Wet	
34				>500	Strong tar-like	Wet	
35				>500	Strong tar-like	Wet	
36			0-120" Dark gray fine to medium SAND, trace coarse Sand, trace fine Gravel. NAPL saturated.	>500	Strong tar-like	Wet	
37				>500	Strong tar-like	Wet	
38				>500	Strong tar-like	Wet	
39				>500	Strong tar-like	Wet	
40				>500	Strong tar-like	Wet	
41	120			>500	Strong tar-like	Wet	
42				>500	Strong tar-like	Wet	
43				>500	Strong tar-like	Wet	
44				>500	Strong tar-like	Wet	
45				>500	Strong tar-like	Wet	
46			0-120" Dark gray fine to medium SAND, trace fine Gravel. NAPL saturated.	>500	Strong tar-like	Wet	
47				>500	Strong tar-like	Wet	
48				>500	Strong tar-like	Wet	
49				>500	Strong tar-like	Wet	
50				>500	Strong tar-like	Wet	
51	120			>500	Strong tar-like	Wet	
52				>500	Strong tar-like	Wet	
53				>500	Strong tar-like	Wet	
54				>500	Strong tar-like	Wet	
55				>500	Strong tar-like	Wet	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples SB-90 (24-26), duplicate sample PP-SB-T(24-26), SB-90 (74-76), SB-90 (94-96) and SB-90 (114-116) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-90 (26-28)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-90 Sheet 3 of 5
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: 75° and clear Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:00, Date: 09-17-03 Finish: Time: 11:00, Date: 09-17-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-120" Black fine micaceous SAND, little Silt. Soil is NAPL-saturated.	>1152	Strong tar-like	Wet	
57				>500	Strong tar-like	Wet	
58				>500	Strong tar-like	Wet	
59				>500	Strong tar-like	Wet	
60				>500	Strong tar-like	Wet	
61	120			>500	Strong tar-like	Wet	
62				>500	Strong tar-like	Wet	
63				>500	Strong tar-like	Wet	
64				>500	Strong tar-like	Wet	
65				>500	Strong tar-like	Wet	
66			0-120" Black fine micaceous SAND, some Silt. Soil is NAPL-saturated.	>800	Strong tar-like	Wet	SB-90 (74-76) (VOCs, SVOCs, Metals, CN)
67				>500	Strong tar-like	Wet	
68				>500	Strong tar-like	Wet	
69				>500	Strong tar-like	Wet	
70				>500	Strong tar-like	Wet	
71	120			>500	Strong tar-like	Wet	
72				>500	Strong tar-like	Wet	
73				>500	Strong tar-like	Wet	
74				>500	Strong tar-like	Wet	
75				>500	Strong tar-like	Wet	
76			0-78" Grayish brown fine SAND, little Silt. 0-24" Soil is NAPL-saturated.	>200	Strong tar-like	Wet	
77				>200	Strong tar-like	Wet	
78				33.1	Mild tar-like	Wet	
79				48.1	Mild tar-like	Wet	
80				9.4	Mild tar-like	Wet	
81	78			8.8	Mild tar-like	Wet	
82							
83							
84							
85							
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples SB-90 (24-26), duplicate sample PP-SB-T(24-26), SB-90 (74-76), SB-90 (94-96) and SB-90 (114-116) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-90 (26-28)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-90 Sheet 4 of 5
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: 75° and clear Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:00, Date: 09-17-03 Finish: Time: 11:00, Date: 09-17-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
87			0-80" Grayish brown, dense fine micaceous SAND, some Silt. Slight oil-like smearing on top 12" of sleeve.	8.4	None	Wet	PP-SB-90 (94-96) (VOCs, SVOCs, metals, CN)
88				60.2	None	Wet	
89				1	None	Wet	
90				1.4	None	Wet	
91	90			5.1	None	Wet	
92				9.9	None	Wet	
93				3.3	None	Wet	
94							
95							
96							
97			0-48" Gray and black SAND, some Silt. NAPL saturated.	>200	Strong tar-like	Wet	
98				>200	Strong tar-like	Wet	
99				>200	Strong tar-like	Wet	
100				>200	Strong tar-like	Wet	
101	120		48-120" Grayish brown fine SAND, some Silt. Oil-like smear on liner.	87.6	Strong tar-like	Wet	
102				100.5	Mild tar-like	Wet	
103				53.6	Mild tar-like	Wet	
104				42.1	Mild tar-like	Wet	
105				16.5	Mild tar-like	Wet	
106				63.3	Mild tar-like	Wet	
107			0-48" Grayish brown fine micaceous SAND, some Silt.	79.3	Mild tar-like	Wet	SB-90 (114-116) (VOCs, SVOCs, metals, CN)
108				148.9	Mild tar-like	Wet	
109				12.6	Mild tar-like	Wet	
110				55.7	Mild tar-like	Wet	
111	72		48-72" Grayish brown GRAVEL (rock pieces) and fine SAND, little Silt.	52.1	Mild tar-like	Wet	
112				12.6	Mild tar-like	Wet	
113							
114							
115							
116							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples SB-90 (24-26), duplicate sample PP-SB-T(24-26), SB-90 (74-76), SB-90 (94-96) and SB-90 (114-116) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-90 (26-28)FP was tested for fingerprint analysis.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-90**

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	75° and clear
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 09:00	Time: 11:00
Date: 09-17-03	Date: 09-17-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-24" Grayish brown fine SAND, little Silt, fine Gravel.	2.6	None	Moist	
117				2.3	None	Moist	
118			24-108" Rock GRAVEL and powder.	3.1	None	Dry	
119			Bedrock at approximately 118' below grade.	1.9	None	Dry	
120				1.4	None	Dry	
121	108			2.1	None	Dry	
122				0.6	None	Dry	
123				1.9	None	Dry	
124				0.3	None	Dry	
125							
126							
127			End of boring at 126' in apparent competent bedrock.				
128							
129							
130							
131							
132							
133							
134							
135							
136							
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140							
141							
142							
143							
144							
145							
146							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples SB-90 (24-26), duplicate sample PP-SB-T(24-26), SB-90 (74-76), SB-90 (94-96) and SB-90 (114-116) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-90 (26-28)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-92
	AKRF Project Number : 03118-0309	Sheet 1 of 2

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	4 1/4" Auger
Sampling Method:	2' Split Spoon
Driller :	General Borings
Weather:	80° sunny
Sampler:	AKRF/Julie Foley

Drilling	Start	Finish
Time	11:30	14:30
Date	09-10-03	09-10-03

Surface Condition: Asphalt

Depth (feet)	Recovery (Inches)	Blow Counts	Soil Type	Description	PID Reading (ppm)	Moisture	Odor	Samples Collected Lab Analysis
1 2	18	4 8 6 4		6" Asphalt. 6-18" Dark grey and black SILT and SAND, compacted trace Gravel (coal).	4.7 3.8	Dry Dry	Not recorded Not recorded	
3 4	12	8 5 7 5		Medium dense dark grey-brown SILT and SAND, trace Gravel (coal).	2.1	Dry	Not recorded	
5 6	18	6 6 6 11		0-6" Dark grey-brown SILT and SAND, trace rock Gravel. 6-18" Orange brown SAND, little Silt, trace Gravel.	4.0 5.9	Dry Dry	Not recorded Not recorded	
7 8	12	16 13 14 13		Dense orange-brown SAND, little Gravel, trace Silt. Black staining in two, 1" layers.	10.0	Dry	Not recorded	SB-92 (6-8), VOCs, SVOCs
9 10	12	17 15 16 14		Dense orange-brown SAND, little Gravel.	1.3 2.5	Dry Dry	None None	
11 12	16	11 10 9 6		Dense orange-brown SAND, little Gravel. Some darker orange layers.	ND ND	Dry Dry	None None	
13 14	18	6 6 6 5		Dense light orange SAND, little Gravel. Some white and orange layers.	4.3 8.4	Moist Moist	None None	
15 16	12	3 3 3 3		Medium dense light orange SAND, little Gravel.	7.4	Wet	None	
17 18	24	2 3 5 5		Medium dense grey-brown SAND, trace fine Gravel.	0.4 0.7	Wet Wet	None None	
19 20	24	6 9 7 8		0-12" Grey-brown fine-medium SAND, some Silt. 12-24" Grey-brown fine-medium SAND, some Silt (micaceous).	ND 0.8	Wet Wet	None None	
21 22	18	3 3 4 3		Medium dense brown micaceous fine SAND, trace Silt.	1.0 2.0	Wet Wet	None None	
23 24	18	4 2 2 3		Medium dense brown micaceous fine SAND, trace Silt.	0.7 0.9	Wet Wet	None None	
25 26	24	1 1 2 3		Loose brown micaceous fine-medium SAND, trace Silt.	8.3 12.0	Wet Wet	None None	PP-SB-92(24-26) (VOCs, SVOCs)
27 28	18	3 4 7 9		Medium dense brown micaceous fine-medium SAND, trace Silt.	7.2 5.1	Wet Wet	None None	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-92(6-8) and PP-SB-92(24-26) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

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116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-92**

Sheet 2 of 2

Drilling Method:	4 1/4" Auger	Drilling	
Sampling Method:	2' Split Spoon	Start	Finish
Driller :	General Borings	Time: 11:30	Time: 14:30
Weather:	80° sunny	Date: 09-10-03	Date: 09-10-03
Sampler:	AKRF/Julie Foley		

Depth (feet)	Recovery (inches)	Blow Counts	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Moisture	Odor	Samples Collected Lab Analysis
29	24	2		Medium dense brown micaceous fine-medium SAND, trace Silt.	7.2	Wet	None	
		5						
		6			5.1	Wet	None	
30		8						
31	18	1		Loose brown micaceous fine-medium SAND, trace Silt.	ND	Wet	None	
		1						
		1			0.8	Wet	None	
32		2						
33	18	3		Medium dense brown micaceous fine-medium SAND, trace Silt.	0.8	Wet	None	
		4						
		6			1.6	Wet	None	
34		7						
35				End of split spoon sampling at 34' due to running sands.				
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55				End of boring at auger refusal at 54' on apparent bedrock.				
56								

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Sample PP-SB92(6-8) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-93 Sheet 1 of 4

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 09:40	Time: 11:40
Date: 09-24-03	Date:09-24-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1	72		0-6" ASPHALT and CONCRETE 6-72" Dark brown and black-stained SAND, trace fine Gravel, trace Silt.	21	Strong tar-like	Dry	
2				51	Strong tar-like	Dry	
3				115.6	Strong tar-like	Dry	
4				108	Strong tar-like	Dry	
5				184.2	Strong tar-like	Dry	
6				205.3	Strong tar-like	Dry	
7	5		0-24" Dark gray and black-stained SAND, little Silt, trace Clay, trace fine Gravel.	>523	Strong petro-like	Wet	PP-SB-93 (15-16) (VOCs, SVOCs)
8				>617	Strong petro-like	Wet	
9			24-60" Brown fine SAND, trace Silt. Oil-like staining on sleeve.	>653	Strong petro-like	Wet	
10				>761	Strong petro-like	Wet	
11				>752	Strong petro-like	Wet	
12							
13							
14							
15							
16							
17	10		0-120" Grayish brown SAND, some orange staining. NAPL in soil.	193.1	Strong sweet, light petro-like	Wet	
18				222.2	Strong sweet, light petro-like	Wet	
19				268	Strong sweet, light petro-like	Wet	
20				239.2	Strong sweet, light petro-like	Wet	
21				228.2	Strong sweet, light petro-like	Wet	
22				161.4	Strong sweet, light petro-like	Wet	
23				200.6	Strong sweet, light petro-like	Wet	
24				89.6	Strong sweet, light petro-like	Wet	
25				>304	Strong sweet, light petro-like	Wet	
26				>728	Strong sweet, light petro-like	Wet	

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-93 (15-16) and PP-SB-93 (89-90) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270). Sample PP-SB-93 (62-63)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-93 Sheet 2 of 4
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: 65° and sunny Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:40, Date: 09-24-03 Finish: Time: 11:40, Date:09-24-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	120		0-48" SLOUGH. NAPL saturated.	NR	Not recorded	Wet	
27				NR	Not recorded	Wet	
28				NR	Not recorded	Wet	
29				NR	Not recorded	Wet	
30			48-120" Grayish brown fine to medium SAND, trace Silt.	83	Moderate sweet, light petro-like	Wet	
31				62.5	Moderate sweet, light petro-like	Wet	
32				32.3	Moderate sweet, light petro-like	Wet	
33			84-96" NAPL in soil and oil-like staining on sleeve.	>289	Moderate sweet, light petro-like	Wet	
34				100.3	Strong sweet, light petro-like	Wet	
35				81	Strong sweet, light petro-like	Wet	
36	120		0-120" Dark gray fine SAND, little Silt.	9	None	Wet	
37				11.9	None	Wet	
38				9.7	None	Wet	
39				12.3	None	Wet	
40				8.8	Mild septic-like	Wet	
41				9.4	Mild septic-like	Wet	
42				7.4	Mild septic-like	Wet	
43				9.9	Mild septic-like	Wet	
44				6.7	Mild septic-like	Wet	
45				8.4	Mild septic-like	Wet	
46	120		0-120" Gray fine SAND, little Silt, some orange staining at 96'.	ND	None	Wet	
47				1.6	None	Wet	
48				3	None	Wet	
49				5.3	None	Wet	
50				3.9	None	Wet	
51				0.9	None	Wet	
52				0.6	None	Wet	
53				0.6	Mild light petro-like	Wet	
54				0.1	Mild light petro-like	Wet	
55				0.1	Mild light petro-like	Wet	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-93 (15-16) and PP-SB-93 (89-90) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270). Sample PP-SB-93 (62-63)FP was tested for fingerprint analysis.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-93

Sheet 3 of 4

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 09:40	Time: 11:40
Date: 09-24-03	Date:09-24-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	120		0-72" Grayish brown fine to medium SAND, trace Silt.	2.5	None	Wet	PP-SB-93 (62-63) (Oil ID)
57				2.5	None	Wet	
58				3.6	None	Wet	
59				7.2	None	Wet	
60				18.7	None	Wet	
61				69.8	Strong tar-like	Wet	
62			72-114" Soil is NAPL saturated, sleeve not cut open, PID not measured.	>643	Strong tar-like	Wet	
63				NR	NR	Wet	
64				NR	NR	Wet	
65							
66							
	120		0-120" Grayish brown fine to medium SAND, trace Silt.	6.1	Mild sweet, light petro-like	Wet	
67				52.3	Mild sweet, light petro-like	Wet	
68				113.5	Mild sweet, light petro-like	Wet	
69				113.6	Mild sweet, light petro-like	Wet	
70				62.9	Mild sweet, light petro-like	Wet	
71				106	Mild sweet, light petro-like	Wet	
72				84.7	Mild sweet, light petro-like	Wet	
73				111.6	Mild sweet, light petro-like	Wet	
74				106.2	Mild sweet, light petro-like	Wet	
75				71.5	Mild sweet, light petro-like	Wet	
76							
	120		0-48" Grayish brown fine to medium SAND, trace coarse SAND, trace Silt.	184.2	Mild sweet, light petro-like	Wet	
77				170.5	Mild sweet, light petro-like	Wet	
78				204	None	Wet	
79				98.1	None	Wet	
80			48-120" Dark gray GRAVEL (angular rock pieces), some SAND, trace Silt.	68.9	None	Wet	
81				107.7	None	Wet	
82				53.4	None	Wet	
83				39.4	None	Wet	
84				33.6	Mild sweet, light petro-like	Wet	
85				71.9	Mild sweet, light petro-like	Wet	
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-93 (15-16) and PP-SB-93 (89-90) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270). Sample PP-SB-93 (62-63)FP was tested for fingerprint analysis.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-93 Sheet 4 of 4
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: 65° and sunny Sampler: AKRF/Amy Sivers	Drilling Start: Time: 09:40, Date: 09-24-03 Finish: Time: 11:40, Date:09-24-03

Depth (feet)	Recovery (Feet)	Soil Type	Surface Con PP-SB-93 (89-90) (VOCs, SVOCs, metals, CN)	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-36" Grayish brown GRAVEL, little SAND, trace Silt.	10.3	Mild petro-like	Wet	
87				18.9	Mild petro-like	Wet	PP-SB93(89-90) (VOCs, SVOCs)
88	48			38.6	Mild petro-like	Wet	
89			36-48" Dark greenish gray GRAVEL and SAND, trace Silt, mica-rich.	100.9	Moderate petro-like	Moist	
90							
91			End of boring at 90' in apparent competent bedrock.				
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-93 (15-16) and PP-SB-93 (89-90) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270). Sample PP-SB-93 (62-63)FP was tested for fingerprint analysis.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY	Boring No. SB-94
AKRF Project Number : 03118-0309	Sheet 1 of 3

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	60° and overcast
Sampler:	AKRF/Julie Foley, Amy Sivers

Drilling	
Start	Finish
Time: 08:00	Time: 10:30
Date: 09-18-03	Date: 09-18-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	60		0-9" ASPHALT and pulverized CONCRETE.	2.7	None	Dry	PP-SB-94 (1-2) (VOCs, SVOCs, metals, CN)
1			9-24" Gray and black-stained SILT, some Sand, little Gravel (rock).	3.1	Moderate tar-like	Moist	
2			24-48" Orange-brown SILT, some Sand (compacted, stiff).	0.8	None	Moist	
3				0.7	None	Moist	
4			46-54" Pulverized CONCRETE.	0.4	None	Dry	
			54-60" Light brown SAND, little Silt.				
5							
6							
	72		0-6" SLOUGH.	1.3	None	Wet	
7			6-60" Orange-brown SAND, little fine to coarse GRAVEL, trace Silt.	0.1	None	Moist	
8				ND	None	Moist	
9				0.1	None	Moist	
10				2.9	None	Moist	
11			60-66" Grayish brown SAND, some fine Gravel, trace Silt.	40.9	Moderate petro-like	Wet	
12							
13							
14							
15							
16							
	84		0-12" Grayish brown SAND, little Silt. Soil is NAPL-saturated.	NR	Strong petro-like	Wet	PP-SB-94 (18.5-19) (VOCs, SVOCs)
17			12-24" Grayish brown SAND, trace Silt, little fine Gravel. Soil is NAPL-saturated.	>200	Strong petro-like	Wet	
18			24-30" Grayish brown medium SAND, little Silt, trace fine Gravel. NAPL droplets.	>300	Strong petro-like	Wet	
19			30-60" Grayish brown micaceous SILT, some fine Sand. Mottled with NAPL.	59.6	Mild petro-like	Wet	
20				113.1	Mild petro-like	Wet	
21			60-66" Grayish brown micaceous SAND and SILT. NAPL mottling in soil.	55.1	Mild petro-like	Wet	
22							
23							
24							
25							
26							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB-94(1-2) was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-94(18.5-19) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-94 Sheet 2 of 3
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10¼" diam core barrel Driller : Prosonic Weather: 60° and overcast Sampler: AKRF/Julie Foley, Amy Sivers	Drilling Start: Time: 08:00, Date: 09-18-03 Finish: Time: 10:30, Date: 09-18-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-96" Grayish brown fine micaceous SAND, trace Silt.	8.2	Mild light petro-like	Wet	
27				9.3	Mild light petro-like	Wet	
28				20.3	Mild light petro-like	Wet	
29				4.7	Mild light petro-like	Wet	
30				11.2	Mild light petro-like	Wet	
31	96			59.4	Mild light petro-like	Wet	
32				20.2	Mild light petro-like	Wet	
33				7.8	Mild light petro-like	Wet	
34							
35							
36			0-24" Grayish brown fine to medium micaceous SAND, trace Silt. NAPL in soil.	38.9	Moderate petro-like	Wet	
37				3.6	None	Wet	
38			24-96" Grayish brown fine micacaceous SAND, trace Silt.	2.8	None	Wet	
39				2.0	None	Wet	
40				1.7	None	Wet	
41	86			1.7	None	Wet	
42				1.5	None	Wet	
43							
44							
45							
46			0-24" Grayish brown fine to medium micaceous SAND, trace Silt.	0.9	None	Wet	
47				0.2	None	Wet	
48			24-36" Grayish brown SILT, little SAND, little fine to medium Gravel.	0.4	None	Wet	
49			36-60" Gray ROCK pieces and powder.	ND	None	Dry	
50				ND	None	Dry	
51	120		60-105" Grayish green WEATHERED BEDROCK (rock pieces, little SAND, trace Gravel (cobble), trace Silt, trace Clay.)	ND	None	Dry	
52				ND	None	Dry	
53				ND	None	Dry	
54				ND	None	Dry	
55				ND	None	Dry	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB-94(1-2) was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-94(18.5-19) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-94 Sheet 3 of 3
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller: Prosonic Weather: 60° and overcast Sampler: AKRF/Julie Foley, Amy Sivers	Drilling Start: Time: 08:00, Date: 09-18-03 Finish: Time: 10:30, Date: 09-18-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
57	84		0-12" Grayish green WEATHERED BEDROCK (rock pieces), little SAND, trace Gravel (cobble), trace Silt, trace Clay.	ND	None	Wet	
58				0.2	None	Wet	
59			12-84" Cored pieces of gneissic ROCK, trace Sand, trace Silt.	ND	None	Wet	
60				ND	None	Wet	
61				ND	None	Wet	
62				ND	None	Wet	
63				ND	None	Wet	
64							
65							
66							
67			End of boring at 66' in apparent competent bedrock.				
68							
69							
70							
71							
72							
73							
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75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Sample PP-SB-94(1-2) was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012). Sample PP-SB-94(18.5-19) was analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-95**

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Julie Foley, Amy Sivers

Drilling	
Start	Finish
Time: 07:45	Time: 10:30
Date: 09-25-03	Date: 09-25-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-6" ASPHALT and GRAVEL	1.2	Mild tar-like	Dry	
1			6-30" Black SAND and GRAVEL (slag), little Silt.				
				0.2	Mild tar-like	Dry	
2							
				1.3	None	Dry	
3	48		30-36" Orange brown SAND and SILT (compacted), little fine Gravel.				
			36-48" Light orange brown SAND, little Silt, little Gravel.	2.0	None	Dry	
4							
5							
6							
			0-6" SLOUGH.	8.0	None	Dry	
7			6-30" Orange brown SAND, trace Silt, little Gravel.				
				1.4	None	Moist	
8							
				3.6	None	Dry	PP-SB-95 (6.5-8) (VOCs & SVOCs)
9			30-48" Light orange brown SAND, trace Silt, little fine Gravel.				
				2.5	None	Dry	
10							
11	48						
12							
13							
14							
15							
16							
			0-36" SLOUGH - loose brown SAND.	6.9	Mild sweet, light petro-like	Wet	
17							
				8.3	Mild sweet, light petro-like	Wet	
18							
				12.4	Mild sweet, light petro-like	Wet	
19							
			36-48" Brown medium to coarse SAND, trace fine Sand.	10.7	Mild sweet, light petro-like	Wet	
20							
			48-60" Brown fine to medium SAND, trace Silt.	24.6	Mild septic-like	Wet	
21	120						
			60-120" Gray brown fine SAND, little Silt, some dark gray staining.	6.7	Mild septic-like	Wet	
22							
				5.7	Mild septic-like	Wet	
23							
				12.5	Moderate sweet, light petro-like	Wet	
24							
				29.8	Moderate sweet, light petro-like	Wet	
25							
				60.8	Moderate sweet, light petro-like	Wet	
26							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-95(6.5-8) and PP-SB95(44-45) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-95**

Sheet 2 of 4

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Julie Foley, Amy Sivers

Drilling	
Start	Finish
Time: 07:45	Time: 10:30
Date: 09-25-03	Date: 09-25-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	120		0-60" Grayish brown fine to medium SAND, trace Silt.	6.2	Moderate sweet, light petro-like	Wet	
27				12.4	Moderate sweet, light petro-like	Wet	
28				29.2	Moderate sweet, light petro-like	Wet	
29				18.1	Moderate sweet, light petro-like	Wet	
30				84.0	Moderate sweet, light petro-like	Wet	
31			60-120" Grayish brown fine SAND, little Silt.	21.0	Moderate sweet, light petro-like	Wet	
32				106.0	Moderate sweet, light petro-like	Wet	
33				44.0	Moderate sweet, light petro-like	Wet	
34				40.0	Moderate sweet, light petro-like	Wet	
35				117.4	Moderate sweet, light petro-like	Wet	
36	120		0-120" Grayish brown fine SAND, little Silt.	NR	Moderate sweet, light petro-like	Wet	PP-SB-95 (44-45) (VOCs & SVOCs)
37				90.8	Moderate sweet, light petro-like	Wet	
38				77.7	Moderate sweet, light petro-like	Wet	
39				42.0	Moderate sweet, light petro-like	Wet	
40				182.7	Moderate sweet, light petro-like	Wet	
41				78.7	Moderate sweet, light petro-like	Wet	
42				119.0	Moderate sweet, light petro-like	Wet	
43				50.0	Moderate sweet, light petro-like	Wet	
44				122.8	Moderate sweet, light petro-like	Wet	
45				99.9	Moderate sweet, light petro-like	Wet	
46	120		0-120" Grayish brown fine to medium SAND, little Silt.	25.8	Mild sweet, light petro-like	Wet	
47				15.5	Mild sweet, light petro-like	Wet	
48				40.7	Mild sweet, light petro-like	Wet	
49				85.9	Mild sweet, light petro-like	Wet	
50				15.5	Mild sweet, light petro-like	Wet	
51				77.5	Mild sweet, light petro-like	Wet	
52				33.5	Mild sweet, light petro-like	Wet	
53				31.9	Mild sweet, light petro-like	Wet	
54				35.2	Mild sweet, light petro-like	Wet	
55				51.8	Mild sweet, light petro-like	Wet	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-95(6.5-8) and PP-SB95(44-45) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-95

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Julie Foley, Amy Sivers

Drilling Start	Finish
Time: 07:45	Time: 10:30
Date: 09-25-03	Date: 09-25-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	120		0-120" Grayish brown fine to medium SAND, trace Silt.	7.0	Mild petro-like	Wet	
57				12.1	Mild petro-like	Wet	
58				18.5	Mild petro-like	Wet	
59				13.5	Mild petro-like	Wet	
60				6.3	Mild petro-like	Wet	
61				5.6	Mild petro-like	Wet	
62				9.7	Mild petro-like	Wet	
63				11.7	Mild petro-like	Wet	
64				6.3	Mild petro-like	Wet	
65				7.0	Mild petro-like	Wet	
66	120		0-120" Grayish brown fine to medium SAND, trace Silt.	0.8	None	Wet	
67				0.8	None	Wet	
68				0.7	None	Wet	
69				0.7	None	Wet	
70				0.7	None	Wet	
71				0.8	None	Wet	
72				1.1	None	Wet	
73				0.8	None	Wet	
74				2.3	None	Wet	
75					None	Wet	
76	120		0-96" Grayish brown fine to medium SAND, trace Silt.	ND	None	Wet	
77				ND	None	Wet	
78				0.5	None	Wet	
79				0.5	None	Wet	
80				0.6	None	Wet	
81				0.5	None	Wet	
82				0.6	None	Wet	
83				0.6	None	Wet	
84			96-120" Gneissic rock GRAVEL, trace Silt, trace Sand (weathered bedrock).	0.7	None	Wet	
85				0.8	None	Wet	
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-95(6.5-8) and PP-SB95(44-45) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY	
AKRF Project Number : 03118-0309	
Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Julie Foley, Amy Sivers

Boring No. SB-95

Sheet 4 of 4

Drilling	
Start	Finish
Time: 07:45	Time: 10:30
Date: 09-25-03	Date: 09-25-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
87	96		0-96" Gneissic rock (GRAVEL), trace Silt, trace Sand (weathered bedrock).	0.5	None	Wet	
88				0.5	None	Wet	
89				0.4	None	Wet	
90				0.3	None	Wet	
91				0.9	None	Wet	
92				0.4	None	Wet	
93				4.7	None	Wet	
94							
95							
96							
97			End of boring at 96' in apparent weathered bedrock.				
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-95(6.5-8) and PP-SB95(44-45) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-97
Environmental Consultants	AKRF Project Number : 03118-0309	Sheet 1 of 2
116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 4 1/4" Auger Sampling Method: 2' Split Spoon Driller : General Borings Weather: 70° Sunny Sampler: AKRF/Julie Foley	Drilling Start Time: 08:45 Date: 09-10-03 Finish Time: Date: 09-10-03

Surface Condition: Asphalt

Depth (feet)	Recovery (Inches)	Blow Counts	Soil Type	Description	PID Reading (ppm)	Moisture	Odor	Samples Collected Lab Analysis
				Augered through 0-6" ASPHALT.				
1 2	12	6 5 7		Medium dense dark grey-black SAND and SILT, trace Gravel.	0.7 0.8	Dry Dry	Mild tar-like Mild tar-like	PP-SB-97(0.5-2)
3 4	18	6 4 6 9		Medium dense orange-brown SILT, some Sand, trace Gravel.	ND ND	Dry Moist	None None	
5 6	16	8 6 8 11		Medium dense orange-brown coarse-medium SAND, trace Gravel, fine Sand a	ND ND	Moist Moist	None None	
7 8	18	14 10 6 9		Dense light orange-brown SAND, little Gravel.	ND ND	Moist Moist	None None	
9 10	12	10 5 7 5		Medium dense light orange-brown SAND, little Gravel, trace Silt.	ND ND	Moist Moist	None None	
11 12	12	5 4 5 5		Medium dense orange-brown SAND, trace Gravel, trace Silt.	ND ND	Moist Moist	None None	
13 14	8	5 5 6 7		Medium dense orange-brown SAND, trace Gravel, trace Silt.	ND ND	Moist Moist	None None	
15 16	24	2 2 2 2		Medium dense orange-brown SAND, little Gravel, trace Silt.	ND ND	Moist Moist	None None	
17 18	12	6 6 9 9		0-10" Orange-brown SAND, trace Silt, trace Gravel. 10-12" Light grey SILT, trace Sand, compacted.	ND ND	Moist Wet	None	
19 20	18	19 17 19 16		0-6" Slough. 0-12" Light grey micaceous SILT, little Sand, little Gravel. (Very weathered biotite-rich nodules and quartzite). 12-18" Light grey micaceous fine SAND, little Silt.	ND ND	Wet Wet	None None	
21 22	12	8 7 8 13		2" Slough. 10" Grey micaceous SILT and fine SAND, trace Gravel.	ND	Wet	None	SB-97 (20-22) VOCs, SVOCs.
23 24	18	18 17 50		4" Slough. 4-14" Grey-brown mostly-fine SAND, little Silt, trace Gravel. 14-18" Grey-brown green biotite-rich rock GRAVEL (weathered bedrock).				
25 26								
27 28								

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB97(0.5-2) and PP-SB97(20-22) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-98**

Sheet 1 of 2

Drilling Method:	4 1/4" Auger
Sampling Method:	2' Split Spoon
Driller :	General Borings
Weather:	70° Sunny
Sampler:	AKRF/Julie Foley

Drilling	Start	Finish
Time	08:30	11:30
Date	09-11-03	09-11-03

Surface Condition: Asphalt.

Depth (feet)	Recovery (Inches)	Blow Counts	Soil Type	Description	PID Reading (ppm)	Moisture	Odor	Samples Collected Lab Analysis
				Augered through 0-6" ASPHALT.				
1–2	12	6 8 7		6-12" Orange-brown SAND, little Gravel, trace Silt.	ND	Dry	None	
3–4	12	11 9 7 6		Dense orange-brown SAND, little Gravel, trace Silt.	0.1 ND	Dry Dry	None None	
5–6	18	4 3 3 3		Medium dense orange-brown SAND, trace Gravel, trace Silt.	ND ND	Dry Dry	None None	
7–8	18	5 4 5 4		Medium dense orange-brown SAND, trace Gravel, trace Silt.	ND ND	Dry Dry	None None	PP-SB-98 (6-8) (VOCs, SVOCs)
9–10	12	2 3 3 3		0-6" Brown SAND, trace Silt. 6-12" Dark brown SAND, trace Silt. NAPL in soil and water.	63.5	Moist Wet	Strong tar-like Strong tar-like	
11–12	12	1 1 1 2		Loose dark brown SAND, trace Silt. NAPL in soil and water.	45.2	Wet	Moderate tar-like	PP-SB-98(9-11) (VOCs, SVOCs)
13–14	18	1 1 1 2		0-6" Slough. 6-18" Dark brown SAND, trace Silt. NAPL in soil and water.	32.1 26.0	Wet Wet	Moderate tar-like Moderate tar-like	
15–16	12	1 2 3 3		Loose dark brown micaceous fine-medium SAND, trace Silt. SHEEN on soil exterior and on water.	14.0	Wet	Mild tar-like	
17–18	18	3 3 3 4		0-6" Slough. 6-12" Dark brown micaceous fine-medium SAND, trace Silt. Soil is NAPL-saturated.	8.1 240.0	Wet Wet	Mild tar-like Mild tar-like	PP-SB-98(17.5-18.5) (VOCs, SVOCs)
19–20	24	3 2 2 4		0-6" Slough. 6-12" Black stained SAND, NAPL saturated. Soil is NAPL-saturated. 12-18" Brown micaceous fine-medium SAND, trace Silt. Soil is NAPL-saturated	221.0 63.4	Wet Wet	Strong tar-like Strong tar-like	
21–22	18	2 3 3 4		0-6" Slough. 6-18" Grey-brown fine-medium micaceous SAND, trace Silt. SHEEN on soil exterior 12-18" Brown micaceous fine-medium SAND, trace Silt. Soil is NAPL-saturated.	28.3 19.7	Wet Wet	Moderate tar-like Moderate tar-like	
23–24	18	5 5 6 7		0-6" Slough. 6-12" Grey-brown fine micaceous SAND, little Silt. SHEEN on soil exterior. 12-18" Brown fine micaceous SAND, some Silt. SHEEN on soil exterior	22.7 14.8	Wet Wet	Moderate tar-like Moderate tar-like	
25–26				End of split spoon sampling at 24' due to running sands. Auger to auger refusal at 51' on apparent bedrock.				
27–28								

Notes: PID - Photoionization detector   ND - Not Detected   Petro - Petroleum

Sample PP-SB-98 (6-8) was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270). Samples PP-SB-98 (9-11) and PP-SB-98 (17.5-18.5) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-99 Sheet 1 of 5
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: Sunny 75° Sampler: AKRF/Julie Foley, Becky Kinal	Drilling Start: Time: 11:15, Date: 09-16-03 Finish: Time: , Date: 09-16-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	84		0-8" Asphalt and GRAVEL	0.7	None	Dry	PP-SB-99 (2.5-3.5) & MS/MSD (VOCs, SVOCs)
1							
2			8-16" SAND and SILT, trace gravel	5.7	Mild tar-like	Dry	
3			16-48" Black stained SAND and SILT, some Gravel, (slag, coal, rock).	127	Strong tar-like	Dry	
4			48-54" Orange brown SILT (compacted), some Sand, trace rock Gravel. Dry tar-like material.	32.5	Mild tar-like	Dry	
5			54"-6.5' Orange brown SAND, trace Silt, little rock Gravel.	14.4	None	Dry	
6				6.6	None	Dry	
	60		0-4" Dark grey stained, mostly coarse SAND, trace Silt, trace fine Gravel.	3.8	Moderate tar-like	Moist	
7				5.7	None	Moist	
8			4-26" Orange brown coarse-medium SAND, trace Silt.	3.5	None	Moist	
9			26-56" Orange- brown coarse-medium SAND, trace Silt, some fine-medium rock Gravel.	1.6	None	Wet	
10							
11							
12							
13							
14							
15							
16							
	120		0-48" Brown SAND, trace Silt.	11.7	Mild tar-like	Wet	
17				20.2			
18			48-82" Brown fine micaceous SAND, little Silt.	5.2	Light petro-like	Wet	
19				8.7			
20			84-120" Grey-brown fine micaceous SAND and SILT.	15.8	Light petro-like	Wet	
21				11.3			
22				8.8	Light petro-like	Wet	
23							
24							
25							
26							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-99(2.5-3.5), (2.5-3.5)MS/MSD and PP-SB99(70-72) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-99

Sheet 2 of5

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	Sunny 75°
Sampler:	AKRF/Julie Foley, Becky Kinal

Drilling	
Start	Finish
Time: 11:15	Time:
Date: 09-16-03	Date: 09-16-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			Grey-brown fine micaceous SAND and SILT.	7.6	Light petro-like	Wet	
27				8.2	Light petro-like	Wet	
28				8.6	Light petro-like	Wet	
29				2.7	Light petro-like	Wet	
30				2.5	Light petro-like	Wet	
31	120			2.5	Light petro-like	Wet	
32				1.1	None	Wet	
33				2.9	None	Wet	
34				17.1	Moderate petro-like	Wet	
35			Grey-brown fine micaceous SAND, some Silt.	18.6	Moderate petro-like	Wet	
36			Grey-brown fine micaceous SAND and SILT.	6.1	Mild petro-like	Wet	
37				9.3	Mild petro-like	Wet	
38				1.4	Mild petro-like	Wet	
39				3.3	Mild petro-like	Wet	
40				1.2	Mild petro-like	Wet	
41	120			5.8	Mild petro-like	Wet	
42				3.9	Mild petro-like	Wet	
43				1.8	Mild petro-like	Wet	
44				1.2	Mild petro-like	Wet	
45				38	Moderate-light petro-like	Wet	
46			0-32" Grey-brown fine micaceous SAND, little Silt.	9.4	Mild-light petro-like	Wet	
47			32-84" Grey-brown fine micaceous SAND, some Silt.	5.6	Mild-light petro-like	Wet	
48			84-120" Grey-brown fine micaceous SAND and SILT.	22.3	Mild-light petro-like	Wet	
49				23.1	Mild-light petro-like	Wet	
50				16.6	Mild-light petro-like	Wet	
51	120			46.5	Mild-light petro-like	Wet	
52				16.2	Mild-light petro-like	Wet	
53				17.9	Mild-light petro-like	Wet	
54				14.1	Mild-light petro-like	Wet	
55				16.8	Mild-light petro-	Wet	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-99(2.5-3.5), (2.5-3.5)MS/MSD and PP-SB99(70-72) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-99
Environmental Consultants	AKRF Project Number : 03118-0309	Sheet 3 of5
116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10'/4" diam core barrel Driller : Prosonic Weather: Sunny 75° Sampler: AKRF/Julie Foley, Becky Kinal	Drilling Start: Time: 11:15, Date: 09-16-03 Finish: Time: , Date: 09-16-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
	108		0-60" Grey fine micaceous SAND, little Silt.	11.2	Mild-light petro-like	Wet	
57				10.4	Mild-light petro-like	Wet	
58				37.9	Mild-light petro-like	Wet	
59				39.7	Mild-light petro-like	Wet	
60				16.4	Mild-light petro-like	Wet	
61				24.1	Mild-light petro-like	Wet	
62			60-120" Grey fine micaceous SAND, some Silt.	26.2	Mild-light petro-like	Wet	
63				38.9	Mild-light petro-like	Wet	
64							
65							
66	84		Grey-brown fine micaceous SAND, little Silt.	1.1	Mild-light petro-like	Wet	PP-SB99 (70-72') (VOCs, SVOCs)
67				7.2	Mild-light petro-like	Wet	
68				6.8	Mild-light petro-like	Wet	
69				9.6	Mild-light petro-like	Wet	
70				64.7	Mild-light petro-like	Wet	
71				100.1	Mild-light petro-like	Wet	
72				69.3	Mild-light petro-like	Wet	
73			68-72" Orange-brown mottling				
74							
75							
76	108		Gre-brown fine micaceous SAND, little Silt.	NA	Mild-light petro-like	Wet	
77				38.8	Mild-light petro-like	Wet	
78				70.1	Mild-light petro-like	Wet	
79				22.8	Mild-light petro-like	Wet	
80				38.6	Mild-light petro-like	Wet	
81				19.6	Mild-light petro-like	Wet	
82				30.7	Mild-light petro-like	Wet	
83				58.3	Mild-light petro-like	Wet	
84				74.1	Mild-light petro-like	Wet	
85							
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-99(2.5-3.5), (2.5-3.5)MS/MSD and PP-SB99(70-72) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-99 Sheet 4 of 5
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Rotosonic Sampling Method: 10¼" diam core barrel Driller : Prosonic Weather: Sunny 75° Sampler: AKRF/Julie Foley, Becky Kinal	Drilling Start Time: 11:15 Date: 09-16-03 Finish Time: Date: 09-16-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
87	96		Grey-brown micaceous SAND, trace Silt.	17.8	Mild-light petro-like	Wet	
88				22.7	Mild-light petro-like	Wet	
89				29.5	Mild-light petro-like	Wet	
90				22.4	Mild-light petro-like	Wet	
91				29.6	Mild-light petro-like	Wet	
92				50	Mild-light petro-like	Wet	
93				46.7	Mild-light petro-like	Wet	
94				46.2	Mild-light petro-like	Wet	
95				30.8	Mild-light petro-like	Wet	
96							
97	120		0-80" Grey-brown fine micaceous SAND, trace Silt.	1.5	Mild-light petro-like	Wet	
98				2.7	Mild-light petro-like	Wet	
99				6.8	Mild-light petro-like	Wet	
100				5.9	Mild-light petro-like	Wet	
101				2.8	Mild-light petro-like	Wet	
102				10.4	Mild-light petro-like	Wet	
103			80-119" Grey-brown micaceous fine SAND, trace Silt.	3.5	Mild-light petro-like	Wet	
104				2.2	Mild-light petro-like	Wet	
105				2.2	Mild-light petro-like	Wet	
106							
107	96		Grey-brown fine micaceous SAND, some Silt, trace fine Gravel.	0.7	None	Wet	
108				0.5	None	Wet	
109				0.6	None	Wet	
110				0.6	None	Wet	
111				0.9	None	Wet	
112				0.4	None	Wet	
113				0.4	None	Wet	
114				0.2	None	Wet	
115							
116							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-99(2.5-3.5), (2.5-3.5)MS/MSD and PP-SB99(70-72) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-99

Sheet 5 of 5

Drilling Method:	Rotosonic
Sampling Method:	10¼" diam core barrel
Driller :	Prosonic
Weather:	Sunny 75°
Sampler:	AKRF/Julie Foley, Becky Kinal

Drilling	
Start	Finish
Time: 11:15	Time:
Date: 09-16-03	Date: 09-16-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-60": Grey fine SAND, little rock Gravel, trace Silt.	0.5			
117				0.5			
118				0.6			
119				0.6			
120				0.4			
121	120		60-120": Grey ROCK GRAVEL, trace Sand and Silt.	1.1			
122				0.5			
123				0.4			
124				0.5			
125				0.5			
126							
127			End of boring at 126' below ground.				
128			Assumed bedrock.				
129							
130							
131							
132							
133							
134							
135							
136							
137							
138							
139							
140							
141							
142							
143							
144							
145							
146							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-99(2.5-3.5), (2.5-3.5)MS/MSD and PP-SB99(70-72) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-100 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl, New York, NY 10016	Drilling Method: Hurricane Sampling Method: Direct Push/4' Sampler Driller : Talon Weather: 70° sunny Sampler: AKRF/Amy Sivers	Drilling Start: Time: 07:40, Date: 09-11-03 Finish: Time: 09:00, Date: 09-11-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1–4	43		0-4" ASPHALT. 4-40" Black-stained SAND, little Silt, trace fine Gravel. Tar-like material at 14" and 40". 40-43" CONCRETE powder.	1.9 7.1 2.5 1.9	Mild tar-like Mild tar-like Mild tar-like Mild tar-like	Dry Dry Moist Moist	PP-SB 100 (2-3) (VOCs, SVOCs)
5–8	44		0-6" Black SAND, little Silt, trace fine gravel. 6-8" Red BRICK. 8-14" White quartz ROCK pieces. 14-17" Black SAND. 17-19" White CONCRETE. 19-40": Black SAND, little Silt, trace fine Gravel (Rock pieces). 40-44": White CONCRETE.	6 1.6 2.1 2.8	Mild tar-like Mild tar-like Mild tar-like Mild tar-like	Moist Moist Wet Wet	
9–12	42		0-20" Dark gray SAND, little fine Gravel (rock and concrete). 20-26" White quartz ROCK pieces. 26-42" Black SAND, little Silt, trace fine Gravel.	1.3 2.4 1.6	Mild tar-like Mild tar-like Mild tar-like	Wet Wet Wet	
13–16	36		0-18" SLOUGH, black and dark gray SAND, little fine Gravel, trace Silt, trace Brick and Rock. 18-30" Black and dark gray SAND, little Silt, trace find Gravel. 30-32" Black-stained WOOD. SHEEN on soil. 32-36" Black SAND. SHEEN on soil.	2.1 8.2 38.9	Mild tar-like Mild tar-like Mild tar-like	Wet Wet Wet	PP-SB 100 (14-16) (VOCs, SVOCs)
17–20	36		0-20" Black SAND, trace fine Gravel. 20-36" Grayish brown SAND. (Sleeve stuck - sample shaken out.)	33.9 2.2 3.3	Moderate tar-like Mild tar-like Mild tar-like	Wet Wet Wet	
21–24	36		0-36" Grayish brown, fine to medium SAND, little Silt.	1.9 0.8 1.3	None None None	Wet Wet Wet	
25–28	46		0-46" Grayish brown, fine to medium SAND, little Silt.	0.5 0.6 0.5 0.8	None None None None	Wet Wet Wet Wet	

Notes: PID - Photoionization Detector ND - Not Detected Petro - Petroleum

Began discrete sampling at 20' below ground.

Samples PP-SB-100(2-3) and PP-SB100(14-16) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY	
AKRF Project Number : 03118-0309	
Drilling Method:	Hurricane
Sampling Method:	Direct Push/4' Sampler
Driller :	Talon
Weather:	70° sunny
Sampler:	AKRF/Amy Sivers

Boring No. SB-100	
Sheet 2 of 2	
Drilling	
Start	Finish
Time: 07:40	Time: 09:00
Date: 09-11-03	Date: 09-11-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29	48'		0-48' Grayish brown, fine to medium SAND, little Silt.	0.5	Moderate petro-like	Wet	
30				0.4	Moderate petro-like	Wet	
31				0.5	Slight petro-like	Wet	
32				0.5	Slight petro-like	Wet	
33			End of boring at 32' as per work plan protocol.				
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Began discrete sampling at 20' below ground.

Samples PP-SB-100(2-3) and PP-SB100(14-16) were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-104 Sheet 1 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: Hurricane Sampling Method: Direct Push/4' Sampler Driller: Talon Weather: 70° sunny Sampler: AKRF/Amy Sivers	Drilling Start: Time: 07:30, Date: 09-16-03 Finish: Time: 08:35, Date: 09-16-03

Depth (feet)	Recovery (Inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1, 2, 3, 4'	36		0-3" ASPHALT 3-36" Black SAND (coal-like), little fine Gravel, trace Silt.	ND ND ND	None None None	Dry Dry Dry	
5, 6, 7, 8	30		0-10" Black SAND, trace fine Gravel (coal-like), trace Silt. 10-11" CONCRETE. 11-14" Black SAND, trace fine Gravel (coal-like), trace Silt. 14-18" Red and beige BRICK, trace black SAND. 18-30" Reddish orange SAND, trace fine Gravel.	ND ND ND	None None None	Dry Dry Dry	
9, 10, 11, 12	44		0-8" SLOUGH and black SAND, little fine Gravel. 8-24" Reddish orange SAND, trace fine Gravel. 24-44" Grayish brown SAND, some fine Gravel.	ND ND ND ND	None None None None	Dry Dry Dry Dry	
13, 14, 15, 16	46		0-12" SLOUGH and reddish orange SAND, little fine Gravel. 12-26" Black SAND and GRAVEL, trace Silt. (FILL) 26-44" Light brown fine to medium SAND. (Native soil)	ND ND ND ND	None None None None	Dry Dry Dry Wet	
17, 18, 19, 20	40		0-12" SLOUGH and reddish brown SAND and GRAVEL. 12-24" SLOUGH and black GRAVEL and SAND, trace Silt. 24-30" Grayish brown SAND. 30-36" Grayish brown coarse SAND. (Sleeve stuck - sample shaken out.)	ND 0.6 0.5 17.6	None None None None	Dry Dry Wet Wet	
21, 22, 23, 24	36		0-8" Dark brown-stained SAND, trace fine Gravel. Soil is NAPL saturated. 8-14" Gray-stained fine to medium SAND, some Silt. 14-36" Grayish brown fine to medium SAND, some Silt.	>243 11.1 9.1	Strong tar-like Mild tar-like None	Wet Wet Wet	PP-SB (20-21) (VOCs, SVOCs, metals, CN)
25, 26, 27, 28	36		0-36" Gray-brown SAND, some Silt. (Sleeve stuck - sample shaken out.)	20.3 15.2 22.5	Mild petro-like Mild petro-like Mild petro-like	Wet Wet Wet	

Notes: **PID - Photoionization detector** **ND - Not Detected** **Petro - Petroleum**

Began discrete sampling at 20' below ground.

Samples PP-SB-104(20-21) and PP-SB104(35-36) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY	Boring No. SB-104
Environmental Consultants	AKRF Project Number : 03118-0309	Sheet 2 of 2
116 East 27th Street, 7th Fl. New York, NY 10016		

Drilling Method:	Hurricane	
Sampling Method:	Direct Push/4' Sampler	
Driller :	Talon	
Weather:	70° sunny	
Sampler:	AKRF/Amy Sivers	

Drilling	
Start	Finish
Time: 07:30	Time: 08:35
Date: 09-16-03	Date: 09-16-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-40" Gray-brown SAND, some Silt.	13.8	None	Wet	
29				11.2	None	Wet	
30	40			13.5	None	Wet	
31							
32			0-40" Grayish brown SILTY SAND.	ND	None	Wet	PP-SB-104 (35-36) (VOCs, SVOCs, metals, CN)
33				3.1	None	Wet	
34	40			5.4	None	Wet	
35							
36							
37			End of boring at 36' as per workplan protocol.				
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Began discrete sampling at 20' below ground.

Samples PP-SB-104(20-21) and PP-SB104(35-36) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-105 Sheet 1 of 4

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 08:50	Time: 13:00
Date: 09-30-03	Date:09-30-03

Depth (feet)	Recovery (inches)	Soil Type	Surface Condition: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-6" ASPHALT and CONCRETE. 6-30" Black Gravel (clinker-like). SHEEN on soil.	20.8	Moderate tar-like	Dry	
1				45.4	Moderate tar-like	Moist	
2			30-66" Black SAND, little fine Gravel. SHEEN on soil	28.4	Moderate tar-like	Moist	
3	72			177	Moderate tar-like	Moist	
4				>428	Moderate tar-like	Moist	
5			66-72" Dark gray SILT, little Sand, little Organics, trace Clay. SHEEN on soil.	1400	Strong tar-like	Moist	
6			0-6" Black SAND and GRAVEL and SILT (slough). 6-24" Grayish brown SAND and SILT, little fine Gravel, trace clay, black mottling.	235	Moderate septic-like	Moist	
7				50	Moderate septic-like	Moist	
8			24-42" Orange brown SAND, trace Silt, trace fine Gravel, some dark gray staining.	110	Moderate septic-like	Moist	
9				323	Strong tar-like	Moist	
10			42-72" Black fine to medium SAND, trace Silt, trace fine Gravel. SHEEN on soil.	509	Strong tar-like	Moist	
11	84			470	Strong tar-like	Moist	
12			72-84" Grayish green fine to medium SAND, trace Silt, trace coarse Sand. Heavy SHEEN on soil.	575	Strong tar-like	Moist	
13				325	Strong septic-like	Moist	
14				183	Strong septic-like	Moist	
15				87.5	Strong septic-like	Moist	
16			0-72" Orange-gray SAND, trace Silt, trace fine Gravel. NAPL in soil; 24-36" Soil is NAPL-saturated.	137	Strong tar- and petro-like	Wet	
17				54	Strong tar- and petro-like	Wet	PP-SB-105 (17-18), & duplicate (VOCs, SVOCs)
18				150.3	Strong tar- and petro-like	Wet	
19				103.4	Strong tar- and petro-like	Wet	
20				189	Strong tar- and petro-like	Wet	
21	120			94.5	Strong tar- and petro-like	Wet	
22				169.1	Strong tar- and petro-like	Wet	
23			72-108" Black fine to medium SAND, trace Silt, trace coarse Sand. Heavy SHEEN.	>589	Strong tar- and petro-like	Wet	
24				>1000	Strong tar- and petro-like	Wet	
25			108-120" Black fine SAND, little Silt. NAPL saturated.	>1000	Strong tar- and petro-like	Wet	
26							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-105(17-18), duplicate PP-SB-R (17-18), PP-SB-105(111-112) and (111-112)MS/MSD were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. SB-105 Sheet 2 of 4

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	Rotosonic
Sampling Method:	10¼" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 08:50	Time: 13:00
Date: 09-30-03	Date:09-30-03

Surface Condition: Asphalt

Depth (feet)	Recovery (inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-84" Grayish brown fine to medium micaceous SAND, trace Silt.	NR	Moderate petro-like	Wet	
27				NR	Moderate petro-like	Wet	
28				>164	Moderate petro-like	Wet	
29				72.9	Moderate petro-like	Wet	
30				88.0	Moderate petro-like	Wet	
31	120			136.3	Moderate petro-like	Wet	
32				88.9	Moderate petro-like	Wet	
33			84-96" Black-stained medium SAND. NAPL saturated.	>897	Strong petro-like	Wet	
34			96-120" Grayish brown fine to medium micaceous SAND, trace Silt.	169.1	Strong petro-like	Wet	
35				209.4	Strong petro-like	Wet	
36			0-72" Grayish brown fine to medium micaceous SAND, trace Silt.	NM	Mild tar-like	Wet	
37			72-120" Grayish brown fine micaceous SAND, trace Silt.	NM	Mild tar-like	Wet	
38			Soil was too wet to collect PID readings, not measured (NM).	NM	Mild tar-like	Wet	
39				NM	Mild tar-like	Wet	
40				NM	Mild tar-like	Wet	
41	120			NM	Mild tar-like	Wet	
42				NM	Mild tar-like	Wet	
43				NM	Mild tar-like	Wet	
44				NM	Mild tar-like	Wet	
45				NM	Mild tar-like	Wet	
46			0-120" Grayish brown fine micaceous SAND, trace Silt.	61.4	Moderate light petro-like	Wet	
47				29.6	Moderate light petro-like	Wet	
48				17.5	Moderate light petro-like	Wet	
49				65.8	Moderate light petro-like	Wet	
50				73.2	Moderate light petro-like	Wet	
51	120			26.8	Moderate light petro-like	Wet	
52				54.4	Moderate light petro-like	Wet	
53				88.8	Moderate light petro-like	Wet	
54				46.9	Moderate light petro-like	Wet	
55				79.2	Moderate light petro-like	Wet	
56							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-105(17-18), duplicate PP-SB-R (17-18), PP-SB-105(111-112) and (111-112)MS/MSD were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. SB-105

Sheet 3 of 4

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 08:50	Time: 13:00
Date: 09-30-03	Date: 09-30-03

Surface Condition: Asphalt

Depth (feet)	Recovery (Inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-120" Grayish brown fine SAND, little Silt.	NM	Mild petro-like	Wet	
57				108.3	Mild petro-like	Wet	
58				45.1	Mild petro-like	Wet	
59				185.0	Mild petro-like	Wet	
60				191.6	Mild petro-like	Wet	
61	120			36.6	Mild petro-like	Wet	
62				236.8	Mild petro-like	Wet	
63				68.1	Mild petro-like	Wet	
64				164.3	Mild petro-like	Wet	
65				176.3	Mild petro-like	Wet	
66			0-24" Grayish brown fine to medium micaceous SAND, trace Silt. NAPL-mottled, may be slough	22.4	Mild petro-like	Wet	
67				86.6	Mild petro-like	Wet	
68			24-108" Grayish brown fine micaceous SAND, little Silt.	102.1	Mild petro-like	Wet	
69				44.4	Mild petro-like	Wet	
70				88.2	Mild petro-like	Wet	
71	108			59.9	Mild petro-like	Wet	
72				88.3	Moderate petro-like	Wet	
73				100.6	Moderate petro-like	Wet	
74				180.2	Moderate petro-like	Wet	
75							
76			0-84" Gray medium SAND, trace fine Sand, trace Silt, trace quartz and mica.	58.6	Moderate light petro-like	Wet	
77				99.6	Moderate light petro-like	Wet	
78				183.2	Moderate light petro-like	Wet	
79				180.1	Moderate light petro-like	Wet	
80				140.8	Moderate light petro-like	Wet	
81	120			130.4	Moderate light petro-like	Wet	
82				120	Moderate light petro-like	Wet	
83				112.3	Moderate light petro-like	Wet	
84				143.2	Moderate light petro-like	Wet	
85				115.3	Moderate light petro-like	Wet	
86							

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-105(17-18), duplicate PP-SB-R (17-18), PP-SB-105(111-112) and (111-112)MS/MSD were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **SB-105**

Drilling Method:	Rotosonic
Sampling Method:	10'/4" diam core barrel
Driller :	Prosonic
Weather:	65° and sunny
Sampler:	AKRF/Amy Sivers

Drilling	
Start	Finish
Time: 08:50	Time: 13:00
Date: 09-30-03	Date:09-30-03

Surface Condition: Asphalt

Depth (feet)	Recovery (Inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			0-36" Grayish brown medium SAND, trace fine Sand, trace Silt.	89.1	Mild petro-like	Wet	
87				99.5	Mild petro-like	Wet	
88				76.7	Mild petro-like	Wet	
89			36-120" Grayish brown fine to medium SAND, trace Silt.	56.6	Mild petro-like	Wet	
90				86.4	Mild petro-like	Wet	
91	120			89.8	Mild petro-like	Wet	
92				187.4	Mild petro-like	Wet	
93				200.2	Mild petro-like	Wet	
94				218.9	Mild petro-like	Wet	
95				180.1	Mild petro-like	Wet	
96			0-120" Grayish brown fine to medium micaceous SAND, trace Silt.	60.9	Mild petro-like	Wet	
97				68.9	Mild petro-like	Wet	
98				NM	Mild petro-like	Wet	
99				106.9	Mild petro-like	Wet	
100				38.7	Mild petro-like	Wet	
101	120			56.3	Mild petro-like	Wet	
102				55.8	Mild petro-like	Wet	
103				74.5	Mild petro-like	Wet	
104				60.0	Mild petro-like	Wet	
105				72.4	Mild petro-like	Wet	
106			0-60" Grayish brown fine to medium SAND, trace Silt, trace fine Gravel.	12.2	Mild petro-like	Wet	
107				50.9	Mild petro-like	Wet	PP-SB-105 (111-112), MS/MSD (VOCs, SVOCs)
108				88.8	Mild petro-like	Wet	
109				65.9	Mild petro-like	Wet	
110				35.4	Mild petro-like	Wet	
111	96		60-84" Grayish brown SAND, little fine Gravel, little Silt (very weathered rock).	54.9	Mild petro-like	Wet	
112			84-96" Gray GRAVEL (rock) and rock powder.	123.7	Mild petro-like	Moist	
113				54.6	Mild petro-like	Dry	
114							
115							
116			End of boring at 116' in apparent bedrock.				

Notes: PID - Photoionization detector ND - Not Detected Petro - Petroleum

Samples PP-SB-105(17-18), duplicate PP-SB-R (17-18), PP-SB-105(111-112) and (111-112)MS/MSD were analyzed for TCL VOCs (Method 8260) and TCL SVOCs (Method 8270).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-1**

Drilling Method:	3 1/2" Hollow Stem Auger
Sampling Method:	2" Split Spoon
Driller :	SDS
Weather:	60°F Sunny
Sampler:	AKRF/A. Sivers

Drilling

Start		Finish	
Time:	9:55	Time:	16:00
Date:	5/14/03	Date:	5/14/03

Depth (feet)	Blow Counts	Recovery (Inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2	2 8 7 5	8		0-1": ASPHALT. 1"-3": Gravel (#2 stone). 3"-8": Dark brown SAND (black stained), little fine Gravel (coal-like and rock), trace Silt.	ND ND	Strong tar-like odor	Moist	
3 4	3 4 3 4	10		Dark brown SAND (black stained), little Gravel (stone), trace Silt. 1" of brick at 7-8".	ND ND	Strong tar-like odor	Wet Wet	
5 6	1 1 1 1	16		0-4": Orange-brown SAND. 4"-16": Grey-brown SAND, little Silt, trace Clay and Gravel.	ND ND	Mild tar-like odor	Wet Wet	
7 8	1 1 1 1	20		Dark grey-brown SAND, little Silt, little Clay, trace Gravel.	ND ND	Moderate tar-like odor	Wet Wet	
9 10	1 1 1 1	19		0-3": SLOUGH. 3"-8": Grey-brown SAND, little Silt, little Clay, trace Organics, (blue sheen on exterior of soil column). 8"-16": Grey-brown SAND, (dark brown NAPL). 16"-19": PEAT, mostly organics, little Silt, trace Clay (sheen on exterior)	>100	Very strong tar-like odor	Wet	PP-RW1(8-10)
11 12	1 1 1 1	22		0-4": SLOUGH. 4"-22": Grey-brown PEAT (Silt, little Clay, Organics) (some sheen on exterior). 1" lenses of coarse sand, NAPL present, at 6" and at 19". (PID >100ppm)	19.1 15.3	Very strong tar-like odor	Wet	
13 14	1 1 1 1	22		Grey-brown PEAT (organic Silt, little Clay, Organics). (Peat has no sheen inside, but exterior of soil column and water have sheen.) 2" lens of coarse Sand and trace Silt at 16" has NAPL. (PID >200ppm)	27.7	Very strong tar-like odor	Wet	
15 16	1 3 5 10	24		0-3": Coarse SAND (NAPL). 3"-20": PEAT (organic Silt, little Clay) (sheen on exterior of soil column). 20"-24": Grey SAND, trace Silt.	58.3 3.2	Strong tar-like odor Mild tar-like odor	Wet	
17 18	10 12 15 14	24		0-6": SLOUGH (sheen on soil) 6"-24": Grey SAND (mostly coarse), trace silt, trace fine Gravel (rock).	5.2 ND	Mild tar-like odor None	Wet Wet	
19 20	2 3 2 2	24		0-16": Mixture of Peat, Sand, Silt Clay (probable slough), (sheen, NAPL) 16"-24": Grey quartz and mica SAND, trace Gravel.	>100 ND	Strong tar-like odor None	Wet Wet	
21 22	2 2 2 6	24		0-5": SLOUGH. 5"-17": Grey coarse SAND, trace fine to medium Sand. 17"-24": Grey SAND, trace Silt.	ND ND	Mild tar-like odor Mild tar-like odor	Wet Wet	PP-RW1(22-24) PP-RWA(22-24)
23 24	1 2 2 3	24		0-6": SLOUGH. 6"-24": Grey SAND (mostly coarse), trace Silt.	ND ND	None None	Wet Wet	
25 26	1 1 1 1	24		0-12": SLOUGH. 12"-18": Grey coarse SAND, little medium to fine Sand, trace Silt. 18"-24": Grey SAND (black and brown stained), trace Silt, (rainbow sheen, NAPL).	21.2 >100	Mild tar-like odor Very strong tar-like odor	Wet Wet	
27 28	1 2 50	24		Grey SAND (mostly coarse with 2" layers of finer Sand), trace Silt, (rainbow sheen throughout, some areas of NAPL).	116.0 25.3	Very strong tar-like odor Very strong tar-like odor	Wet Wet	

ND - Not Detected

Notes:
Samples PP-RW-1(8-10), PP-RW1(22-24), and PP-RWA(22-24) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Cleanout spoon taken prior to sampling 18' to 20' interval.
Groundwater apparent at 2'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. RW-1 Page 2 of 2
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 31/2" Hollow Stem Auger Sampling Method: 2" Split Spoon Driller : SDS Weather: 60°F Sunny Sampler: AKRF/A. Sivers	Drilling Start Time: 9:55 Date: 5/14/03 Finish Time: 16:00 Date: 5/14/03

Depth (feet)	Blow Counts	Recovery (Inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
				Split spoon and auger refusal at 28'. Cored bedrock from 28.5' to 33.5'.	ND	None		
29								
30					ND	None		
31		60						
32					ND	None		
33				End of Boring at 33.5' in competent bedrock.				
34								
35								
36								
37								
38								
39								
40								
41								
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54								
55								
56								

Notes: ND - Not Detected

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY
AKRF Project Number : 03118-0309

Boring No. **RW-2**
Page 1 of 1

Drilling Method:	31/2" Hollow Stem Auger		
Sampling Method:	2" Split Spoon		
Driller :	SDS		
Weather:	60°F Cloudy		
Sampler:	AKRF/A. Sivers		
Drilling			
Start		Finish	
Time:	14:15	Time:	16:00
Date:	5/13/03	Date:	5/13/03

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2	11 17 50	6		0-3": Black SAND, trace fine Gravel and Silt. 3"-6": Light brown WOOD, competent, black staining and sheen in some places.	128.2	Strong petro-like	Wet	
3	X	X		Augered through wood to 3' bgs. Strong odor of treated wood.				
4 5	0 0 5 3	3		SLOUGH (woody SAND and GRAVEL). Strong sheen, sand is stained.	NR	Strong petro-like	Wet	
6 7	8 5 3 1	4		Black GRAVEL (concrete), little Sand, trace Silt and Organic matter. Sheen on water and soil.	ND	Strong petro-like	Wet	
8 9	1 1 1 1	4		Black GRAVEL (concrete), little Sand, trace Silt and Organic matter. Sheen on water and soil.	ND	Strong petro-like	Wet	
10 11	X	X		Augered through wood and concrete to 11' bgs.				
12 13	4 1 1 1	14		0-2": SLOUGH. 2"-14": Grey SILT, some Clay, little Sand. Sheen on exterior of soil; spotty staining throughout soil.	>200	Strong petro-like	Wet	
14 15	4 2 2 3	20		0-17": SLOUGH. 17"-20": Grey SILT and CLAY, trace Sand. Sheen on exterior of soil; interior of soil sample apears unstained and has no sheen.	>200	Strong petro-like	Wet	
16 17	2 11 12 16	20		0-6": SLOUGH 6"-20": Grey SILT and CLAY, some fine Gravel, little Sand (weathered rock). Sheen on exterior of soil; interior of soil sample apears unstained and has no sheen.	136.9	Strong petro-like	Wet	
18 19	10 14 10 8	18		0-2": SLOUGH. 2"-17": Grey SILT and CLAY, trace fine Gravel and Sand. Sheen on exterior of soil. 17"-18": Black SAND, trace Silt. NAPL visible in soil.	>280	Strong petro-like	Wet Wet	
20 21 22 23 24 25 26 27				End of boring 19 feet bgs - into apparent weathered bedrock.				

Notes: ND - Not Detected NR - Not Recorded

Cleanout spoons taken prior to sampling 9' to 11' and 11' to 13' intervals.
Groundwater apparent at surface.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-2A**

Drilling Method:	31/2" Hollow Stem Auger
Sampling Method:	2" Split Spoon
Driller :	SDS
Weather:	60°F Cloudy
Sampler:	AKRF/A. Sivers

Drilling			
Start		Finish	
Time:	11:30	Time:	14:00
Date:	5/13/03	Date:	5/13/03

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1				Augered through BRICK and CONCRETE.				
2								
3								
4								
5				Weight of the spoon carried it 4' - 7' - no blows necessary. 0-6": BRICK powder (slough).	ND	Mild petro-like odor	Dry	
6	0			6"-24": Dark grey SAND, little Silt, trace fine Gravel and Clay.	ND	Mild petro-like odor	Wet	
7		24						
8				Weight of the spoon carried it 7' - 10' - no blows necessary. 0-3": BRICK powder (Slough)	ND	Mild petro-like odor	Wet	
9	0			3"-24": Grey SAND, little Silt, trace fine Gravel and Clay. (22"-22.5": Grey coarse SAND. Brown NAPL visible in soil)	ND (14.4)	Strong petro-like odor	Wet	
10		24						
11	1	0		NO RECOVERY.				
12								
13	1 1 1	20.5		0-6": Brown SILT and BRICK powder (slough). 6"-20": Dark grey SAND and SILT, little Clay. 20"-20.5": Black SAND. Black stained; sheen on soil, NAPL visible in soil.	ND	NR	NR	PP-RW-2A(12-14)
14	2				21.8	NR	NR	
15	0 0 7	15		0-2": Dark brown and grey SAND, little Silt, trace Clay (slough). 2"-5": Orange-brown SAND and SILT, little Clay (Slough). 5"-14": Plastic grey brown SILT, little fine Sand and Clay, trace Organic material. 14"-15": Weathered ROCK.	ND	NR	NR	
16	12				ND	NR	NR	
17	12 14 18	16		0-3": SLOUGH. 3"-5": Dark grey weathered schistose ROCK. 5"-16": GRAVEL, little Sand and Silt, trace Clay (weathered schistose, quartz-rich rock).	ND	NR	NR	PP-RW-2A(17-18)
18	24				ND	NR	NR	
19	20 27 50/0.5"	18		0-9": SLOUGH. 9"-17": Dark grey SAND and GRAVEL, little Silt, trace Clay (weathered rcok). 17"-18": Light grey SAND and GRAVEL (weathered schistose rock).	ND	NR	NR	
20				End of boring at 20' - relocate boring to location RW-2 and try again. Insufficient NAPL at this location for recovery well installation.				
21								
22								
23								
24								
25								
26								
27								

ND - Not Detected **NR - Not Recorded**

Notes:

Samples PP-RW-2A(12-14) and PP-RW-2A(17-18) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at surface.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-3**

Drilling Method:	31/2" Hollow Stem Auger
Sampling Method:	2" Split Spoon
Driller :	SDS
Weather:	55°F Sunny
Sampler:	AKRF/A. Sivers

Drilling			
Start		Finish	
Time:	7:40	Time:	11:40
Date:	5/15/03	Date:	5/15/03

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1 2	12 9 6 4	12		0-2": Number Two stone GRAVEL. 2"-12": Black SAND, trace fine Gravel and Silt; soil is coal-like.	ND	Moderate tar-like odor	Dry	
3 4	4 3 2 3	10		0-2": SLOUGH. 2"-10": Dark grey SAND, trace fine Gravel and Silt; soil is coal-like.	ND	Moderate tar-like odor	Moist	
5 6	3 3 2 2	14		0-3": SLOUGH. 3"-6": Black-stained SAND, trace fine Gravel and Silt. Slight sheen on soil. 6"-14": Grey-brown SAND, trace fine Gravel.	ND	Moderate tar-like odor	Wet Wet	
7 8	2 2 2 2	24		0-2": SLOUGH. 2"-24": Plastic organic SILT, little Clay, trace Sand and organic matter. Fibrous.	ND ND	Strong tar-like odor	Wet Wet	
9 10	2 2 3 2	20		0-10": SLOUGH. 10"-20": Organic SILT, little Clay, trace Sand and Organic matter.	ND ND	Moderate tar-like odor Strong tar-like odor		
11 12	0 0 0 0	24		0-2": SLOUGH. 2"-24": Organic SILT, little Clay, trace Sand and Organic matter.	ND 5.5	Strong organic odor and tar-like odor Strong organic odor and tar-like odor	Wet Wet	
13 14	0 0 0 0	24		Organic SILT, little Clay, trace Sand and Organic matter.	ND 3.5	Organic odor and mild petro-like odor Organic odor and mild petro-like odor	Wet Wet	
15 16	4 3 3 4	24		0-12": Organic SILT, little Clay, trace Sand and Organic matter. 12"-24": Dark grey stained SAND, trace Silt; silt forms thin horizontal bands.	0.3 3.5	Mild septic, moderate petro-like odor Mild septic, moderate petro-like odor	Wet Wet	
17 18	4 3 5 4	24		0-14": Dark grey SAND (some SLOUGH?). 14"-18": Organic SILT, trace Sand and Clay and Organic matter. 18"-24": Dark grey SAND, trace Silt and Organic matter.	3.5 37.1	Mild petro-like odor Strong petro-like odor	Wet Wet	
19 20	9 11 10 20	24		0-12": SLOUGH. 12"-24": Grey coarse SAND, some fine Gravel, trace fine-medium Sand and Silt. Sheen present in thin horizontal bands in soil.	ND 106.8	Moderate petro-like odor Moderate petro-like odor	Wet Wet	PP-RW-3 (19-20)
21 22	14 16 17 16	20		Grey coarse SAND, some fine Gravel, trace fine-medium Sand and Silt.	31.3 44.0	Moderate petro-like odor Moderate petro-like odor	Wet Wet	
23 24	13 12 12 14	24		0-10": Grey coarse SAND, trace fine Gravel and fine to medium Sand and Silt. 10"-11": Red BRICK. 11"-22": Plastic dark grey organic SILT, some Clay, trace Organic matter. 22"-24": Red BRICK.		Moderate petro-like odor Mild petro-like odor	Wet Wet	
25 26	17 15 14 13	16		Grey coarse SAND, little fine Gravel, trace fine to medium Sand and Silt	12.7	Moderate petro-like odor	Wet Wet	
27 28	12 11 9 6	18		Grey coarse SAND, little fine Gravel, trace fine to medium Sand and Silt.	2.3 12.7	Moderate petro-like odor Moderate petro-like odor	Wet Wet	

ND - Not Detected

Notes:

Sample PP-RW-3(19-20') was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 4'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-3**

Drilling Method:	31/2" Hollow Stem Auger		
Sampling Method:	2" Split Spoon		
Driller :	SDS		
Weather:	55°F Sunny		
Sampler:	AKRF/A. Sivers		

Drilling			
Start		Finish	
Time: 7:40		Time: 11:40	
Date: 5/15/03		Date: 5/15/03	

Depth (feet)	Blow Counts	Recovery (Inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
29 30	7 5 5 6	20		Grey coarse SAND, little fine Gravel, trace fine to medium Sand and Silt.	1.9 ND	Moderate petro-like odor Moderate petro-like odor	Wet Wet	
31 32	4 3 3 2	10		Grey coarse SAND, little fine Gravel, trace fine to medium Sand.	2.3	Moderate petro-like odor	Wet	
33 34	3 2 4 3	10		Grey-brown SAND, trace fine Gravel and Silt. Mild sheen on soil.	ND	Moderate petro-like odor	Wet	
35 36	4 4 4 4	20		0-18": Grey-brown SAND, trace fine Gravel and Silt. Mild sheen on soil. 18"-20": Dark brown stained SAND; NAPL in soil.	2.1 >200	Moderate petro-like odor Strong petro-like odor	Wet Wet	
37 38	5 5 7 7	24		Grey SAND, trace fine Gravel; sheen on lower 4" (SLOUGH?).	1.9 2.1	Mild petro-like odor Strong petro-like odor	Wet Wet	
39 40	17 31 16 10	22		0-16": Grey coarse SAND, trace fine Gravel and fine to medium Sand; blue and orange sheen throughout soil sample. 16"-22": Black and yellow GRAVEL, little Sand and Silt (weathered rock).	5.2 2.3	Mild petro-like odor Strong petro-like odor	Wet Wet	
41 42	9 13 11 8	24		0-18": Grey SAND (SLOUGH?); no sheen. 18"-24": Grey-brown GRAVEL (rounded rock pieces), little Sand, trace Silt.	ND ND	Strong petro-like odor None	Wet Wet	PP-RW-3(41.5-42)
43 44	5 7 7 6	23		0-20": SLOUGH. 20"-23": Grey GRAVEL (rounded rock pieces), trace Sand and Silt; sheen on water and soil.	23.9 1.2	Moderate petro-like odor Mild petro-like odor	Wet Wet	
45 46				End of boring at 44' - drillers out of augers. Continued with separate boring RW-3A on 5/19/03.				
47 48								
49 50								
51 52								
53 54								
55 56								

ND - Not Detected

Notes:

Sample PP-SB-3(41.5-42) was analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012)

Cleanout spoons taken prior to sampling 36'-38' and 38'-40' intervals.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-4**

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Drilling Method:	8 1/4" Hollow Stem Auger	Drilling Start Time: 7:30	Finish Time: 10:00
Sampling Method:	Cuttings examined	Date: 5/13/03	Date: 5/13/03
Driller:	SDS		
Weather:	55°F Cloudy		
Sampler:	AKRF/A. Sivers		

Surface Condition: Asphalt-Paved Parking Lot

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Description	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1				No soil samples collected; descriptions from auger cuttings only				
2				0-4': GRAVEL (concrete pieces) and black SAND, trace Silt.	ND	None	Dry	
3								
4				4'-5': Black SAND, trace Gravel and Silt and Clay; black stained.	ND	None	Wet	
5				5'-6': Black GRAVEL and SAND, trace Silt; blue sheen throughout.	>150	Strong petro- and tar-like odor		
6				6'-8': Black SAND and GRAVEL, trace Silt; blue sheen throughout.	>150	Strong petro- and tar-like odor		
7								
8				8'-10': PEAT; black staining and blue sheen throughout.	>150	Strong petro- and tar-like odor		
9								
10				10'-16': PEAT, transitioning to PEAT with little Gravel and Sand with depth; blue sheen throughout.	ND	Strong petro- and tar-like odor		
11								
12								
13								
14								
15								
16				End of augering 16'.				
17								
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25								
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27								
28								

Notes: ND - Not Detected

No samples collected for laboratory analysis. Soil was examined in auger cuttings only.

Groundwater apparent at 4'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. RW-5 Page 1 of 1
Environmental Consultants 116 East 27th Street, 7th Fl. New York, NY 10016	Drilling Method: 31/2" Hollow Stem Auger Sampling Method: 2" Split Spoon Driller: General Borings, Inc Weather: 60ºF Cloudy Sampler: AKRF/A. Sivers & R. Kinal	Drilling Start Time: 9:15 Date: 5/12/03 Finish Time: 12:30 Date: 5/12/03

Depth (feet)	Blow Counts	Recovery (Inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1				Augered through ASPAHLT and GRAVEL road base.				
2 3	11 19 13 9	8		Black and yellow fine GRAVEL (coal-like and slag-like) and SAND, trace Silt.	0.4	Mild tar-like odor	Dry	
4 5	9 9 8 6	12		0-6": Black and brown fine GRAVEL (coal-like and slag-like). 6"-12": Black stained plastic SAND, little Silt and Clay.	4.6	Strong tar-like odor	Moist	
6 7	2 3 2 2	12		Dark brown organic SILT, little Clay, trace Sand; sheen on water and soil exterior.	26.5	Strong tar-like odor	Wet	PP-RW-5 (5-7)
8 9	1 1 1 1	0		NO RECOVERY.				
10 11	1 2 2 1	18		0-2": SLOUGH. 2"-18": Olive-grey plastic organic SILT, little Clay, trace Sand.	33.9 62.4	Strong septic and petro-like odor Strong septic and petro-like odor	Wet Wet	PP-RW-5 (9.5-10.5)
12 13	1 2 2 1	24		0-1": SLOUGH. 1"-24": Brown organic SILT, trace Clay; fibrous and woody; staining on soil exterior.	26.1 46.6	Strong septic, mild petro-like odor Strong septic, mild petro-like odor	Wet Wet	
14 15	2 2 2 3	24		0-2": SLOUGH. 2"-6": Dark brown organic SILT, trace Sand (slough?) and Clay. 6"-24": Dark brown plastic organic SILT, trace Sand and Clay; woody.	12.3 30.6	Moderate septic and petro-like odor Moderate septic and petro-like odor	Wet Wet	
16 17	1 2 2 3	24		0-1": SLOUGH. 1"-24": Dark brown organic SILT; fibrous; soil exterior is dark grey stained.	25.2 29.2	Moderate septic , mild petro-like odor Moderate septic, mild petro-like odor	Wet Wet	
18 19	2 3 2 1	24		0-4": Brown organic SILT; fibrous. 4"-20": Dark brown SAND and SILT, trace Organic matter. 20"-24": Dark brown medium to coarse SAND and SILT; sheen on soil exterior.	NR NR	Mild petro-like odor Mild petro-like odor	Wet Wet	
20 21	4 6 10 12	24		Grey medium to coarse SAND, trace Silt.	3.1 16.0	Mild petro-like odor Mild petro-like odor	Wet Wet	
22 23	10 11 11 13	12		0-4": SLOUGH. 4"-12": Dark grey medium to coarse SAND, some Silt; sheen on water.	1.1	Mild petro-like odor	Wet	
24 25	12 12 6 7	24		0-18": SLOUGH. 18"-24": Dark grey SAND, some fine Gravel and Silt; sheen on water.	0.7 0.6	Mild petro-like odor	Wet Wet	
26 27	4 4 5 6	8		Dark grey SAND, some Silt, trace Clay; sheen on water.	13.1	Moderate petro-like odor	Wet	

ND - Not Detected NR - Not Recorded

Notes:
Sample PP-RW5(5-7) was analyzed for TCL VOCs (Method 8260); Sample PP-SB-(9.5-10.5) was analyzed for TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 5'.

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl, New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. **RW-5**

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Drilling Method:	31/2" Hollow Stem Auger
Sampling Method:	2" Split Spoon
Driller:	General Borings, Inc
Weather:	60°F Cloudy
Sampler:	AKRF/A. Sivers & R. Kinal

Drilling	Start	Finish
Time:	9:15	12:30
Date:	5/12/03	5/12/03

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
28 29	6 6 12 12	18		Dark grey medium to coarse SAND, some fine Sand and Silt, trace Clay.; sheen on water.	11.0	Moderate petro-like odor	Wet	
30 31	6 6 3 6	12		0-4": Dark grey fine to medium SAND and SILT. 4"-10": Dark grey SILT, some fine to medium Sand, trace Clay. 10"-12": Medium to coarse SAND, some fine Sand and Silt, trace fine Gravel. Sheen on water throughout.	2.6	Strong petro-like odor.	Wet	
32 33	9 9 12 20	18		0-5": Dark grey medium to fine SAND and SILT. 5"-12": Orange and brown medium to coarse SAND, some fine Sand and Silt. 12"-18": Light grey medium to coarse SAND, some fine Sand and Silt. Sheen on water throughout.	1.2 2.5	Moderate petro-like odor Moderate petro-like odor	Wet Wet	
34 35	7 18 21 25	18		Dark grey SAND, little Silt; sheen on water.	3.5 12.1	Strong petro-like odor. Strong petro-like odor.	Wet Wet	PP-RW5(34.5-.5)
36				End of boring at 35' bgs.				
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ND - Not Detected

Notes:

Sample PP-RW5(34.5-35) was analyzed for TCL VOCs (Method 8260); Sample PP-SB-(9.5-10.5) was analyzed for TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

AKRF, Inc.

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Pelham Plaza, Pelham, NY

AKRF Project Number : 03118-0309

Boring No. RW-8

Drilling Method:	31/2" Hollow Stem Auger	Drilling	
Sampling Method:	2" Split Spoon	Start Time: 15:20	Finish Time: 11:40
Driller:	General Borings	Date: 5/13/03	Date: 5/15/03
Weather:	60°F Cloudy		
Sampler:	J. Foley, R. Kinal		

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1				Asphalt and Stone				
2 3	11 14 11 6	12		0-3": Red BRICK. 3"-10": Black SILT, trace Organics, trace fine Sand. 10"-12": Black SAND and fine GRAVEL (rock and slag), trace Silt, (NAPL present).	ND ND	None Moderate tar-like odor	Dry Wet	
4 5	4 4 8 8	8		Dark brown-black SAND and fine GRAVEL (rock and slag), some Silt, (black stained, NAPL present).	38.4 94.5	Moderate tar-like odor Moderate tar-like odor	Wet Wet	PP-RW-8(4-5)
6 7	5 7 9 13	2		Black fine GRAVEL (coal-like and slag), trace Silt, trace Sand, (slight SHEEN on water and gravel).	39.7	Moderate tar-like odor	Wet	
8 9	5 4 4 3	4		Black fine GRAVEL (coal-like and slag), trace Silt, trace Sand, (slight SHEEN on water and gravel, slight yellow oil-like staining on plastic).	58.7	Moderate tar-like odor	Wet	
10 11	2 3 1 2	8		Yellow-green-brown PEAT (roots and grasses), trace Silt, trace Clay, (dark grey silt with SHEEN on outside of peat - believed to be sloughed from spoon).	19.4 17.9	Strong organic-like odor Strong organic-like odor	Moist Moist	
12 13	1 1 1 2	24		0-6": SLOUGH (SHEEN on water). 6"-24": Grey SILT and ORGANICS (stems and leaves), trace Clay.	35.7 71.3	Strong organic-like odor Strong organic-like odor	Moist Moist	
14 15	4 2 2 3	24		0"-6": Dark grey SILT and ORGANICS, trace fine Gravel, (slight SHEEN on water). 6"-24": Dark grey SILT, little Clay, little Organics (leaves and stems).	7.3 15.2	Strong organic-like odor Strong organic-like odor	Moist Moist	
16 17	4 7 17 31	14		0-2": SLOUGH. 2"-14": Grey SAND, little Silt, trace Clay.	16.2 6.1	Moderate organic-like odor Moderate organic-like odor	Moist Moist	
18 19	21 25 25 22	18		0-6": SLOUGH. 6"-18": Grey medium-coarse SAND, trace Silt, trace fine Gravel (material fining towards bottom of interval).	4.0 2.3	Mild petroleum-like odor Mild petroleum-like odor	Wet Wet	
20 21	4 21 50	12		0-6": Grey fine-medium micaceous SAND, (slight oil-like staining on sleeve, likely from sloughing). 6"-12": Grey fine-medium micaceous SAND, trace Silt. Split spoon refusal at 20.5'.	0.0 0.0	Mild petroleum-like odor None	Wet Wet	
22 23		0		Augered through what driller believed to be approximately 2' to 2.5' of cobbles or a boulder. No recovery.			Wet	
24 25	12 13 62 13	8		Grey SILT and micaceous SAND, trace fine Gravel.	0.0	None	Wet	PP-RW-8(23-25)
26 27	23 35 100	2		White quartzite cobble and 1/2" piece of mica schist (presumed bedrock). Split spoon refusal at 26.5'. Bedrock cored from 26.5' to 31.5'.	NR	None	Wet	

ND - Not Detected **NR - Not Recorded**

Notes:

Split spoon refusal at 44'. Bedrock cored from 44' to 49'.
Samples PP-RW8(4-5) and PP-RW-8(23-25) were analyzed for TCL VOCs (Method 8260), TCL SVOCs (Method 8270), TAL Metals (6000/7000 Series Method) and Total Cyanide (Method 9012).

Groundwater apparent at 2'.

AKRF, Inc.	Pelham Plaza, Pelham, NY AKRF Project Number : 03118-0309	Boring No. RW-8

Environmental Consultants

116 East 27th Street, 7th Fl. New York, NY 10016

Drilling Method:	31/2" Hollow Stem Auger		
Sampling Method:	2" Split Spoon		
Driller :	General Borings		
Weather:	60ºF Cloudy		
Sampler:	J. Foley, R. Kinal		

Drilling			
Start		Finish	
Time:	15:20	Time:	9:50
Date:	5/13/03	Date:	5/14/03

Depth (feet)	Blow Counts	Recovery (inches)	Soil Type	Surface Condition: Asphalt-Paved Parking Lot	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
28				Split spoon refusal at at 26.5'. Bedrock at 26.5'. Bedrock cored from 26.5'-31.5'. 5' recovery for 5' core. Bedrock core is grey gneiss with some bands of quartz and bands of mica-rich zones. 29.5' to 30.5' is moderately weathered at fracture points.	ND	None		
29		60						
30								
31				End of Boring at 31.5'.				
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Notes:
Bedrock cored from 26.5' to 31.5'.

ND - Not Detected

APPENDIX B

Groundwater Model Summary

MODEL OBJECTIVES

The primary goal of the groundwater model was to simulate a hydraulic control well system that could achieve capture of groundwater in the western portion of the site and control hydraulic head along the proposed containment wall along Eastchester Creek (RAWP Figure 3.2.1). This approach was conservative because not all of the groundwater in this area contains contaminants greater than NYSDEC standards. Also, simulating capture of groundwater particles inherently overestimates the capture of dissolved-phase contaminants, which may be sorbed to soil particles and degraded by indigenous microorganisms.

The extraction well system was simulated to estimate optimal capture of groundwater at the western portion of the site by:

- Minimizing the number of hydraulic control wells.
- Minimizing pumping rates.
- Evaluating the best placement of wells for capture.

The results of the initial model were used for an initial system design for inclusion in the RAWP. Subsequent aquifer testing will be performed to provide additional data with which the model will be refined. The results of the refined model, including any changes to the hydraulic control system, will be detailed in later design documents.

CONCEPTUAL MODEL

Geologic Framework

The geology and hydrogeology of the site and surrounding region are discussed in detail in Section 1.5 of the RAWP. In general, the site geology consists of native sands and fill materials underlain by metamorphic bedrock. Most of the native materials in the upper five to 10 feet at the site appear to have been replaced with fill material during development at the site. Bedrock outcrops approximately 500 feet north of the site, and at the western bank of Eastchester Creek opposite the northwestern corner of the site. The bedrock surface ranges in depth from approximately 8 feet bgs in the northeastern corner of the site to greater than 126 feet bgs in the southeastern portion. Borings in the eastern portion of the site indicate the presence of a bedrock trough extending from north to south across the eastern end of the site. This trough may represent a past flow channel of the adjacent Eastchester Creek.

The surficial geology at the site consists of fill materials underlain by native soils consisting of organic peat and micaceous sand units. The fill consists of fine to medium sand with brick, gravel, and coal fragments, and is thicker in the central and eastern portions of the site. An organic peat layer is present below the fill layer in the western and southwestern portions of the site, and along a portion of the northern edge of the site. The peat layer appears to be absent under the shopping center building and in the eastern portion of the site. The micaceous sand unit (the lower sand) underlies the peat and fill layers, and extends to bedrock.

Groundwater Flow and Recharge

The regional groundwater flow is generally from northeast to southwest. Eastchester Creek, a tidally influenced tributary of Long Island Sound, is adjacent to the site along the western boundary. The site lies within the former flood plain for Eastchester Creek, which is identified as the Hutchinson River south of Interstate Route 95 to the south of the site. Groundwater levels in wells screened below the peat layer in the western portion of the site are tidally influenced (maximum effect of approximately ±1 foot). Slight tidal effects were also measured in monitoring well MW-20 (approximately ±0.11 feet) located at the southeastern corner of the site near the OTB building. A bulkhead structure is present along the western boundary of the site, extending from ground level to an unknown depth into the lower sand unit. The bulkhead decreases the hydraulic connection between the groundwater in the upper fill and peat layers and Eastchester

Creek. The bulkhead is in significant disrepair in several locations along the site boundary.

The groundwater table is generally shallower in the western portion of the site and deeper in the east. The peat layer, when present in sufficient thickness, acts as a semi-confining unit separating the unconfined fill hydrostratigraphic unit and the deeper sand hydrostratigraphic unit. Groundwater measurements of wells screened above and below the peat layer indicate that groundwater is perched above the peat layer (average maximum difference of approximately two feet between water levels above and below the peat).

Based on groundwater levels measured in monitoring and recovery wells, groundwater flow in the deep unit across the site is generally to the west toward Eastchester Creek. Groundwater levels measured in wells above the peat layer show a slight gradient to the east. This easterly gradient is believed to be caused by groundwater mounding above the peat in the fill layer, caused by infiltration of surface water along the bulkhead and from leakage of stormwater from damaged parking lot drains.

Areal recharge also contributes water to the aquifer, albeit in far less quantities than river leakage. Based on data recorded by the National Climatic Data Center, the mean annual precipitation rate in the vicinity of the site is approximately 41 inches per year. Since the majority of rainwater runs off through man-made stormwater drainage channels into streams or evaporates from paved areas, areal recharge was estimated to be less than 0.4 inches per year in the majority of the study area.

MODEL SELECTION

The modular, three-dimensional finite-difference groundwater model MODFLOW (McDonald and Harbaugh, 1988) was used to simulate hydraulic heads in the model domain. MODFLOW is the most widely used and accepted groundwater modeling software in the environmental business. The MODFLOW input and output files were managed in Groundwater Modeling System (GMS), a pre- and post-processing software program developed by Bringham Young University for the United States Department of Defense. The USGS particle-tracking post-processor MODPATH (Pollack, 1989) was used to track the groundwater flow paths within the model.

MODEL DESIGN

Model Domain and Boundary Conditions

The model domain was based on the regional groundwater flow characteristics, including the aforementioned groundwater flow divide and the general direction (northeast to southwest) of groundwater flow. The upgradient boundary of the model was assigned zero-flux (or no-flow) cells, which coincided with the regional groundwater flow divide. No-flow cells were also assigned along the lateral boundaries parallel to regional groundwater flow. General head cells were used to simulate the downgradient boundary of the model at Eastchester Creek along the western model boundary. General head boundaries are specified head boundaries where the flux through the cell is controlled using a conductance value. The conductance of each general head cell was based on the cell dimensions and the hydraulic conductivity of the cell. These boundary conditions were used for all steady-state simulations and for the initial model calibration.

Model Grid and Layer Discretization

As shown in Figure I-1 the grid was constructed in a northeastern-southwestern orientation generally parallel to the section of Eastchester Creek adjacent to the site, which is generally consistent with regional flow conditions. Grid cells in the vicinity of the site are 20-feet by 20-feet in size. Outside of the site area, the cells increase in size by a factor of 1.1 to a maximum size of 200-feet by 200-feet. The refined grid in the vicinity of the site was used to provide more detailed model results in the area of the proposed hydraulic control system.

The model was discretized into five layers to simulate general stratigraphic conditions at the site. Layer 1, the uppermost layer in the model, represents the fill unit present at the site. Layer 2 represents fine to medium sands prevalent below the fill. Layer 3 represents the peat layer in areas where peat is present at the site, and represents medium sand where peat was not observed in site borings. Layer 4 represents the micaceous sand unit. Layer 5 is a thin layer that also represents the lower micaceous sand, except in areas where weathered bedrock was noted in site borings. For modeling purposes, it was assumed that the layers thinned to the eastern model boundary (upland areas) and were generally consistent throughout the Eastchester Creek valley area and into the costal lowlands present south of the site.

The elevations of the top model layer were mapped from USGS DEM data downloaded from a third-party website supported by the USGS. Elevation data for the top and bottom of each model layer was mapped from scatter-point data created from site boring layer elevations. Control points for each layer were created in GMS to extend layer data to areas within the model domain outside of the immediate site area, where limited subsurface information was available. This allows for control of layer thicknesses outside of the site boring dataset.

Hydrogeologic Characteristics

Hydrogeologic properties assigned to each layer of the model included horizontal and vertical hydraulic conductivity, porosity, and storativity. These parameters were estimated based on the geologic characteristics of each layer and adjusted within typical ranges during calibration. To simulate discontinuous silt and gravel zones within the site area, Layers 2, 3, 4, and 5 were assigned K values based on the presence of these materials in boring logs and interpolations of their horizontal extent at the site. The initial K value ranges for Layers 1, 2, 3, and 5 are based on published general values for the materials being simulated. Vertical hydraulic conductivity was adjusted based on a ratio to horizontal hydraulic conductivity. Initial K value ranges for Layer 4 were based on published values and on values estimated from tidal information from Phase II SIR, using a method for determining aquifer transmissibility from cyclic water-level fluctuations (John G. Ferris, USGS Water Supply Paper 1536-I).

The porosity of the silty sand aquifer was estimated at 30 percent based on the porosity for sand (25-40 percent) and silt (35-50 percent) (Driscoll, 1995). Storativity values estimated from the pumping test were initially used and then adjusted during the transient calibration of the model.

Recharge

Initial recharge values for the site domain are based on precipitation data for the area from the National Weather Service, with corrections made for land cover type. Most of the area is assumed to be urban, with a large portion of precipitation being channeled into municipal stormwater drainage and sewer systems. Areas of greenway along Boston Post Road, to the east of the site, were assigned higher values for recharge. Recharge in the model domain was applied to the topmost active layer of the model grid.

Leaking stormwater drainage structures (pipes, channels, cisterns, etc.) observed in the parking lot at the western end of the site were assumed to be contributing to groundwater recharge above the peat layer present in this area. Areal recharge was assigned to the model in discrete areas in the western portion of the site to simulate the leaking stormwater drainage structures, based on an estimated percentage of surface runoff (five to 10 percent) volume from the western parking lot area between the former Kmart building and Eastchester Creek.

An approximately 8,000 square-foot vegetated area adjacent to the Con Edison bulkhead repair was also assumed to contribute to groundwater recharge. Areal recharge was applied to cells in this area in the model to simulate this contribution.

MODEL CALIBRATION

Model calibration was achieved by running steady-state simulations and comparing the resulting hydraulic heads to field measured values. Based on the calibration results discussed below, the model simulated steady-state conditions within a reasonable amount of error.

The model was calibrated to mean annual groundwater levels measured between October 2000 and July 2001. These observed data were assigned to the different layers of the model based on the screened intervals of the wells. A trial and error method was used to calibrate the model by adjusting individual hydrogeologic parameters (including horizontal and vertical hydraulic conductivity, porosity, and storativity), boundary conditions, and areal recharge within a range of site-specific values. For each model run, the simulated heads were compared interactively to the measured heads at each well location. In addition, the mean error, mean absolute error, and root mean squared (RMS) error were calculated for each model run. Mean error is the mean difference between measured hydraulic heads and simulated heads. Mean absolute error is the mean of the absolute value of differences in measured and simulated heads. RMS error represents the standard deviation, or average of the squared differences in the measured and simulated heads. This trial and error method was repeated until the differences between simulated and observed heads, and the calculated errors, were minimized.

The majority of simulated heads were within one foot of the mean annual water levels. As shown on Figure I-2, modeled heads were within one foot or less of the mean annual groundwater levels measured at the site. In general, the error between calculated and measured hydraulic heads is acceptable if mean and absolute error is low (less than 1) and the RMS error does not exceed the maximum difference in measured heads across the model domain. As summarized on Figure I-2, the mean error (-0.147), mean absolute error (0.476), and root mean squared error (0.545) were within acceptable calibration limits.

HYDRAULIC CONTROL WELL SIMULATIONS

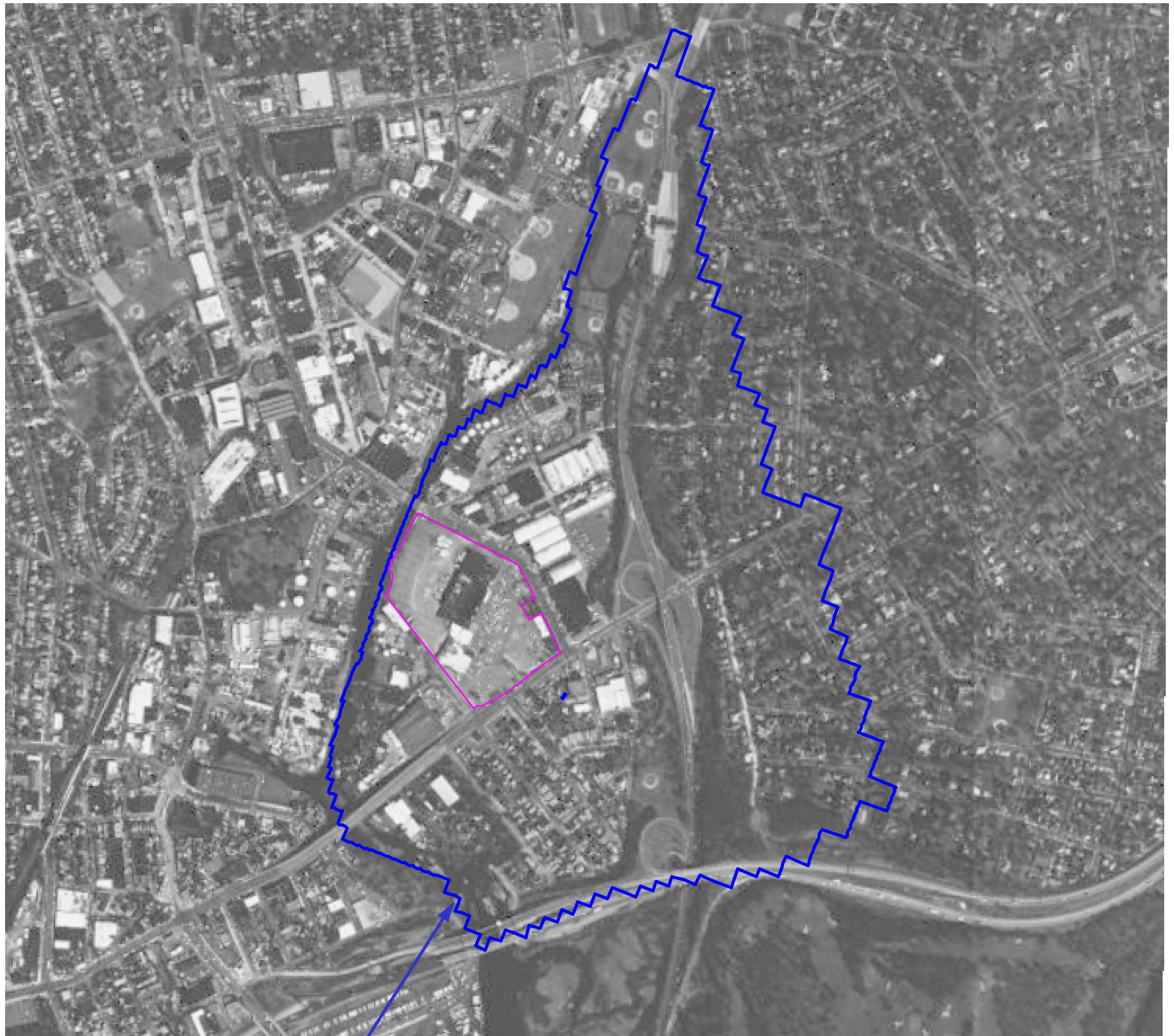
The calibrated model was used to evaluate different configurations and different pumping rates of hydraulic control wells in the western portion of the site. Numerous simulations were run to estimate optimal capture of groundwater at the western portion of the site while minimizing the number of extraction wells, minimizing pumping rates, minimizing drawdown on adjacent properties, and allowing flexibility for cycling during routine maintenance of the wells.

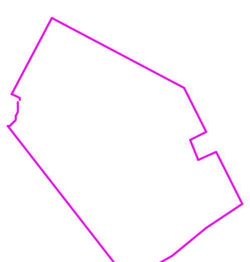
Forward particle tracking (MODPATH) was used to evaluate the hydraulic containment of groundwater flowing beneath the western edge of the landfill. Particles were released at the perimeter of the site along the proposed hydraulic containment barrier, along the northwestern and southwestern property boundaries, and along the center of the site on the western side of the former Kmart building (Figures I-3 and I-4) in each of the five layers to simulate groundwater flow in the area that may contain dissolved-phase chlorinated hydrocarbons. Particles were also released in the cells representing the area of RW-10 and RW-11, to evaluate the potential for groundwater capture and control in this area.

Simulation Results

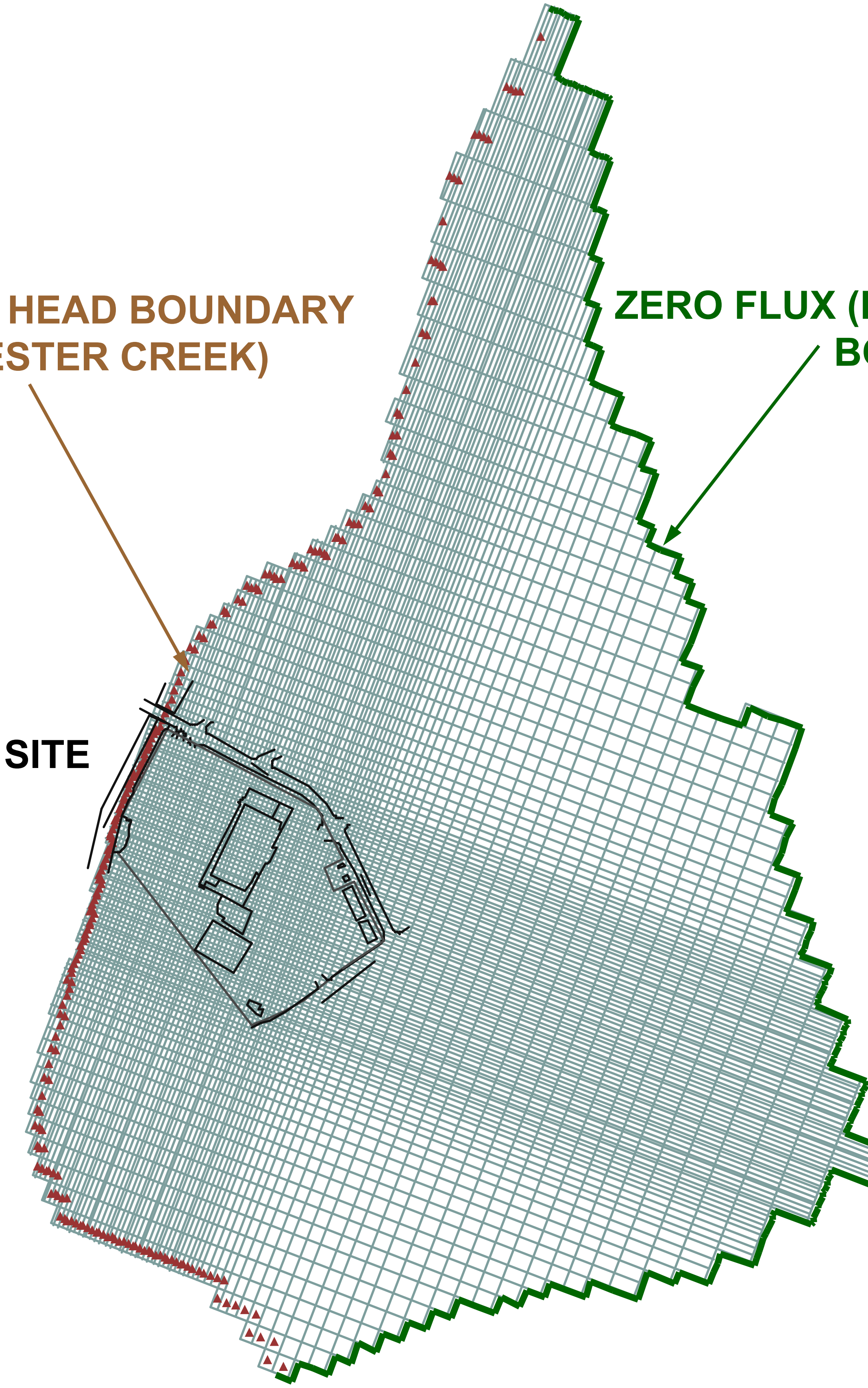
Based on the results of the steady-state simulations, a four-well system with an estimated total pumping rate of 30 gpm is proposed, as discussed in Section 3.2.3 of the RAWP. The deep hydraulic control cluster well, RW-3 and RW-1 are screened in the sand below the peat layer, and the shallow hydraulic control cluster well is screened above the peat layer. As shown in Figures I-3 and I-4 (shallow zone above peat layer and deep zone below peat layer, respectively), the MODPATH simulation solution indicated capture in the western portion of the site and within the area of RW-10/RW-11 southeast of the former Kmart building.

A two-well cluster was necessary for hydraulic control near the southern end of the hydraulic barrier wall with wells screened above and below the peat layer. The simulation indicated that hydraulic control at the northern property boundary near the barrier wall was better facilitated by pumping on the existing RW-1 instead of extending the proposed barrier wall into the site.





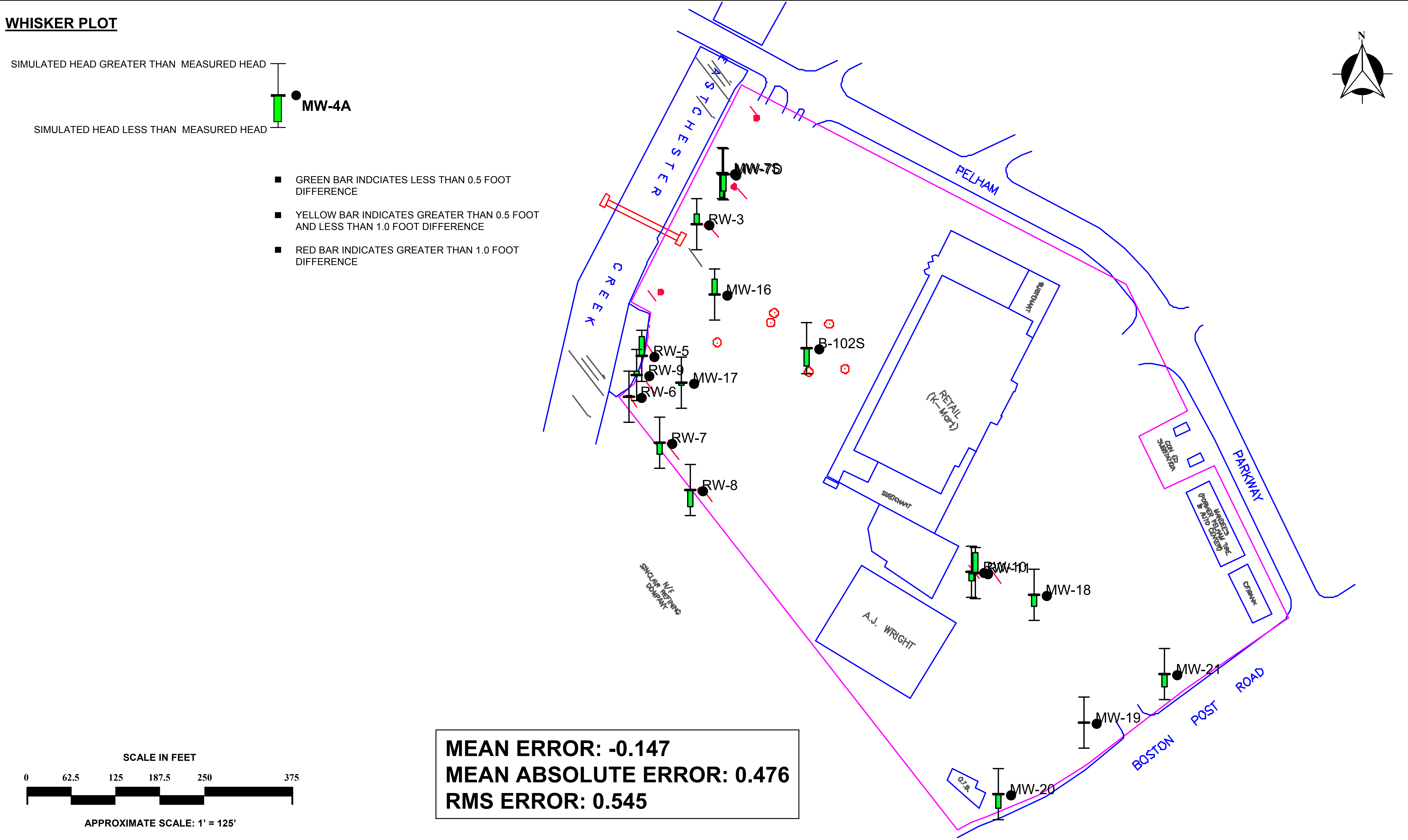
SITE AREA/ PROPERTY LINE



NOT TO SCALE

MALCOLM PIRNIE	PELHAM PLAZA PELHAM MANOR, NEW YORK **MODEL DOMAIN**	© 2004 MALCOLM PIRNIE, Inc. **FIGURE I-1**

MODFLOW Model: F:\PROJECT\4933001\Pelham Model\Simulations\FULL_WALL03.mfs (GMS: FULL_WALL.gpr)
LOCATION: F:\PROJECT\4933001\Pelham Model\Model Results\HC Model Results.PPT



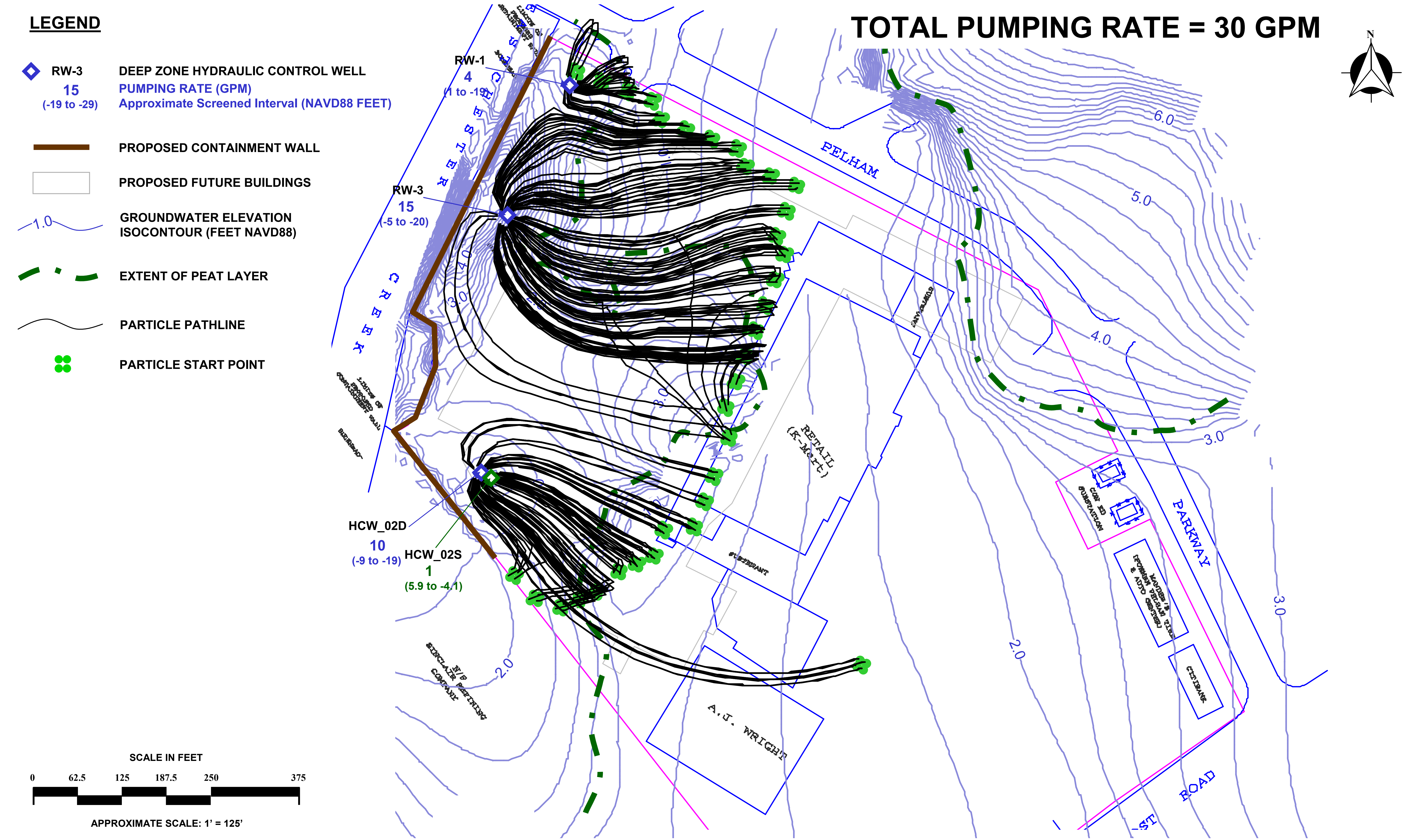
MALCOLM PIRNIE

PELHAM PLAZA
PELHAM MANOR, NEW YORK

CALIBRATION RESULTS – WISKER PLOTS

FIGURE I-2

MODFLOW Model: F:\PROJECT\4933001\Pelham Model\Simulations\FULL_WALL03.mfs (GMS: FULL_WALL.gpr)
LOCATION: F:\PROJECT\4933001\Pelham Model\Model Results\HC Model Results.PPT



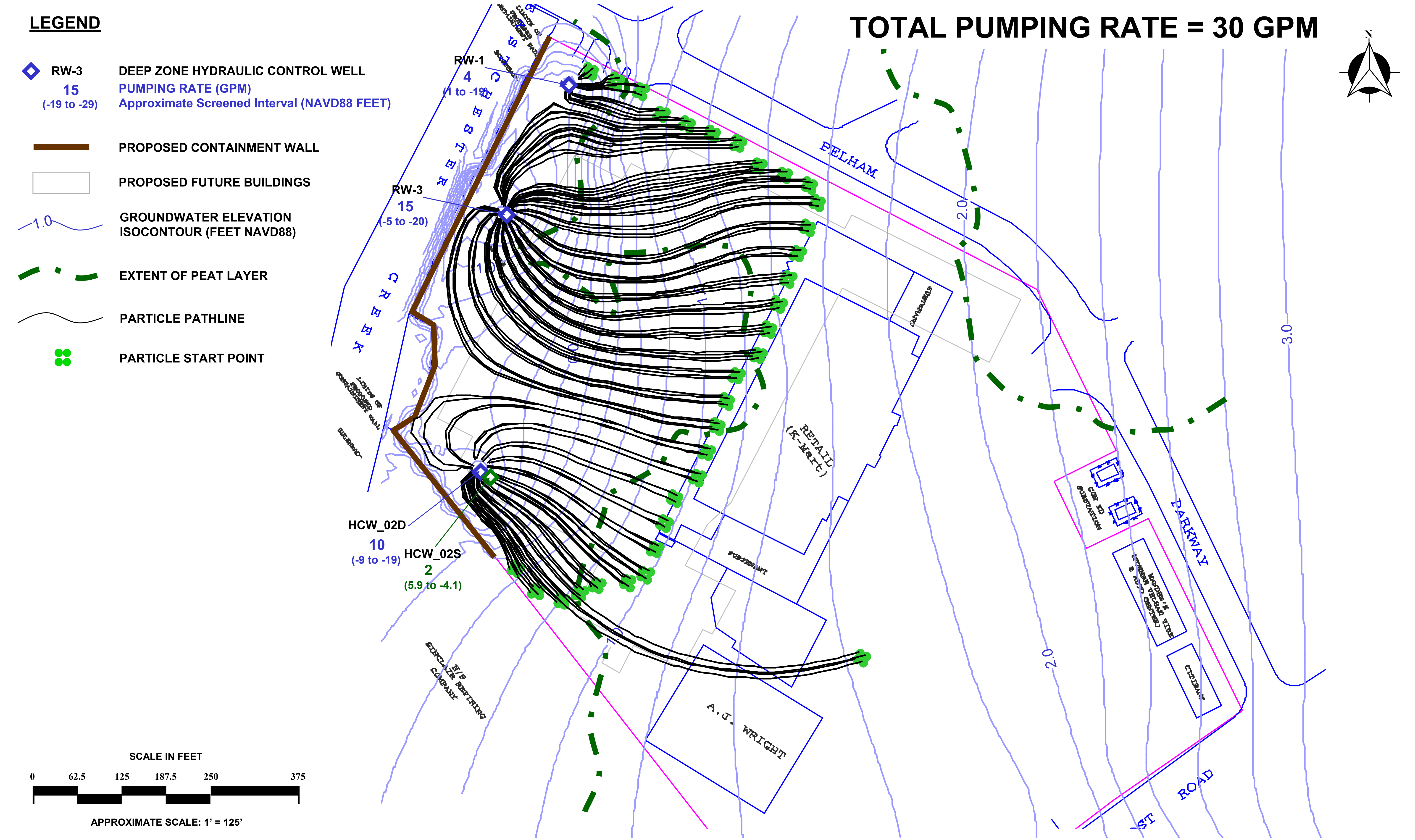
MODFLOW Model: F:\PROJECT\4933001\Pelham Model\Simulations\FULL_WALL03.mfs (GMS: FULL_WALL.gpr)
LOCATION: F:\PROJECT\4933001\Pelham Model\Model Results\HC Model Results.PPT

MALCOLM PIRNIE

PELHAM PLAZA
PELHAM MANOR, NEW YORK

SHALLOW ZONE HYDRAULIC CONTROL SIMULATION RESULTS

FIGURE I-3



MODFLOW Model: F:\PROJECT\4933001\Pelham Model\Simulations\FULL_WALL03.mfs (GMS: FULL_WALL.gpr)
LOCATION: F:\PROJECT\4933001\Pelham Model\Model Results\HC Model Results.PPT

MALCOLM PIRNIE

PELHAM PLAZA
PELHAM MANOR, NEW YORK

DEEP ZONE HYDRAULIC CONTROL SIMULATION RESULTS

FIGURE I-4

APPENDIX C

NYSDOH Generic Community Air Monitoring Plan

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

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

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all <u>ground intrusive</u> activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring partculate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

P:\4933001\RAWP\Appendices\Generic Camp.doc

APPENDIX D

NYSDEC TAGM 4061 (management of coal tar waste and coal tar contaminated soils and sediment from former MGPs)

THE DEC POLICY SYSTEM

New York State
Department of Environmental
Conservation

PROGRAM POLICY	**PROGRAM ID: DER - 4 TAGM 4061**
Title: MANAGEMENT OF COAL TAR WASTE AND COAL TAR CONTAMINATED SOILS AND SEDIMENT FROM FORMER MANUFACTURED GAS PLANTS ("MGP"s)	
Issuing Authority: Name: Susan Taluto Title: Deputy Commissioner, Water & Environmental Remediation <u>Susan Taluto /S/</u> Signature — <u>11/30/01</u> Date Name: Carl Johnson Title: Deputy Commissioner, Air & Waste Management <u>Carl Johnson /S/</u> Signature — <u>12/03/01</u> Date Issuance Date: January 11, 2002	**Originating Unit:** Division of Environmental Remediation Technology Section Phone: (518) 402-9756 Latest Review Date (Office Use):

Abstract: This guidance outlines the criteria wherein coal tar waste and soils and sediment that have been contaminated with coal tar waste from former manufactured gas plants (MGPs) only exhibiting the toxicity characteristic for benzene (D018) may be conditionally excluded from the requirements of 6 NYCRR Parts 370 -374 and 376 when they are destined for permanent thermal treatment. This is an amended version of the document effective on September 13, 2001. The only modification is to the Responsibility Section. Additions are underlined and deletions are stricken.

I. PURPOSE (Back)

This guidance memorializes an exercise of enforcement discretion, effective immediately, with regard to the conditional exclusion of soils, sediments, and waste contaminated with coal tar from the site of former Manufactured Gas Plants ("MGPs") which exhibit the toxicity characteristic for benzene (D018) from New York State's hazardous waste management regulatory program. The intent of this exercise is to facilitate the permanent treatment of these materials in an environmentally sound manner.

This change will be proposed as part of the next rulemaking which includes 6 NYCRR Part 371. This Enforcement Directive supersedes Program Policy DER - 3 (TAGM 4060) entitled "Management of Soil and Sediment Contaminated with Coal Tar From Former Manufactured Gas Plants." Specifically, that guidance allows for the decharacterization of coal tar contaminated soil and sediment which exhibit the D018 hazardous characteristic, that were destined for thermal treatment. That guidance did not allow for the decharacterization of coal tar that failed the D018 hazardous characteristic, requiring that it be managed as a hazardous waste.

II. BACKGROUND (Back)

Historically, MGP contaminated soils, sediments or waste were regulated as hazardous if they exhibited a hazardous waste characteristic. On April 21, 2000, a court decision (*Association of Battery Recyclers Inc. vs. United States Environmental Protection Agency* - April 21, 2000) vacated the use of the Toxicity Characteristic Leaching Procedure (TCLP) test to determine if, under federal law, MGP waste and contaminated soils exhibited a characteristic of hazardous waste. The United States Environmental Protection Agency (USEPA) has not challenged the decision and has clarified its position in a letter to Vectren Corporation, dated October 19, 2000, and a memo to USEPA Senior Resource Conservation and Recovery Act (RCRA) personnel. These documents acknowledge that the TCLP test cannot be used to determine if MGP waste, contaminated soil, or contaminated sediment exhibits a characteristic of a hazardous waste and since these materials typically do not exhibit any other hazardous characteristic, they will unlikely be classified as a hazardous waste under the federally administered program.

USEPA also acknowledged that many states have regulations that are broader in scope than the federal regulations, and may regulate MGP wastes as hazardous under their own state requirements.

The *Battery Recyclers* case does not directly affect New York's hazardous waste management regulatory program since its program derives from state, not federal, law. However, USEPA has authorized the State program to be administered in lieu of the federal RCRA program. New York's hazardous waste management regulatory program currently uses TCLP to determine if MGP contaminated soil exhibits a characteristic of a hazardous waste.

The Department of Environmental Conservation (DEC) recognizes that mixing of soil or sediment occurs through the normal consolidation of contaminated soil or sediment from various portions of a site during the course of remedial activities or in the course of normal earthmoving and grading activities, and does not consider this to be a form of impermissible dilution. However, mixing cannot be allowed to merely dilute the hazardous constituents into a larger volume so as to lower the constituent concentration in order to avoid treatment.

III. Policy (Back)

Applicability

This guidance applies to former MGP sites being remediated under the oversight of the DEC, either through a Consent Order, Voluntary Cleanup Agreement or State funded project, in instances where soil or sediment contaminated with coal tar related residuals will be thermally treated (as in a combustion boiler unit or in a thermal desorber) at an off-site (including out-of -state) facility permitted to receive non-hazardous contaminated soil or at an on-site facility. This guidance does not apply to coal tar contaminated materials which contain significant quantities of purifier wastes or any quantity of other hazardous wastes. A significant quantity of purifier waste is defined as any quantity that would cause the MGP site remediation waste mixture, sent for thermal treatment, to contain in excess of 3.5 % sulfur by weight. Other hazardous waste includes listed hazardous wastes and wastes exhibiting a characteristic of a hazardous waste except for MGP related remediation waste exhibiting the Toxicity Characteristic for benzene. MGP site remediation waste meeting the applicability requirements that are being sent out of state must comply with the rules and regulations of the receiving state.

Requirements

A. Management of Soil/Sediment: Management of MGP site remediation waste meeting the applicability requirements, that is under DEC oversight is not subject to the DEC's hazardous waste management regulatory program {6 NYCRR Parts 370 to 374 and 376} if that soil or sediment is thermally treated at a facility permitted to receive non-hazardous contaminated soil or sediment. The following activities are exempt from the hazardous waste management requirements, however they continue to be subject to the solid waste management requirements {6NYCRR Parts 360 and 364}:

a. Excavation and storage at the point of generation;
b. Transportation to the thermal treatment facility or unit;
c. Handling and storage prior to thermal treatment at the facility;
d. Thermal treatment; and
e. Management of treated materials.

Materials transported off-site, and are stored outside the shipping container at locations other than the site of generation or the treatment facility, must be placed on an impervious surface such as asphalt, concrete or other impervious material and covered with plastic or other impervious material. Storage at the treatment facility must be in compliance with the facility's permit.

MGP site remediation waste meeting the applicability requirements can be mixed with coal fines, carbon, onsite soil, sediment or other materials deemed necessary to facilitate and ensure proper operation of the final treatment technology as approved by the DEC.

There must be a demonstration that MGP site remediation wastes do not contain a significant quantity of purifier wastes, do not contain any listed waste or do not exhibit a characteristic of a hazardous waste (except for

TCLP benzene) and are not otherwise incompatible with proper and effective thermal treatment. Soil or sediment which contains discernable amounts of purifier material must be tested for hazardous characteristic of reactivity, total cyanides and sulfur.

B. Permit Requirements: No solid waste management permit is required for the thermal treatment of coal tar contaminated soil or sediment from a former MGP site by a corporate entity acting pursuant to a Consent Order or a Voluntary Cleanup Agreement, provided that the thermal treatment occurs either at that site or at another former MGP site owned by the same corporate entity and provided that the applicable substantive regulatory requirements are met. Coal tar contaminated soil or sediment may also be transported to a facility for thermal treatment which has received a permit to accept this type of contaminated material. Coal tar contaminated soil or sediment must be transported by a 6 NYCRR Part 364 permitted transporter.

C. Land Disposal Restrictions: Coal tar contaminated materials which meet the applicability requirements and the respective treatment residuals are not subject to the LDRs.

IV. Responsibility (Back)

The person(s) remediating the site is(are) responsible for complying with all applicable regulations. This includes the LDRs if the materials are not destined for permanent thermal treatment. The Project Manager assigned to oversee the remediation of the former MGP site, is responsible for reviewing and accepting any demonstration that the materials are being managed in accordance with this policy. The Project Manager's supervisor must concur with the Project Manager's determination.

APPENDIX E

NYSDEC TAGM 4031

(fugitive dust suppression and particulate monitoring)

New York State Department of Environmental Conservation

TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM #4031

FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

TO: Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs

FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation

SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM -- FUGITIVE DUST SUPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

DATE: Oct 27, 1989

Michael J. O'Toole, Jr. (signed)

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
      Temperature: 0 to 40°C
      Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind <u>at</u> the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

    Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX F

NYSDEC Contact List

(Region 3 and Central Office)

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New York State Department of
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This directory includes DEC's executive management and division directors. Executive managers are appointed by the Governor to carry out the policies of the state. Division directors have direct management responsibility for the department's programs.

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APPENDIX G

Health and Safety Plan

HEALTH AND SAFETY PLAN

A Site-specific HASP will be developed for the implementation of the remedial activities at the Site. The HASP will outline safe work practices, monitoring requirements and personal decontamination procedures to be followed during remedial activities in accordance with applicable OSHA and NYSDOH regulations. The HASP will include monitoring requirements outlined in the NYSDOH Generic Community Air Monitoring Plan and the Site-specific Community Air Monitoring Plan (CAMP). The HASP will be prepared and submitted under separate cover once the scope of work of the remedial actions and means and methods of their implementation have been defined. The Site specific CAMP will also be submitted under separate cover.

APPENDIX H

Citizen Participation Plan

CITIZEN PARTICIPATION

The general requirements for public notice and comment for the Site have been obtained from the New York State Department of Environmental Conservation's (NYSDEC) Draft Voluntary Cleanup Program Guide (May 22, 2002) and are listed below. More extensive citizen participation activities may be undertaken by the NYSDEC for sites which have significant public interest. All citizen participation activities are conducted by the Department in cooperation with the New York State Department of Health (NYSDOH). Input will be provided from the Volunteer, when appropriate.

Once the NYSDEC deems that the Remedial Action Work Plan is approvable, the NYSDEC Project Manager will issue a notice of the availability of the work plan for review and comment in the Environmental Notice Bulletin (ENB). The notice will provide for a 30-day comment period during which written comments may be submitted to the NYSDEC. The NYSDEC Project Manager will be listed as the contact person in the notice.

Notice that the Remedial Action Work Plan is available for review will be provided by the NYSDEC Project Manager to each municipality within which the site is located, as appropriate:

County... County Executive
Town..Supervisor
City (if applicable).......................................Mayor
Village (if applicable).................................Mayor

A fact sheet will be developed which specifies the start and end dates of the public comment period, where to find and review the project documents, and how to submit comments. A document repository will be established where interested citizens can conveniently review the project work plans.

For non-Registry sites, no formal response from the NYSDEC is required for comments received. The NYSDEC Project Manager will send an acknowledgment for any written comments received. However, the NYSDEC may make revisions to the work plans if appropriate.

APPENDIX I

Summary of DNAPL Recovery and Physical/Chemical Analyses

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	(% moisture)[4]	(oil gal)[5]	Total Recovered (gal)
RW-1	6	18.9	5/27/03	ND	6.05	Trace	ND	Trace								
			6/4/03	ND	7.35	ND	Sheen	ND								
			6/13/03	ND	5.74	ND	ND	ND								
			6/23/03	ND	5.86	Trace	ND	Trace								
			6/30/03	ND	7.7	Trace	ND	Trace								
			7/8/03	ND	6.1	Trace	ND	Trace								
			7/16/03	NM	7.7	Trace	NM	Trace								
			7/22/03	ND	7.01	Trace	Sheen	Trace								
			7/29/03	ND	6.91	Trace	ND	Trace								
			8/6/03	ND	6.51	On probe	ND	2"								
			8/13/03	ND	7.35	On probe	ND	3"								
			8/20/03	ND	7.56	ND	ND	ND								
			8/28/03	ND	8.69	On tape	ND	2"								
			9/5/03	ND	7.39	On tape	ND	2"								
			9/12/03	ND	6.5	On tape	ND	2"								
			9/23/03	ND	6.8	On tape	ND	Spotty								
			10/1/03	ND	7.2	On tape	Sheen	1"								
			10/7/03	ND	7.59	ND	ND	ND								
			10/16/03	ND	7.59	ND	ND	ND								
			10/22/03	ND	6.55	On tape	ND	Spotty		75	0.13					0.13
			11/14/03	ND	8.12	ND	ND	ND								
			11/20/03	ND	6.11	ND	ND	ND								
			11/24/03	ND	6.51	ND	ND	ND								
			12/1/03	ND	5.85	ND	ND	ND								
			12/5/03	ND	7.92	ND	ND	ND								
			12/9/03	ND	6.12	ND	ND	ND								
			12/12/03	ND	6.12	ND	ND	ND								
			12/16/03	ND	5.51	ND	ND	ND								
			12/19/03	ND	4.9	ND	Sheen	ND								
			12/23/03	ND	6.49	ND	Sheen	ND								
			12/30/03	ND	5.41	ND	Sheen	ND								
			1/6/04	ND	5.29	ND	Sheen	ND								
			1/9/04	ND	6.36	ND	Sheen	ND								
			1/13/04	ND	6.41	ND	Sheen	ND								
			1/16/04	ND	6.11	ND	Sheen	ND								
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	Sheen	6.61	ND	Sheen	ND								
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	5.17	ND	Sheen	ND								
			2/13/04	ND	5.12	ND	Sheen	ND		50	0.08					0.08
			2/17/04	ND	5.1	ND	ND	ND								
			2/20/04	ND	5.81	ND	ND	ND								
			2/24/04	**NM - RW-10/11 pump out only**												
			2/27/04	Sheen	5.92	ND	Sheen	ND								
			3/2/04	Sheen	5.33	ND	Sheen	ND								
			3/5/04	Sheen	5.54	ND	Sheen	ND								
			3/9/04	Sheen	5.98	ND	Sheen	ND								
			3/12/04	Sheen	5.49	ND	Sheen	ND								
			3/16/04	Sheen	5.34	ND	Sheen	ND								
			3/19/04	Sheen	4.56	ND	Sheen	ND								
			4/5/04	Sheen	5.84	ND	Sheen	ND								
			4/13/04	Sheen	5.06	ND	Sheen	ND								
			4/16/04	Sheen	5.11	ND	Sheen	ND								
			4/20/04	ND	6.12	ND	ND	ND								
			4/23/04	ND	5.84	ND	ND	ND								
			4/30/04	ND	5.12	ND	ND	ND								
			5/7/04	ND	5.69	ND	ND	ND								
			5/10/04	ND	5.41	ND	ND	ND								
			5/14/04	ND	5.11	ND	ND	ND								
			5/21/04	ND	5.94	ND	ND	ND								
			6/11/04	ND	5.16	ND	ND	ND								
			6/18/04	ND	5.99	ND	ND	ND								
			6/25/04	NM	NM	NM	NM	NM								
			7/12/04	ND	5.41	ND	ND	ND								
			7/16/04	ND	5.56	ND	ND	ND								
			7/23/04	ND	5.49	ND	ND	ND								
			7/30/04	ND	5.18	ND	ND	ND								
			8/9/04	ND	5.24	ND	ND	ND								
			8/16/04	ND	5.62	ND	ND	ND								
			8/23/04	ND	5.56	ND	ND	ND								
			8/30/04	ND	6.44	ND	ND	ND								
			9/7/04	ND	5.84	ND	ND	ND								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			9/13/04	ND	5.5	ND	ND	ND								
			9/22/04	ND	5.22	ND	ND	ND								
			10/4/04	ND	5.08	ND	ND	ND								
			10/18/04	ND	5.89	ND	ND	ND								
			10/25/04	ND	4.91	ND	ND	ND								
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	5.35	ND	ND	ND								
			11/15/04	ND	5.31	ND	ND	ND								
			11/22/04	NM	4.91	ND	NM	ND								
			11/29/04	NM	5.31	ND	NM	ND								
			12/6/04	NM	5.32	ND	NM	ND								
			12/13/04	NM	4.11	ND	NM	ND								
			12/20/04	NM	4.89	ND	NM	ND								
			12/27/04	ND	5.21	ND	ND	ND								
			1/3/05	ND	5.74	ND	ND	ND								
			1/10/05	ND	4.79	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	4.79	ND	ND	ND								
			2/14/05	ND	5.71	ND	ND	ND								
			2/28/05	ND	5.45	ND	ND	ND								
			3/7/05	ND	4.89	ND	ND	ND								
			3/14/05	ND	5.44	ND	ND	ND								
			3/21/05	ND	5.12	18.45	ND	0.05								
			3/28/05	ND	5.21	ND	ND	ND								
			4/4/05	ND	4.22	ND	ND	ND								
			4/11/05	ND	5.26	ND	ND	ND		25	0.04					0.04
			5/8/05	ND	5.41	On tape	ND	0.2								
			5/16/05	ND	5.26	On tape	ND	0.3								
			5/23/05	ND	7.56	On tape	ND	0.1		10	0.02					0.02
			6/6/05	ND	5.1	On tape	ND	0.5		100	0.17					0.17
			6/13/05	ND	5.61	On tape	ND	0.2		10	0.02					0.02
			6/20/05	ND	5.49	ND	ND	ND								
			6/27/05	ND	5.29	ND	ND	ND								
			7/11/05	ND	5.18	18.85	ND	0.05								
			7/18/05	ND	5.35	ND	ND	ND								
			7/25/05	ND	5.41	ND	ND	ND								
			8/1/05	ND	5.69	ND	ND	ND								
			8/8/05	ND	5.48	ND	ND	ND								
			8/15/05	ND	5.56	ND	ND	ND								
			8/22/05	ND	5.61	ND	ND	ND								
			9/19/05	ND	5.92	ND	ND	ND								
			10/3/05	ND	6.85	ND	ND	ND								
			10/17/05	ND	5.9	ND	ND	ND								
			10/31/05	ND	5.14	ND	ND	ND								
RW-6	6	40.5	5/27/03	ND	6.55	NM	ND	~10								
			5/28/03	ND	5.74	34.4	ND	6.1	8.0							8.00
			6/4/03	ND	7.6	35.6	ND	4.90								
			6/13/03	ND	5.09	34.19	ND	6.31								
			6/16/03	ND	5.19	33.74	ND	6.76				1				1.00
			6/23/03	ND	5.1	34.5	ND	6.00				7				7.00
			6/30/03	ND	8	35.6	ND	4.90					790			790.00
			7/8/03	ND	4.8	36	ND	4.5				10	256			266.00
			7/16/03	NM	9.4	36.9	NM	3.6					438			438.00
			7/22/03	ND	7.09	37	ND	3.5					236.5			236.50
			7/29/03	ND	6.43	34.23	ND	6.27					175			175.00
			8/6/03	ND	6.75	36.7	ND	3.8					104			104.00
			8/13/03	ND	7	35.4	ND	5.1					75			75.00
			8/20/03	Sheen	7.84	36.61	Sheen	3.89					131			131.00
			8/28/03	Sheen	8.1	On tape	Sheen	5.5								
			9/5/03	ND	5.15	32.8	ND	7.7					208			208.00
			9/12/03	ND	4.71	On tape	ND	6								
			9/23/03	ND	NM	On tape	ND	8					268			268.00
			10/1/03	ND	6	On tape	ND	5.3					464			464.00
			10/7/03	ND	5.82	On tape	ND	4					120			120.00
			10/16/03	ND	7.04	On tape	ND	10								
			10/22/03	ND	NM	On tape	ND	7					200			200.00
			11/14/03	ND	9.69	On tape	ND	4					130			130.00
			11/20/03	ND	4.62	On tape	ND	6.5					600			600.00
			11/24/03	Sheen	8.25	On tape	Sheen	3					66			66.00
			12/1/03	ND	6.68	35.3	ND	5'2"					124.4			124.40
			12/5/03	ND	5.12	37.2	ND	3.8					416			416.00
			12/9/03	ND	6.72	37	ND	3.5					no pump			

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			12/12/03	ND	9.64	37.66	ND	2.84					no pump			
			12/16/03	ND	7.8	37.4	ND	3.1					85			85.00
			12/19/03	ND	6.94	37	Sheen	3.5					69.6			69.60
			12/23/03	ND	8.82	37.53	Sheen	2.97					78.8			78.80
			12/30/03	ND	5.51	35.36	Sheen	5.14					80			80.00
			1/6/04	ND	7.21	36.39	Sheen	4.11					38			38.00
			1/9/04	ND	8.52	37.68	Sheen	2.82					41			41.00
			1/13/04	ND	8.16	32.88	Sheen	3.64					27.5			27.50
			1/16/04	ND	6.82	34.78	Sheen	5.72					no pump			
			1/20/04	**NM - Due to snow and ice cover**									no pump			
			1/23/04	**NM - Due to snow and ice cover**									no pump			
			1/27/03	ND	7.98	36.08	Sheen	4.42					no pump			
			1/30/04	**NM - Due to snow and ice cover**									no pump			
			2/3/04	**NM - Due to snow and ice cover**									no pump			
			2/6/04	**NM - Due to snow and ice cover**									no pump			
			2/10/04	ND	8.93	30.79	Sheen	9.71					41.6			41.60
			2/13/04	ND	6.34	36.18	Sheen	4.32					56.1			56.10
			2/17/04	ND	5.74	On tape	ND	8					528			528.00
			2/20/04	Sheen	7.51	35.78	Sheen	4.72					70			70.00
			2/24/04	**NM - RW-10/11 pump out only**									no pump			
			2/27/04	ND	7.16	36.11	ND	4.39					53			53.00
			3/2/04	Sheen	5.31	33.19	Sheen	7.31					5.4			5.40
			3/5/04	Sheen	5.42	34.11	Sheen	6.39					222			222.00
			3/9/04	Sheen	8.92	36.58	Sheen	3.92					284			284.00
			3/12/04	Sheen	7.49	37.37	Sheen	3.13					152.8			152.80
			3/16/04	Sheen	5.49	36.01	Sheen	4.49					50.6			50.60
			3/19/04	Sheen	4.72	33.69	Sheen	6.81					369.2			369.20
			4/5/04	Sheen	9.91	37.71	Sheen	2.79					444.2			444.20
			4/13/04	Sheen	4.69	35.38	Sheen	5.12					21.9			21.90
			4/16/04	Sheen	6.69	30.39	Sheen	1.11					18			18.00
			4/20/04	Sheen	9.71	37.69	Sheen	2.81					216			216.00
			4/23/04	Sheen	8.51	36.09	Sheen	4.41					222.5			222.50
			4/30/04	Sheen	5.39	33.59	Sheen	6.91					46.8			46.80
			5/7/04	Sheen	9.21	36.38	Sheen	4.12					300	85	45.00	45.00
			5/10/04	Sheen	5.82	35.61	Sheen	4.89					109	98.55	1.58	1.58
			5/14/04	Sheen	5.62	36.99	Sheen	3.81					171	NM		
			5/21/04	Sheen	8.99	36.37	Sheen	4.13					167	95.84	6.95	6.95
			6/11/04	Sheen	5.12	34.51	Sheen	5.99					no pump			
			6/18/04	ND	8.75	37.61	ND	2.89					no pump			
			6/25/04	ND	6.55	On tape	ND	13.9(7.0)					no pump			
			7/12/04	ND	5.87	35.89	ND	4.61					no pump			
			7/16/04	Sheen	8.26	36.29	Sheen	4.21					no pump			
			7/23/04	Sheen	7.11	36.09	Sheen	4.41					no pump			
			7/30/04	Sheen	7.99	36.18	Sheen	4.32					no pump			
			8/9/04	Sheen	5.54	34.98	Sheen	5.52					no pump			
			8/16/04	Sheen	8.89	36.88	Sheen	3.62					no pump			
			8/23/04	Sheen	5.71	35.63	Sheen	4.87					no pump			
			8/30/04	Sheen	9.41	37.19	Sheen	3.31					no pump			
			9/7/04	Sheen	5.51	35.18	Sheen	5.32					no pump			
			9/13/04	Sheen	7.45	33.6	Sheen	12					no pump			
			9/22/04	Sheen	4.99	34.56	Sheen	5.94					no pump			
			10/4/04	Sheen	6.72	35.59	Sheen	4.91					no pump			
			10/18/04	ND	8.91	36.81	ND	3.69					no pump			
			10/25/04	ND	5.21	35.58	ND	4.92					no pump			
			11/1/04	NM	NM	NM	NM	NM					no pump			
			11/8/04	ND	5.42	35.98	ND	7.52					no pump			
			11/15/04	ND	9.13	35.5	ND	5					no pump			
			11/22/04	NM	4.91	34.59	NM	5.91					no pump			
			11/29/04	NM	8.41	36.79	NM	3.71	0.00		0.00	0	1,201	66	0.00	0.00
			12/6/04	NM	5.79	35.51	NM	4.99					694	95	34.70	34.70
			12/13/04	NM	8.7	36.3	NM	4.2					306	95.1	14.99	14.99
			12/20/04	NM	5.31	37.08	NM	3.42					no pump			
			12/27/04	ND	5.79	35.89	ND	4.61					59	99.00	0.59	0.59
			1/3/05	NA	NA	NA	NA	NA					no pump			
			1/10/05	ND	7.73	35.8	ND	4.9					412.4	97	12.37	12.37
			1/24/05	NA	NA	NA	NA	NA					no pump			
			1/31/05	ND	7.45	37.1	ND	3.42					233	98	4.66	4.66
			2/7/05	ND	5.95	35.42	ND	5					382	30	267.40	267.40
			2/14/05	ND	6.98	36.25	ND	4.17					641	70	192.30	192.30
			2/28/05	ND	8.85	37.4	ND	3.1					402	85	60.30	60.30
			3/7/05	ND	5.12	35.95	ND	4.55					167	99	1.67	1.67
			3/14/05	ND	8.78	37.3	ND	3.21					167	22	130.26	130.26
			3/21/05	ND	5.71	35.2	ND	5.3					123	98	2.46	2.46
			3/28/05	ND	8.41	37.71	ND	2.79					275	99	2.75	2.75
			4/4/05	ND	4.78	33.5	ND	7					108	95	5.40	5.40

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			4/11/05	ND	8.44	37.51	ND	2.99					no pump			
			5/8/05	ND	7.95	37.4	ND	3.1					247	94	14.82	14.82
			5/16/05	ND	4.63	36.6	ND	3.9					301	96	12.04	12.04
			5/23/05	ND	9.13	37.7	ND	2.8					21	99	0.21	20.79
			6/6/05	ND	8.76	37.7	ND	2.8					29	96	1.16	1.16
			6/13/05	ND	5.1	35.8	ND	4.7					95	No Sample		
			6/20/05	ND	9.18	38.5	ND	4					21	96	0.84	0.84
			6/27/05	ND	5.85	36.4	ND	4.1					96	95	4.80	4.80
			7/11/05	ND	6.67	36.6	ND	3.9					108	93.8	6.70	6.70
			7/18/05	ND	6.01	36.35	ND	4.15					633	97	18.99	18.99
			7/25/05	ND	6.52	36.51	ND	3.59					304	95	15.20	15.20
			8/1/05	ND	7.89	37.11	ND	3.39					165	3	160.05	160.05
			8/8/05	ND	7.31	37.54	ND	2.96					150	65	52.50	52.50
			8/15/05	ND	6.32	35.61	ND	4.89					456	99.1	4.10	4.10
			8/22/05	ND	8.41	37.53	ND	2.97					230	98	4.60	4.60
			9/19/05	ND	9.18	37.89	ND	2.61					108	96	4.32	4.32
			10/3/05	ND	10.2	37.8	ND	2.7					377			
			10/17/05	ND	10.85	37.45	ND	3.05					50			
			10/31/05	ND	7.21	36.81	ND	3.69					323			
RW-9	6	37	9/23/03	ND	NM	On tape	ND	6					275		275.00	275.00
			10/1/03	ND	6.4	On tape	ND	4.8					60			60.00
			10/7/03	ND	5.76	On tape	ND	3					25			25.00
			10/16/03	Sheen	9.35	On tape	Sheen	4					no pump			
			10/22/03	ND	7.2	On tape	ND	4.5					200			200.00
			11/14/03	ND	10.61	On tape	ND	3					100			100.00
			11/20/03	ND	5.69	On tape	ND	4					104			104.00
			11/24/03	ND	9.45	On tape	ND	3					62			62.00
			12/1/03	ND	6.19	On tape	ND	4'2"					no pump			
			12/5/03	ND	5.99	32.7	ND	4.49					160			160.00
			12/9/03	ND	7.58	33.79	ND	3.21					no pump			
			12/12/03	ND	10.2	34.8	Sheen	2.92					no pump			
			12/16/03	ND	8.21	32.08	Sheen	3.91					72			72.00
			12/19/03	ND	5.96	31.26	Sheen	3.84					34			34.00
			12/23/03	ND	8.62	33.92	Sheen	3.08					52.5			52.50
			12/30/03	ND	6.19	32.48	Sheen	4.52					100			100.00
			1/6/04	ND	8.17	33.01	Sheen	3.99					47			47.00
			1/9/04	ND	8.88	33.12	Sheen	3.88					279			279.00
			1/13/04	ND	8.52	32.88	Sheen	4.12					44			44.00
			1/16/04	ND	7.31	35.89	Sheen	1.11					no pump			
			1/20/04	**NM - Due to snow and ice cover**									no pump			
			1/23/04	**NM - Due to snow and ice cover**									no pump			
			1/27/04	ND	8.78	33.08	Sheen	3.92					no pump			
			1/30/04	**NM - Due to snow and ice cover**									no pump			
			2/3/04	**NM - Due to snow and ice cover**									no pump			
			2/6/04	**NM - Due to snow and ice cover**									no pump			
			2/10/04	ND	10.11	31.56	Sheen	5.44					45.5			45.50
			2/13/04	ND	6.89	33.41	Sheen	3.59					71.1			71.10
			2/17/04	Sheen	6.75	On tape	Sheen	3					no pump - truck problems			
			2/20/04	Sheen	8.91	32.09	Sheen	4.91					46			46.00
			2/24/04	**NM - RW-10/11 pump out only**									no pump			
			2/27/04	ND	7.69	33.49	ND	3.51					53			53.00
			3/2/04	Sheen	6.29	33.09	Sheen	3.91					171.5			171.50
			3/5/04	Sheen	6.44	33.11	Sheen	3.89					173			173.00
			3/9/04	Sheen	9.82	33.54	Sheen	3.46					62			62.00
			3/12/04	Sheen	7.81	34.29	Sheen	2.71					132.7			132.70
			3/16/04	Sheen	6.29	34.66	Sheen	2.34					149.4			149.40
			3/19/04	Sheen	6.74	35.28	Sheen	1.72					198.3			198.30
			4/5/04	Sheen	8.46	33.59	Sheen	3.41					191.2			191.20
			4/13/04	Sheen	5.69	34.01	Sheen	2.99					609			609.00
			4/16/04	ND	7.55	35.69	ND	1.31					52.7			52.70
			4/20/04	ND	10.38	33.52	ND	3.48					130			130.00
			4/23/04	Sheen	9.11	35.29	ND	1.71					175			175.00
			4/30/04	Sheen	6.41	33.29	ND	3.71					154.6			154.60
			5/7/04	Sheen	9.81	34.56	ND	2.44					164	39.8	98.73	98.73
			5/10/04	Sheen	6.28	35.48	ND	1.52					195	95.31	9.15	9.15
			5/14/04	Sheen	6.62	34.89	ND	2.11					191	NM		
			5/21/04	Sheen	9.42	33.39	ND	3.61					215	96.5	7.53	7.53
			6/11/04	Sheen	6.14	32.49	Sheen	4.51					no pump			
			6/18/04	ND	9.76	33.49	ND	3.51					no pump			
			6/25/04	ND	7	32	ND	5					no pump			
			7/12/04	ND	6.81	32.02	ND	4.98					no pump			
			7/16/04	Sheen	8.92	32.91	Sheen	4.09					no pump			

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WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			7/23/04	Sheen	7.29	31.67	Sheen	5.33					no pump			
			7/30/04	Sheen	8.64	31.91	Sheen	5.09					no pump			
			8/9/04	Sheen	6.24	31.51	Sheen	5.49					no pump			
			8/16/04	Sheen	9.52	32.61	Sheen	4.39					no pump			
			8/23/04	Sheen	6.72	32.09	Sheen	4.91					no pump			
			8/30/04	Sheen	10.16	33.58	Sheen	3.42					no pump			
			9/7/04	Sheen	6.21	32.09	Sheen	4.91					no pump			
			9/13/04	Sheen	7	30.6	ND	6					no pump			
			9/22/04	Sheen	5.85	31.46	Sheen	5.54					no pump			
			10/4/04	Sheen	7.38	32.28	Sheen	4.72					no pump			
			10/18/04	ND	9.49	32.48	ND	4.52					no pump			
			10/25/04	ND	6.11	31.78	ND	5.22					no pump			
			11/1/04	NM	NM	NM	NM	NM					no pump			
			11/8/04	ND	6.25	31	ND	6					no pump			
			11/15/04	ND	9.89	32.5	ND	4.5					no pump			
			11/22/04	NM	5.81	31.12	NM	5.88					no pump			
			11/29/04	NM	8.94	32.59	NM	4.41					214	95	10.70	10.70
			12/6/04	NM	6.22	31.99	NM	5.01					111	93	7.77	7.77
			12/13/04	NM	9.2	33	NM	4					489	86	68.46	68.46
			12/20/04	NM	6.25	33.24	NM	3.76					no pump			
			12/27/04	ND	6.94	33.09	ND	3.91					58	35	37.70	37.70
			1/3/05	ND	6.44	33.58	ND	3.42					206.5	95	10.325	10.33
			1/10/05	ND	8.54	33.7	ND	3.5					158.6	30	111.02	111.02
			1/24/05	NA	NA	NA	NA	NA					no pump			
			1/31/05	ND	7.82	33.65	ND	3.42					131	99.5	0.655	0.66
			2/7/05	ND	7	33	ND	4					646	85	96.9	96.90
			2/14/05	ND	7.45	33.25	ND	3.75					613	24	465.88	465.88
			2/28/05	ND	9.55	33.42	ND	3.58					431	75	107.75	107.75
			3/7/05	ND	6.12	32.02	ND	4.98					464	34	306.24	306.24
			3/14/05	ND	9.2	32.5	ND	4.5					276	40	165.6	165.60
			3/21/05	ND	6.67	33.85	ND	3.15					239	38	148.18	148.18
			3/28/05	ND	8.99	33.79	ND	3.21					150	99	1.5	1.50
			4/4/05	ND	5.85	30.2	ND	6.8					122	90	12.2	12.20
			4/11/05	ND	9.12	32.79	ND	4.21					no pump			
			5/8/05	ND	8.53	33.15	ND	3.85					386	92	30.88	30.88
			5/16/05	ND	5	33.23	ND	3.77					309	99	3.09	3.09
			5/23/05	ND	9.7	33.35	ND	3.65					88	68	28.16	28.16
			6/6/05	ND	9.65	33.8	ND	3.2					53	98.5	0.80	0.80
			6/13/05	ND	6.03	33	ND	4					268	90	26.80	26.80
			6/20/05	ND	9.84	33	ND	4					49	89	5.39	5.39
			6/27/05	ND	6.78	33.5	ND	3.5					205	95	10.25	10.25
			7/11/05	ND	6.3	33.2	ND	3.8					89	86.8	11.75	11.75
			7/18/05	ND	7.08	33.88	ND	3.12					93	85	13.95	13.95
			7/25/05	ND	7.04	33.68	ND	3.32					382	5	362.9	362.90
			8/1/05	ND	8.16	33.78	ND	3.22					301	85	45.15	45.15
			8/8/05	ND	7.71	29.29	ND	3.02					179	6	168.26	168.26
			8/15/05	ND	6.31	33.52	ND	3.48					367	12.1	322.593	322.59
			8/22/05	ND	9.21	33.88	ND	3.12					633	96	25.32	25.32
			9/19/05	ND	9.98	32.86	ND	4.14					193	1	191.07	191.07
			10/3/05	ND	10.02	33.25	ND	3.75					822			
			10/17/05	ND	11.25	33.77	ND	3.23					82			
			10/31/05	ND	8.81	32.24	ND	4.76					598			
RW-10	4	47	10/1/03	NM	NM	On tape	NM	6?					517			517.00
			10/7/03	NM	NM	On tape	NM	7					250			250.00
			10/16/03	NM	NM	On tape	NM	10					1531			1531.00
			10/22/03	NM	NM	On tape	NM	19					3809			3809.00
			11/14/03	NM	11.42	On tape	NM	20.5					100			100.00
			11/20/03	NM	11.56	On tape	NM	21.5					no pump			
			11/24/03	ND	11.84	On tape	NM	22					214			214.00
			12/1/03	NM	12.21	17.26	NM	29.74					1998			1998.00
			12/5/03	ND	11.99	16.99	ND	30					1324			1324.00
			12/9/03	ND	12.69	29.2	ND	17.8					no pump			
			12/12/03	ND	11.61	32.58	Sheen	14.42					1278			1278.00
			12/16/03	ND	11.67	32.43	Sheen	13.57					1162			1162.00
			12/19/03	ND	11.82	35.9	Sheen	12.91					1094			1094.00
			12/23/03	ND	12.92	26.78	Sheen	20.22					1328			1328.00
			12/30/03	ND	11.64	33.1	Sheen	13.9					1784			1784.00
			1/6/04	ND	11.62	31.28	Sheen	15.72					1,041			1041.00
			1/9/04	ND	11.94	32.11	Sheen	14.89					1752			1752.00
			1/13/04	ND	11.68	30.72	Sheen	16.27					829			829.00
			1/16/04	ND	12.75	29.79	Sheen	17.21					423			423.00
			1/20/04	ND	11.86	31.11	Sheen	15.89					770			770.00

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			1/23/04	ND	13.46	29.5	Sheen	17.5					809			809.00
			1/27/04	ND	11.99	32.66	Sheen	14.34					1,058			1058.00
			1/30/04	ND	12.03	32.08	Sheen	14.92					561			561.00
			2/3/04	ND	12.07	32.41	Sheen	14.59					1,098			1098.00
			2/6/04	ND	12.08	31.79	Sheen	15.21					1,870			1870.00
			2/10/04	ND	11.61	37.59	Sheen	9.41					278			278.00
			2/13/04	ND	11.71	35.19	Sheen	11.81					127			127.00
			2/17/04	ND	11.85	On tape	ND	16					1045			1045.00
			2/20/04	ND	11.84	33.19	ND	13.81					998			998.00
			2/24/04	ND	11.89	34.59	ND	12.41					664			664.00
			2/27/04	ND	11.97	33.11	ND	13.89					884			884.00
			3/2/04	ND	12.07	32.18	ND	14.82					638			638.00
			3/5/04	ND	12.04	33.84	ND	13.16					489			489.00
			3/9/04	ND	11.98	27.58	ND	19.42					2,138			2138.00
			3/12/04	ND	11.91	27.89	ND	19.11					2,017			2017.00
			3/16/04	ND	11.97	27.71	ND	19.29					2,468			2468.00
			3/19/04	ND	12.01	27.66	ND	19.34					1,948			1948.00
			4/5/04	ND	12.84	27.16	ND	19.84					222			222.00
			4/13/04	ND	11.85	26.15	ND	20.85					2,437			2437.00
			4/16/04	ND	11.79	25.38	ND	21.62					2,059			2059.00
			4/20/04	ND	11.71	27.29	ND	19.71					1,948			1948.00
			4/23/04	ND	11.71	27.2	ND	19.8					2,069			2069.00
			4/30/04	ND	11.89	27.61	ND	19.39					1,564			1564.00
			5/7/04	ND	11.79	26.69	ND	20.31					845	38.9	516.30	516.30
			5/10/04	ND	11.79	27.65	ND	19.35					1,061	64.94	371.99	371.99
			5/14/04	ND	11.81	26.29	ND	20.71					2,561	68.57	804.92	804.92
			5/21/04	ND	11.84	26.48	ND	20.52					872	66.75	289.94	289.94
			6/11/04	ND	11.74	26.19	ND	20.81					1,710	29.42	1206.92	1206.92
			6/18/04	ND	11.86	20.6	ND	26.4					1,589	96.20	60.38	60.38
			6/25/04	NM	NM	NM	NM	NM					1,710	63.33	627.06	627.06
			7/12/04	ND	11.92	26.29	ND	20.71					275	NM		
			7/16/04	ND	12.76	26.88	ND	20.12					1,744	97.67	40.64	40.64
			7/23/04	ND	11.75	25.46	ND	21.54					2,317	98.14	43.10	43.10
			7/30/04	ND	11.62	26.69	ND	20.31					1,948	7.36	1804.63	1804.63
			8/9/04	ND	11.52	26.48	ND	20.52					1,307	60.00	522.80	522.80
			8/16/04	ND	11.62	25.58	ND	21.42					1,307	8.00	1202.44	1202.44
			8/23/04	ND	11.68	25.88	ND	21.12					998	12.40	874.25	874.25
			8/30/04	ND	11.79	26.06	ND	20.94					1,307	77.70	291.46	291.46
			9/7/04	ND	11.84	22.59	ND	21.41					1,098	57.40	467.75	467.75
			9/13/04	ND	11.7	26.5	ND	NM					1,415	3.62	1363.78	1363.78
			9/22/04	ND	11.61	26.09	ND	20.91					1,439	5.00	1367.05	1367.05
			10/4/04	ND	11.51	25.89	ND	21.11					1,201	45.00	660.55	660.55
			10/18/04	ND	11.52	25.38	ND	21.62					1,307	21.00	1032.53	1032.53
			10/25/04	ND	11.62	25.31	ND	21.69					1,415	86.00	198.10	198.10
			11/1/04	NM	NM	NM	NM	NM					902	7.00	838.86	838.86
			11/8/04	ND	12.67	25	ND	22					1,098	1.00	1087.02	1087.02
			11/15/04	ND	11.75	25	ND	22					1,307	20.00	1045.60	1045.60
			11/22/04	NM	NM	26.01	NM	20.99					1,526	20.00	1220.80	1220.80
			11/29/04	NM	NM	26.09	NM	20.91					638	36.00	408.32	408.32
			12/6/04	NM	NM	25.2	NM	21.8					638	46.00	344.52	344.52
			12/13/04	NM	NM	27	NM	20					1,201	1.10	1187.79	1187.79
			12/20/04	NM	NM	27.8	NM	19.2					no pump			
			12/27/04	ND	11.94	26.06	ND	20.94					1,688	32.00	1147.84	1147.84
			1/3/05	ND	11.81	26.01	ND	20.99					1,014	29.00	720.08	720.08
			1/10/05	ND	11.75	26.2	ND	20.1					752	32.00	511.02	511.02
			1/24/05	ND	11.68	25.21	ND	21.79					1,100	32.00	748.00	748.00
			1/31/05	ND	11.5	24.58	ND	22.42					1,455	36.00	931.20	931.20
			2/7/05	ND	11.65	24	ND	23					784	30	548.8	548.80
			2/14/05	ND	11.77	26.25	ND	20.75					1,699	23.00	1308.23	1308.23
			2/28/05	ND	11.62	26.08	ND	20.92					1,145	14.00	984.70	984.70
			3/7/05	ND	11.75	26.02	ND	20.98					1,478	22.00	1152.84	1152.84
			3/14/05	ND	11.72	26.09	ND	20.9					1,150	42.00	667.00	667.00
			3/21/05	ND	10.85	26.5	ND	20.85					1,116	47.00	591.48	591.48
			3/28/05	ND	11.59	26.49	ND	20.51					175	42.00	101.50	101.50
			4/4/05	ND	9.71	29.1	ND	17.9					794	34.00	524.04	524.04
			4/11/05	ND	11.92	32.79	ND	26.11					no pump			
			5/8/05	ND	11.4	26	ND	21					1,433	28	1031.76	1031.76
			5/16/05	ND	11.25	21.1	ND	25.9					1,605	60	642.00	1155.60
			5/23/05	ND	11.38	20.35	ND	20.65					1,145	55	515.25	515.25
			6/6/05	ND	11.4	26.1	ND	30.9					1,152	50	576.00	576.00
			6/13/05	ND	11.8	37	ND	10					1,156	55	520.20	520.20
			6/20/05	ND	11.16	31	ND	16					451	43	257.07	257.07
			6/27/05	ND	11.48	26.8	ND	20.2					1,470	4	1418.55	1418.55
			7/11/05	ND	10.9	35.5	ND	11.5					1,809	11	1610.01	1610.01
			7/18/05	ND	11.11	29.11	ND	17.89					1,550	19	1255.50	1255.50

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			7/25/05	ND	11.52	33.15	ND	13.85					1,949	15	1656.65	1656.65
			8/1/05	ND	11.65	26.59	ND	20.41					1,689	6	1587.66	1587.66
			8/8/05	ND	11.54	32.89	ND	14.11					1,766	20	1412.80	1412.80
			8/15/05	ND	10.98	ND	ND	ND					no pump			
			8/22/05	ND	11.31	40.89	ND	6.11					482	14	414.52	414.52
			9/19/05	ND	11.4	45.59	ND	1.41					1,044	5	991.80	991.80
			10/3/05	ND	11.9	31.72	ND	15.28					146			
			10/17/05	ND	11.64	45.4	ND	1.6					1,024			
			10/31/05	ND	10.21	45.59	ND	1.41					479			

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PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
RW-11	4	77	10/1/03	NM	NM	On tape	NM	11.2					92			92.00
			10/7/03	NM	NM	On tape	NM	54					no pump			
			10/16/03	NM	NM	On tape	NM	58					1264			1264.00
			10/22/03	NM	NM	On tape	NM	66					1980			1980.00
			11/14/03	NM	12.61	On tape	NM	62.5					287			287.00
			11/20/03	NM	12.46	On tape	NM	63					428			428.00
			11/24/03	ND	12.8	On tape	ND	62.5					171			171.00
			12/1/03	ND	13.36	13.36	ND	63.4					306			306.00
			12/5/03	ND	13.89	14.5	ND	62.5					714			714.00
			12/9/03	ND	12.84	15	ND	62					no pump			
			12/12/03	ND	12.62	27.18	ND	49.82					662			662.00
			12/16/03	ND	12.58	14.58	ND	63.42					200			200.00
			12/19/03	ND	12.92	15.2	Sheen	61.8					449			449.00
			12/23/03	ND	13.12	20.68	Sheen	56.32					480			480.00
			12/30/03	ND	12.98	25.41	Sheen	51.59					225			225.00
			1/6/04	ND	13.01	NM	Sheen	NM					no pump			
			1/9/04	ND	12.52	14.3	Sheen	62.7					320			320.00
			1/13/04	ND	12.67	19.11	Sheen	57.89					301			301.00
			1/16/04	ND	12.71	20.8	Sheen	56.2					no pump			
			1/20/04	ND	12.8	18.9	Sheen	58.1					262			262.00
			1/23/04	ND	11.51	13	Sheen	64					505			505.00
			1/27/04	ND	11.54	8.96*	Sheen	68.54					422			422.00
			1/30/04	ND	12.41	14.59	Sheen	62.41					662			662.00
			2/3/04	ND	12.61	18.56	Sheen	62.94					538			538.00
			2/6/04	ND	13.11	16.09	Sheen	60.91					908			908.00
			2/10/04	ND	10.11	51.76	Sheen	25.24					no pump			
			2/13/04	ND	11.65	29.09	Sheen	47.91					149			149.00
			2/17/04	ND	12.55	On tape	ND	58					no pump - truck problems			
			2/20/04	ND	12.81	15.51	ND	61.49					260			260.00
			2/24/04	ND	12.84	16.29	ND	60.71					425			425.00
			2/27/04	ND	12.81	13.11	ND	63.89					108			108.00
			3/2/04	ND	13.14	16.79	ND	60.21					82			82.00
			3/5/04	ND	12.11	17.28	ND	59.72					200			200.00
			3/9/04	ND	13.04	14.28	ND	62.72					302			302.00
			3/12/04	ND	12.99	14.11	ND	62.89					217			217.00
			3/16/04	ND	13.04	13.69	ND	63.31					275			275.00
			3/19/04	ND	12.29	12.78	ND	64.22					206			206.00
			4/5/04	ND	12.81	14.19	ND	62.81					57			57.00
			4/13/04	ND	12.83	15.55	ND	61.45					204			204.00
			4/16/04	ND	9.82	51.8	ND	25.2					69			69.00
			4/20/04	ND	11.32	33.59	ND	43.41					204			204.00
			4/23/04	ND	12.91	18.49	ND	58.51					212			212.00
			4/30/04	ND	12.48	16.59	ND	60.41					202			202.00
			5/7/04	ND	12.91	13.71	ND	63.29					140	0.2	139.72	139.72
			5/10/04	ND	12.81	13.28	ND	63.72					345	0.18	344.38	344.38
			5/14/04	ND	11.62	30.02	ND	46.98					199	NM		
			5/21/04	ND	9.91	61.9	ND	15.1					no pump			
			6/11/04	ND	9.82	56.11	ND	20.89					118	0.54	117.36	117.36
			6/18/04	ND	11.34	42.42	ND	34.58					230	3.6	221.72	221.72
			6/25/04	ND	13.2	10.2	ND	66.8					118	13.3	102.31	102.31
			7/12/04	ND	11.31	36.39	ND	40.61					87	0.77	86.33	86.33
			7/16/04	ND	11.61	31.99	ND	45.01					109	0.38	108.59	108.59
			7/23/04	ND	12.11	25.61	ND	51.39					114	1.28	112.54	112.54
			7/30/04	ND	12.26	19.11	ND	57.89					489	1.76	480.39	480.39
			8/9/04	ND	12.23	17.21	ND	59.79					219	28	157.68	157.68
			8/16/04	ND	12.11	20.28	ND	56.72					108	0.8	107.14	107.14
			8/23/04	ND	12.54	18.17	ND	58.83					100	0.7	99.30	99.30
			8/30/04	ND	12.78	13.12	ND	63.88					108	0.5	107.46	107.46
			9/7/04	ND	12.79	13.21	yu	63.79					103	0.98	101.99	101.99
			9/13/04	ND	11.8	25.7	ND	NM					111	4.81	105.66	105.66
			9/22/04	ND	11.79	24.01	ND	52.99					106	0.01	105.99	105.99
			10/4/04	ND	10.81	35.29	ND	41.71					106	0.2	105.79	105.79
			10/18/04	ND	12.06	19.48	ND	57.52					108	3	104.76	104.76
			10/25/04	ND	12.39	27.88	ND	49.12					111	0.01	110.99	110.99
			11/1/04	NM	NM	6	NM	71					96	3.5	92.64	92.64
			11/8/04	ND	11.65	31	ND	46					1,201	14	1032.86	1032.86
			11/15/04	ND	12.65	23.4	ND	53.6					108	36	69.12	69.12
			11/22/04	NM	NM	27.8	NM	49.2					113	36	72.32	72.32
			11/29/04	NM	NM	27.8	NM	49.2					998	0.2	996.00	996.00
			12/6/04	NM	NM	24.38	NM	52.62					83	32	56.44	56.44
			12/13/04	NM	NM	26	NM	51					638	42	370.04	370.04
			12/20/04	NM	NM	21.8	NM	55.2					no pump			
			12/27/04	ND	12.62	23.04	ND	53.96					60	1.5	59.10	59.10
			1/3/05	ND	12.94	16.04	ND	60.96					204.3	16	171.61	171.61
			1/10/05	NM	12.55	15.3	ND	61.9					208.5	1	206.42	206.42

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			1/24/05	ND	12.5	16.08	ND	60.92					154	35	100.10	100.10
			1/31/05	ND	12.51	26.25	ND	50.75					150	65	52.50	52.50
			2/7/05	ND	12.55	14	ND	63					126	14	108.36	108.36
			2/14/05	ND	12.75	13.75	ND	63.25					738	18	605.16	605.16
			2/28/05	ND	12.65	13.75	ND	63.25					91	12	80.08	80.08
			3/7/05	ND	12.92	NA	NA	NA					115	38	71.30	71.30
			3/14/05	ND	12.4	18.6	ND	58.45					173	2	169.54	169.54
			3/21/05	ND	12.45	17.8	ND	59.2					115	16	96.60	96.60
			3/28/05	ND	11.61	30.48	ND	46.52					no pump			
			4/4/05	ND	11.3	51.3	ND	25.7								
			4/11/05	ND	9.65	NM	ND	NM					no pump			
			5/8/05	ND	9.84	47	ND	40					210	8	193.20	193.20
			5/16/05	ND	12.09	16.5	ND	60.5					91	4.5	86.91	83.72
			5/23/05	ND	12.22	15.5	ND	61.5					224	30	156.80	156.80
			6/6/05	ND	12.33	14.8	ND	62.2					222	38	137.64	137.60
			6/13/05	ND	9.78	53.8	ND	23.2					59	45	32.45	32.45
			6/20/05	ND	9.8	51.2	ND	25.8					182	0.3	181.45	181.45
			6/27/05	ND	11.57	26.6	ND	50.4					200	4	192.00	192.00
			7/11/05	ND	9.6	28.4	ND	48.6					119	1	117.81	117.81
			7/18/05	ND	10.12	45.61	ND	31.39					no pump			
			7/25/05	ND	10.28	46.76	ND	30.21					no pump			
			8/1/05	ND	10.31	45.02	ND	31.98					no pump			
			8/8/05	ND	10.41	43.04	ND	33.96					no pump			
			8/15/05	ND	8.96	58.9	ND	18.1					no pump			
			8/22/05	ND	9.94	62.79	ND	14.21					no pump			
			9/19/05	ND	9.94	54.15	ND	22.85					no pump			
			10/3/05	ND	10.12	61.4	ND	15.6					no pump			
			10/17/05	ND	11.28	52.25	ND	24.75					no pump			
			10/31/05	ND	9.21	53.2	ND	23.8					56			

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
MW-3	2	16.59	5/27/03	2.31	2.8	Trace	0.49	Trace								
			5/28/03	2.34	2.8	ND	0.46	ND	15.0							15.00
			6/4/03	1.95	2.01	ND	0.06	ND				2				2.00
			6/13/03	1.93	2.14	ND	0.21	ND								
			6/16/03	1.96	2.09	ND	0.13	ND	0.50							0.50
			6/23/03	1.93	2.11	ND	0.18	ND	3.00							3.00
			6/30/03	2.2	2.6	ND	0.4	ND		66	0.11		10			10.11
			7/8/03	2.45	2.46	ND	0.01	ND		66	0.11					0.11
			7/16/03	2.6	2.65	ND	0.05	ND		60	0.10					0.10
			7/22/03	2.61	2.66	ND	0.05	ND		60	0.10					0.10
			7/29/03	ND	2.6	ND	ND	ND								
			8/6/03	ND	2.25	ND	ND	ND								
			8/13/03	ND	2.23	ND	ND	ND								
			8/20/03	ND	2.3	ND	ND	ND		50	0.08					0.08
			8/28/03	ND	2.61	ND	ND	ND								
			9/5/03	ND	2.44	ND	ND	ND								
			9/12/03	ND	2.55	ND	ND	ND								
			9/23/03	ND	2.34	ND	ND	ND								
			10/1/03	ND	2.22	ND	ND	ND								
			10/7/03	Sheen	2.68	ND	Sheen	ND								
			10/16/03	Sheen	2.68	ND	Sheen	ND								
			10/22/03	ND	2.68	ND	ND	ND		80	0.13					0.13
			11/14/03	ND	2.61	ND	ND	ND		50	0.08					0.08
			11/20/03	ND	2.56	ND	ND	ND								
			11/24/03	ND	2.6	Trace	ND	Trace		80	0.13					0.13
			12/1/03	ND	2.52	ND	ND	ND								
			12/5/03	ND	2.72	ND	ND	ND		95	0.16					0.16
			12/9/03	ND	2.89	ND	ND	ND								
			12/12/03	ND	2.41	ND	ND	ND		80	0.13					0.13
			12/16/03	ND	2.04	ND	ND	ND								
			12/19/03	ND	1.99	ND	ND	ND		100	0.17					0.17
			12/23/03	ND	2.26	ND	Sheen	ND								
			12/30/03	ND	2.49	ND	Sheen	ND								
			1/6/04	ND	2.4	ND	Sheen	ND		100	0.17					0.17
			1/9/04	ND	2.51	ND	Sheen	ND								
			1/13/04	ND	2.68	ND	Sheen	ND								
			1/16/04	ND	2.61	ND	Sheen	ND								
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	ND	3.11	ND	Sheen	ND								
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	2.24	ND	Sheen	ND		100	0.17					0.17
			2/13/04	ND	2.36	ND	Sheen	ND								
			2/17/04	Sheen	2.54	NM	Sheen	NM								
			2/20/04	Sheen	2.51	ND	Sheen	ND								
			2/24/04	**NM - RW-10/11 pump out only**												
			2/27/04	Sheen	2.64	ND	Sheen	ND								
			3/2/04	Sheen	2.71	ND	Sheen	ND		80	0.13					0.13
			3/5/04	Sheen	2.54	ND	Sheen	ND								
			3/9/04	Sheen	2.29	ND	Sheen	ND								
			3/12/04	Sheen	2.21	ND	Sheen	ND		100	0.17					0.17
			3/16/04	Sheen	2.39	ND	Sheen	ND								
			3/19/04	Sheen	2.19	ND	Sheen	ND		100	0.17					0.17
			4/5/04	Sheen	1.92	ND	Sheen	ND								
			4/13/04	Sheen	2.11	ND	Sheen	ND		100	0.17					0.17
			4/16/04	Sheen	1.89	ND	Sheen	ND								
			4/20/04	ND	2.14	ND	ND	ND								
			4/23/04	Sheen	2.14	ND	Sheen	ND		100	0.17					0.17
			4/30/04	2.05	2.06	ND	0.01	ND								
			5/7/04	Sheen	2.14	ND	Sheen	ND		100	0.17					0.17
			5/10/04	Sheen	2.24	ND	Sheen	ND								
			5/14/04	Sheen	2.18	ND	Sheen	ND		100	0.17					0.17
			5/21/04	Sheen	2.21	ND	Sheen	ND								
			6/11/04	ND	2.31	ND	ND	ND		100	0.17					0.17
			6/18/04	ND	2.23	ND	ND	ND								
			6/25/04	ND	2.33	ND	ND	ND		100	0.17					0.17
			7/12/04	ND	2.41	ND	ND	ND		100	0.17					0.17
			7/16/04	2.00	2.01	ND	0.01	ND		100	0.17					0.17
			7/23/04	ND	2.27	ND	ND	ND		100	0.17					0.17
			7/30/04	ND	2.09	ND	ND	ND		100	0.17					0.17
			8/9/04	2.29	2.35	ND	0.06	ND		100	0.17					0.17
	2 socks in well		8/16/04	ND	2.26	ND	ND	ND		200	0.33					0.33
	2 socks in well		8/23/04	ND	2.34	ND	ND	ND		200	0.33					0.33

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	**Well Diameter** (inches)	**Well Depth** (ft bgs)	**Date**	**DTLNAPL** (feet)	**DTW** (feet)	**DTDNPL** (feet)	**LNAPL Thickness** (feet)	**DNAPL Thickness** (feet)	**Bailed** (gal)[1]	**2" x 24" Socks** (% full)	**Absorbent Socks** (gal)[2]	**Pumped** (gal)[1]	**Vac Truck** (total gal)[3]	(% moisture)[4]	(oil gal)[5]	**Total Recovered** (gal)
			8/30/04	Sheen	2.31	ND	Sheen	ND								
			9/7/04	Sheen	2.64	ND	Sheen	ND		100	0.17					0.17
			9/13/04	ND	3.05	ND	ND	ND								
			9/22/04	ND	2.15	ND	ND	ND		100	0.17					0.17
			10/4/04	ND	2.04	ND	ND	ND		100	0.17					0.17
			10/18/04	ND	2.59	ND	ND	ND		100	0.17					0.17
			10/25/04	ND	2.59	ND	ND	ND		100	0.17					0.17
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	2.74	ND	ND	ND		50	0.08					0.08
			11/15/04	ND	2.62	ND	ND	ND		75	0.13					0.13
			11/22/04	NM	2.79	ND	NM	ND								
			11/29/04	NM	2.49	ND	NM	ND		100	0.17					0.17
			12/6/04	NM	2.42	ND	NM	ND		100	0.17					0.17
			12/13/04	NM	2.1	ND	NM	ND								
			12/20/04	NM	2.22	ND	NM	ND		100	0.17					0.17
			12/27/04	ND	2.49	ND	ND	ND		100	0.17					0.17
			1/3/05	ND	2.04	ND	ND	ND		100	0.17					0.17
			1/10/05	ND	2.2	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	2.55	ND	ND	ND								
			2/14/05	ND	2.52	ND	ND	ND								
			2/28/05	NA	NA	NA	NA	NA								
			3/7/05	NA	NA	NA	NA	NA								
			3/14/05	ND	2.13	ND	ND	ND		100	0.17					0.17
			3/21/05	ND	2.34	ND	ND	ND								
			3/28/05	ND	2.03	ND	ND	ND		100	0.17					0.17
			4/4/05	ND	1.65	ND	ND	ND								
			4/11/05	ND	1.94	ND	ND	ND		20	0.03					0.03
			5/8/05	ND	2.26	ND	ND	ND								
			5/16/05	ND	2.2	ND	ND	ND								
			5/23/05	ND	2.21	ND	ND	ND								
			6/6/05	ND	2.48	ND	ND	ND								
			6/13/05	ND	2.46	ND	ND	ND								
			6/20/05	ND	2.5	ND	ND	ND								
			6/27/05	ND	2.6	ND	ND	ND								
			7/11/05	ND	2.3	ND	ND	ND								
			7/18/05	ND	2.31	ND	ND	ND								
			7/25/05	ND	2.45	ND	ND	ND								
			8/1/05	ND	2.69	ND	ND	ND								
			8/8/05	ND	2.91	ND	ND	ND								
			8/15/05	2.73	2.81	ND	0.08	ND								
			8/22/05	ND	2.71	ND	ND	ND								
			9/19/05	ND	3.7	ND	ND	ND								
			10/3/05	ND	3.75	ND	ND	ND								
			10/17/05	ND	1.9	ND	ND	ND								
			10/31/05	ND	2.12	ND	ND	ND		200						
MW-7Deep	2	22.8	10/22/03	ND	7.51	On tape	ND	Spotty								
			11/14/03	ND	8.62	On tape	ND	1"								
			11/20/03	ND	6.52	On tape	ND	1"								
			11/24/03	ND	7.7	On tape	ND	3"								
			12/1/03	ND	6.21	On tape	ND	1"								
			12/5/03	ND	7.16	On tape	ND	Spotty 1"								
			12/9/03	ND	7.32	On tape	ND	Spotty 1"								
			12/12/03	ND	7.71	On tape	ND	Spotty 1"								
			12/16/03	ND	7.41	On tape	ND	Spotty 1"								
			12/19/03	ND	7.41	On tape	ND	Spotty 1"								
			12/23/03	ND	8.11	On tape	ND	Spotty 1"								
			12/30/03	ND	7.52	On tape	ND	Spotty								
			1/6/04	ND	7.72	On tape	ND	Spotty 1"								
			1/9/04	ND	8.41	On tape	ND	Spotty 1"								
			1/13/04	ND	8.11	On tape	ND	Spotty 1"								
			1/16/04	ND	8.49	On tape	ND	Spotty 1"								
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	**NM - Due to snow and ice cover**												
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	7.34	On tape	ND	Spotty 1"								
			2/13/04	ND	7.58	On tape	ND	Spotty 1"								
			2/17/04	ND	8.1	On tape	ND	Spotty 2"								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	Well Diameter	Well Depth	Date	DTLNAPL	DTW	DTDNPL	LNAPL Thickness	DNAPL Thickness	Bailed	2" x 24" Socks	Absorbent Socks	Pumped	Vac Truck			Total Recovered
	(inches)	(ft bgs)		(feet)	(feet)	(feet)	(feet)	(feet)	(gal)[1]	(% full)	(gal)[2]	(gal)[1]	(total gal)[3]	(% moisture)[4]	(oil gal)[5]	(gal)
			2/20/04	ND	7.91	On tape	ND	Spotty 1"								
			2/24/04	NM - RW-10/11 pump out only												
			2/27/04	ND	7.81	On tape	ND	Spotty								
			3/2/04	ND	7.91	On tape	ND	Spotty								
			3/5/04	ND	8.16	On tape	ND	Spotty								
			3/9/04	ND	7.96	On tape	ND	Spotty								
			3/12/04	ND	7.29	On tape	ND	Spotty								
			3/16/04	ND	8.35	On tape	ND	Spotty								
			3/19/04	ND	8.12	On tape	ND	Spotty								
			4/5/04	ND	8.62	On tape	ND	Spotty								
			4/13/04	ND	7.82	On tape	ND	Spotty								
			4/16/04	ND	8.31	On tape	ND	Spotty								
			4/20/04	ND	8.31	On tape	ND	Spotty								
			4/23/04	ND	7.99	On tape	ND	Spotty								
			4/30/04	ND	8.14	On tape	ND	Spotty								
			5/7/04	ND	8.02	On tape	ND	Spotty								
			5/10/04	ND	7.98	On tape	ND	Spotty								
			5/14/04	ND	8.03	On tape	ND	Spotty								
			5/21/04	ND	8.14	On tape	ND	Spotty								
			6/11/04	ND	7.82	On tape	ND	Spotty								
			6/18/04	ND	7.79	On tape	ND	Spotty								
			6/25/04	NM	NM	NM	NM	NM								
			7/12/04	ND	8.06	On tape	ND	Spotty								
			7/16/04	ND	7.32	On tape	ND	Spotty								
			7/23/04	ND	7.67	On tape	ND	Spotty								
			7/30/04	ND	7.94	On tape	ND	Spotty								
			8/9/04	ND	7.62	On tape	ND	Spotty								
			8/16/04	ND	7.62	On tape	ND	Spotty								
			8/23/04	ND	6.94	On tape	ND	Spotty								
			8/30/04	ND	7.82	On tape	ND	Spotty								
			9/7/04	ND	7.26	On tape	ND	Spotty								
			9/13/04	ND	7.6	On tape	ND	Spotty								
			9/22/04	ND	6.46	On tape	ND	Spotty								
			10/4/04	ND	6.61	On tape	ND	Spotty								
			10/18/04	ND	7.59	On tape	ND	Spotty								
			10/25/04	ND	6.61	On tape	ND	Spotty								
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	7.63	ND	ND	ND								
			11/15/04	ND	7.75	22.3	ND	0.5								
			11/22/04	NM	7.41	ND	NM	ND								
			11/29/04	NM	7.76	On tape	NM	Spotty								
			12/6/04	NM	7.79	On tape	NM	Spotty								
			12/13/04	NM	7.7	On tape	NM	Spotty								
			12/20/04	NM	7.59	On tape	NM	Spotty								
			12/27/04	ND	7.49	On tape	ND	Spotty								
			1/3/05	ND	7.95	ND	ND	ND								
			1/10/05	ND	8.04	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	7.49	On tape	ND	Spotty								
			2/14/05	ND	8.21	On tape	ND	Spotty								
			2/28/05	ND	8.24	ND	ND	ND								
			3/7/05	ND	4.92	ND	ND	ND								
			3/14/05	ND	8.05	ND	ND	ND								
			3/21/05	ND	7.68	22.2	ND	0.6								
			3/28/05	ND	8.72	On tape	ND	Spotty								
			4/4/05	ND	6.85	22.7	ND	0.1								
			4/11/05	ND	10.41	ND	ND	Spotty								
			5/8/05	ND	7.76	On tape	ND	0.5								
			5/16/05	ND	7.34	On tape	ND	0.5		100	0.17					
			5/23/05	ND	7.84	On tape	ND	0.6		15	0.03					
			6/6/05	ND	7.83	On tape	ND	0.5		100	0.17					0.17
			6/13/05	ND	7.65	On tape	ND	0.2		35	0.06					0.06
			6/20/05	ND	7.88	On tape	ND	0.6		100	0.17					0.17
			6/27/05	ND	8	On tape	ND	0.8		100	0.17					0.17
			7/11/05	ND	6.04	22.2	ND	0.6		25	0.04					0.17
			7/18/05	ND	6.98	22.5	ND	0.3								
			7/25/05	ND	7.12	ND	ND	ND								
			8/1/05	ND	7.16	On tape	ND	Spotty								
			8/8/05	ND	7.61	ND	ND	ND								
			8/15/05	ND	5.16	On tape	ND	Spotty		85	0.14					0.17
			8/22/05	ND	7.01	On tape	ND	Spotty								
			9/19/05	ND	6.92	ND	ND	ND								
			10/3/05	ND	7.9	ND	ND	ND								
			10/17/05	ND	7.45	ND	ND	ND								
			10/31/05	ND	7.41	ND	ND	ND								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
MW-7Shallow	2	14	10/22/03	ND	4.32	On tape	ND	Spotty								
			11/14/03	ND	4.49	On tape	ND	Spotty								
			11/20/03	ND	3.39	ND	ND	ND								
			11/24/03	ND	3.6	ND	ND	ND								
			12/1/03	ND	4.51	ND	ND	ND								
			12/5/03	ND	4.79	ND	ND	ND								
			12/9/03	ND	4.69	ND	ND	ND								
			12/12/03	ND	4.22	On tape	ND	Spotty 1"								
			12/16/03	ND	4.26	ND	ND	ND								
			12/19/03	ND	4.34	On tape	ND	Spotty 1"								
			12/23/03	ND	4.31	On tape	ND	Spotty 1"								
			12/30/03	ND	4.74	On tape	ND	Spotty 1"								
			1/6/04	ND	4.36	On tape	ND	Spoty .5"								
			1/9/04	ND	5.08	On tape	ND	Spotty .5"								
			1/13/04	ND	4.84	On tape	ND	Spotty 1"								
			1/16/04	ND	6.41	On tape	ND	Spotty 1"								
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	**NM - Due to snow and ice cover**												
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	4.24	On tape	ND	Spotty 1"								
			2/13/04	ND	4.68	Spotty	ND	Spotty 1"								
			2/17/04	ND	4.83	On tape	ND	Trace								
			2/20/04	ND	4.91	On tape	ND	Spotty 0.5"								
			2/24/04	**NM - RW-10/11 pump out only**												
			2/27/04	ND	4.92	On tape	ND	Spotty 0.5"								
			3/2/04	ND	5.11	On Tape	ND	Spotty								
			3/5/04	ND	4.99	On tape	ND	Spotty								
			3/9/04	ND	4.34	On tape	ND	Spotty								
			3/12/04	ND	4.32	On tape	ND	Spotty								
			3/16/04	ND	4.91	On tape	ND	Spotty								
			3/19/04	ND	4.11	On tape	ND	Spotty								
			4/5/04	ND	4.91	On tape	ND	Spotty								
			4/13/04	ND	3.13	On tape	ND	Spotty								
			4/16/04	ND	4.21	On tape	ND	Spotty								
			4/20/04	ND	4.52	On tape	ND	Spotty								
			4/23/04	ND	4.89	On tape	ND	Spotty								
			4/30/04	ND	4.49	On tape	ND	Spotty								
			5/7/04	ND	4.61	On tape	ND	Spotty								
			5/10/04	ND	4.59	On tape	ND	Spotty								
			5/14/04	ND	4.41	On tape	ND	Spotty								
			5/21/04	ND	4.62	On tape	ND	Spotty								
			6/11/04	ND	4.82	On tape	ND	Spotty								
			6/18/04	ND	4.21	On tape	ND	Spotty								
			6/25/04	NM	NM	NM	NM	NM								
			7/12/04	ND	4.52	On tape	ND	Spotty								
			7/16/04	ND	4.29	On tape	ND	Spotty								
			7/23/04	ND	4.49	On tape	ND	Spotty								
			7/30/04	ND	3.91	On tape	ND	Spotty								
			8/9/04	ND	4.31	On tape	ND	Spotty								
			8/16/04	ND	4.21	On tape	ND	Spotty								
			8/23/04	ND	4.41	ND	ND	ND								
			8/30/04	ND	4.46	On tape	ND	Spotty								
			9/7/04	ND	4.49	ND	ND	ND								
			9/13/04	ND	4.5	ND	ND	ND								
			9/22/04	ND	4.31	ND	ND	ND								
			10/4/04	ND	4.32	ND	ND	Spotty								
			10/18/04	ND	4.79	On tape	ND	Spotty								
			10/25/04	ND	4.21	On tape	ND	Spotty								
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	4.57	ND	ND	ND								
			11/15/04	ND	4.53	ND	ND	ND								
			11/22/04	NM	4.29	ND	NM	ND								
			11/29/04	NM	4.21	ND	NM	ND								
			12/6/04	NM	4.58	ND	NM	ND								
			12/13/04	NM	4.1	ND	NM	ND								
			12/20/04	NM	4.41	On tape	NM	Spotty								
			12/27/04	ND	4.51	On tape	ND	Spotty								
			1/3/05	ND	4.94	ND	ND	ND								
			1/10/05	ND	3.91	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	**Well Diameter** (inches)	**Well Depth** (ft bgs)	**Date**	**DTLNAPL** (feet)	**DTW** (feet)	**DTDNPL** (feet)	**LNAPL Thickness** (feet)	**DNAPL Thickness** (feet)	**Bailed** (gal)[1]	**2" x 24" Socks** (% full)	**Absorbent Socks** (gal)[2]	**Pumped** (gal)[1]	**Vac Truck** (total gal)[3]	(% moisture)[4]	(oil gal)[5]	**Total Recovered** (gal)
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	3.81	ND	ND	ND								
			2/14/05	ND	4.83	ND	ND	ND								
			2/28/05	ND	4.63	ND	ND	ND								
			3/7/05	ND	4.46	ND	ND	ND								
			3/14/05	ND	4.36	ND	ND	ND								
			3/21/05	ND	4.76	10.4	ND	0.3								
			3/28/05	ND	8.72	On tape	ND	Spotty								
			4/4/05	ND	4.23	ND	ND	ND								
			4/11/05	ND	4.22	ND	ND	Spotty								
			5/8/05	ND	4.34	ND	ND	ND								
			5/16/05	ND	4.73	ND	ND	ND								
			5/23/05	ND	4.46	ND	ND	ND								
			6/6/05	ND	4.34	On tape	ND	0.2		100	0.17					0.17
			6/13/05	ND	4.58	On tape	ND	0.05		50	0.08					0.09
			6/20/05	ND	4.56	ND	ND	ND								
			6/27/05	ND	4.25	ND	ND	ND								
			7/11/05	ND	4.18	10.4	ND	0.3								
			7/18/05	ND	4.39	On tape	ND	Spotty								
			7/25/05	ND	4.35	ND	ND	ND								
			8/1/05	ND	4.72	ND	ND	Spotty								
			8/8/05	ND	5.33	ND	ND	ND								
			8/15/05	ND	4.21	On tape	ND	Spotty								
			8/22/05	ND	4.41	On tape	ND	Spotty								
			9/19/05	ND	4.85	ND	ND	ND								
			10/3/05	ND	5.45	ND	ND	ND								
			10/17/05	ND	4.65	ND	ND	ND								
			10/31/05	ND	4.96	ND	ND	ND								
MW-14	2	17	5/27/03	6.74	6.74	ND	ND	ND								
			6/6/03	ND	6.55	ND	ND	ND								
			6/13/03	ND	6.53	ND	ND	ND								
			6/23/03	ND	6.42	Trace	ND	Trace								
			6/30/03	Sheen	6.64	Trace	Sheen	Trace								
			7/8/03	ND	6.75	Trace	ND	Trace								
			7/16/03	NM	7.8	Trace	NM	Trace		50	0.08					0.08
			7/22/03	6.84	6.9	Trace	0.06	Trace		66	0.11					0.11
			7/29/03	ND	7.01	Trace	ND	Trace		100	0.17					0.17
			8/6/03	ND	6.99	On probe	ND	4"		75	0.13					0.13
			8/13/03	ND	7.02	On probe	ND	1"		60	0.10					0.10
			8/20/03	ND	6.95	On probe	ND	4"		80	0.13					0.13
			8/28/03	ND	7.07	On tape	ND	1"		90	0.15					0.15
			9/5/03	ND	7.01	On tape	ND	1"		100	0.17					0.17
			9/12/03	ND	7.1	On tape	ND	1"								
			9/25/03	ND	7.05	On tape	ND	6"		100	0.17					0.17
			10/1/03	ND	6.98	On tape	ND	2"								
			10/7/03	Sheen	7.1	On tape	Sheen	2"								
			10/16/03	Sheen	7.1	On tape	Sheen	2"								
			10/22/03	ND	7.24	On tape	ND	Spotty		60	0.10					0.10
			11/14/03	ND	7.39	On tape	ND	Spotty		100	0.17					0.17
			11/20/03	ND	7.34	On tape	ND	Spotty								
			11/24/03	ND	10.08	On tape	ND	0.5								
			12/1/03	ND	7.42	On tape	ND	1"								
			12/5/03	ND	7.49	On tape	ND	Spotty 1"		85	0.14					0.14
			12/9/03	ND	7.55	On tape	ND	Spotty 1"								
			12/12/03	ND	7.14	On tape	ND	Spotty 1"		100	0.17					0.17
			12/16/03	ND	7.14	On tape	ND	Spotty 1"								
			12/19/03	ND	7.03	On tape	ND	Spotty 1"								
			12/23/03	ND	7.04	ND	ND	Spotty 1"								
			12/30/03	ND	7.04	ND	ND	ND								
			1/6/04	ND	7.11	ND	ND	Spotty 1"								
			1/9/04	ND	7.31	ND	ND	Spotty 1"								
			1/13/04	ND	7.14	ND	ND	Spotty 1"								
			1/16/04	ND	7.18	ND	ND	Spotty 1"		100	0.17					0.17
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	ND	7.44	On Tape	ND	1"		90	0.15					0.15
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	4.28	On tape	ND	1"								
			2/13/04	ND	6.89	On tape	ND	Spotty 1"								
			2/17/04	ND	6.85	On tape	ND	Trace								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	Product Recovery: 2" x 24" Socks (% full)	Product Recovery: Absorbent Socks (gal)[2]	Product Recovery: Pumped (gal)[1]	Product Recovery: Vac Truck (total gal)[3]	Product Recovery: Vac Truck (% moisture)[4]	Product Recovery: Vac Truck (oil gal)[5]	Product Recovery: Total Recovered (gal)
			2/20/04	ND	6.74	On tape	ND	Trace								
			2/24/04	NM - RW-10/11 pump out only												
			2/27/04	ND	6.69	On tape	ND	Spotty								
			3/2/04	ND	6.43	On tape	ND	Spotty		100	0.17					0.17
			3/5/04	ND	6.45	On tape	ND	Spotty		60	0.10					0.10
			3/9/04	ND	6.41	On tape	ND	Spotty								
			3/12/04	ND	6.37	On tape	ND	Spotty								
			3/16/04	ND	6.67	ND	ND	ND								
			3/19/04	ND	6.31	On tape	ND	Spotty								
			4/5/04	ND	6.39	On tape	ND	Spotty								
			4/13/04	ND	6.56	On tape	ND	Spotty								
			4/16/04	ND	6.64	On tape	ND	Spotty								
			4/20/04	ND	6.61	On tape	ND	Spotty								
			4/23/04	ND	6.61	On tape	ND	Spotty								
			4/30/04	ND	6.61	On tape	ND	Spotty								
			5/7/04	ND	6.65	On tape	ND	Spotty								
			5/10/04	ND	6.81	On tape	ND	Spotty								
			5/14/04	ND	6.78	On tape	ND	Spottu								
			5/21/04	ND	6.69	On tape	ND	Spotty								
			6/11/04	ND	6.81	On tape	ND	Spotty		100	0.17					0.17
			6/18/04	ND	7.86	On tape	ND	Spotty								
			6/25/04	ND	6.97	On tape	ND	6"								
			7/12/04	ND	6.98	16.9	ND	1"		100	0.17					0.17
			7/16/04	ND	6.81	On tape	ND	Spotty								
			7/23/04	ND	6.92	ND	ND	ND								
			7/30/04	ND	6.86	On tape	ND	Spotty								
			8/9/04	ND	6.91	16.9	ND	1"								
			8/16/04	ND	6.82	On tape	ND	Spotty								
			8/23/04	ND	7.04	On tape	ND	Spotty								
			8/30/04	ND	7.11	ND	ND	ND								
			9/7/04	ND	7.14	ND	ND	ND								
			9/22/04	ND	7.11	ND	ND	ND								
			10/4/04	ND	6.99	On tape	ND	Spotty								
			10/18/04	ND	7.29	On tape	ND	Spotty		100	0.17					0.17
			10/25/04	ND	7.31	On tape	ND	Spotty		100	0.17					0.17
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	7.41	On tape	ND	Spotty								
			11/15/04	ND	7.34	ND	ND	ND								
			11/22/04	NM	NM	ND	NM	ND		100	0.17					0.17
			11/29/04	NM	NM	ND	NM	ND		100	0.17					0.17
			12/6/04	NM	NM	ND	NM	ND								
			12/13/04	NM	NM	ND	NM	ND								
			12/20/04	NM	NM	ND	NM	ND		100	0.17					0.17
			12/27/04	NM	NM	NM	NM	NM								
			1/3/05	ND	7.21	On tape	ND	Spotty								
			1/10/05	ND	7.05	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	NA	NA	NA	NA	NA								
			2/14/05	NA	NA	NA	NA	NA								
			2/28/05	ND	6.25	ND	ND	ND		50	0.08					0.08
			3/7/05	ND	6.31	ND	ND	ND								
			3/14/05	ND	6.32	ND	ND	ND								
			3/21/05	ND	6.45	16.9	ND	0.1								
			3/28/05	ND	5.99	On tape	ND	Spotty		100	0.17					0.17
			4/4/05	ND	5.96	ND	ND	ND								
			4/11/05	ND	6.21	ND	ND	ND		15	0.03					0.03
			5/8/05	ND	6.55	ND	ND	ND								
			5/16/05	ND	6.66	On tape	ND	0.3								
			5/23/05	ND	6.66	ND	ND	ND								
			6/6/05	ND	8.63	On tape	ND	0.3		100	0.17					0.17
			6/13/05	ND	7.83	On tape	ND	0.2		50	0.08					0.09
			6/20/05	ND	6.97	On tape	ND	0.04		100	0.17					0.17
			6/27/05	ND	7.66	On tape	ND	0.05								
			7/11/05	ND	6.79	16.8	ND	0.2		100	0.17					0.17
			7/18/05	ND	6.96	On tape	ND	Spotty		100	0.17					0.17
			7/25/05	ND	6.95	ND	ND	ND								
			8/1/05	ND	7.09	ND	ND	Spotty								
			8/8/05	ND	7.12	ND	ND	ND								
			8/15/05	ND	7.12	On tape	ND	Spotty								
			8/22/05	ND	7.15	On tape	ND	Spotty								
			9/19/05	ND	8.2	On tape	ND	1.47								
			10/3/05	ND	7.77	ND	ND	ND								
			10/17/05	ND	7.81	ND	ND	ND								
			10/31/05	ND	6.82	ND	ND	ND								

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WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
MW-16	2	31.5	9/30/03	ND	9.52	31	ND	5"								
			10/22/03	ND	8.41	ND	ND	ND								
			11/14/03	ND	11.18	ND	ND	ND								
			11/24/03	ND	6.06	ND	ND	ND								
			12/1/03	ND	8.04	ND	ND	ND								
			12/5/03	ND	6.64	ND	ND	ND								
			12/9/03	ND	6.69	ND	ND	ND								
			12/12/03	ND	10.39	ND	ND	Spotty								
			12/16/03	ND	9.49	ND	ND	Spotty								
			12/19/03	ND	6.72	30.6	ND	9"								
			12/23/03	ND	7.14	ND	ND	ND								
			12/30/03	ND	7.54	ND	ND	ND								
			1/6/04	ND	7.54	ND	ND	ND								
			1/9/04	ND	9.41	ND	ND	ND								
			1/13/04	ND	9.58	ND	ND	ND								
			1/16/04	ND	8.81	ND	ND	ND								
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	**NM - Due to snow and ice cover**												
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	8.21	NM	ND	NM								
			2/13/04	**NM - Ice in well**												
			2/17/04	**NM - Ice in well**												
			2/20/04	**NM - Ice in well**												
			2/24/04	**NM - RW-10/11 pump out only**												
			2/27/04	ND	9.51	ND	ND	ND								
			3/2/04	ND	6.98	ND	ND	ND								
			3/5/04	ND	6.91	ND	ND	ND								
			3/9/04	ND	9.59	ND	ND	ND								
			3/12/04	ND	9.52	ND	ND	ND								
			3/16/04	ND	7.04	ND	ND	ND								
			3/19/04	ND	6.67	ND	ND	ND								
			4/5/04	ND	10.16	ND	ND	ND								
			4/13/04	ND	6.5	ND	ND	ND								
			4/16/04	ND	7.44	ND	ND	ND								
			4/20/04	ND	10.51	ND	ND	ND								
			4/23/04	ND	9.99	ND	ND	ND								
			4/30/04	ND	7.11	ND	ND	ND								
			5/7/04	ND	10.81	ND	ND	ND								
			5/10/04	ND	9.41	ND	ND	ND								
			5/14/04	ND	7.06	ND	ND	ND								
			5/21/04	ND	10.34	ND	ND	ND								
			6/11/04	ND	6.64	6.63	ND	0.01								
			6/8/04	ND	9.54	ND	ND	ND								
			6/25/04	NM	NM	NM	NM	NM								
			7/12/04	ND	7.11	ND	ND	ND								
			7/16/04	ND	8.59	ND	ND	ND								
			7/23/04	ND	8.95	ND	ND	ND								
			7/30/04	ND	7.56	ND	ND	ND								
			8/9/04	ND	7.06	ND	ND	ND								
			8/16/04	ND	10.04	ND	ND	ND								
			8/23/04	ND	8.49	ND	ND	ND								
			8/30/04	ND	10.12	ND	ND	ND								
			9/7/04	ND	7.42	ND	ND	ND								
			9/13/04	ND	7.45	ND	ND	ND								
			9/22/04	ND	6.98	ND	ND	ND								
			10/4/04	ND	8.59	ND	ND	ND								
			10/18/04	ND	10.09	ND	ND	ND								
			10/25/04	ND	6.14	ND	ND	ND								
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	6.88	ND	ND	ND								
			11/15/04	ND	9.82	ND	ND	ND								
			11/22/04	NM	NM	ND	NM	NM								
			11/29/04	NM	NM	ND	ND	ND								
			12/6/04	NM	NM	ND	NM	ND								
			12/13/04	NM	NM	ND	NM	ND								
			12/20/04	NM	NM	ND	NM	ND								
			12/27/04	NM	NM	NM	NM	NM								
			1/3/05	ND	8.84	ND	ND	ND								
			1/10/05	ND	6.81	ND	ND	ND								
			1/24/05	NA	NA	NA	NA	NA								

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PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	6.65	ND	ND	ND								
			2/14/05	ND	9.63	ND	ND	ND								
			2/28/05	ND	10.24	ND	ND	ND								
			3/7/05	ND	6.51	ND	ND	ND								
			3/14/05	ND	10.44	ND	ND	ND								
			3/21/05	ND	6.69	ND	ND	ND								
			3/28/05	ND	9.59	ND	ND	ND								
			4/4/05	ND	6.18	ND	ND	ND								
			4/11/05	ND	9.99	ND	ND	ND								
			5/8/05	ND	9.01	ND	ND	ND								
			5/16/05	ND	5.6	ND	ND	ND								
			5/23/05	ND	7.44	ND	ND	ND								
			6/6/05	ND	7.78	ND	ND	ND								
			6/13/05	ND	8.73	ND	ND	ND								
			6/20/05	ND	6.57	ND	ND	ND								
			6/27/05	ND	7.68	ND	ND	ND		10	0.02					0.02
			7/11/05	ND	8.94	ND	ND	ND								
			7/18/05	ND	6.59	ND	ND	ND								
			7/25/05	ND	9.83	ND	ND	ND								
			8/1/05	ND	7.97	ND	ND	ND								
			8/8/05	ND	9.86	ND	ND	ND								
			8/15/05	ND	6.79	ND	ND	ND								
			8/22/05	ND	6.98	ND	ND	ND								
			9/19/05	ND	10.58	ND	ND	ND								
			10/3/05	ND	10.78	ND	ND	ND								
			10/17/05	ND	10.3	ND	ND	ND								
			10/31/05	ND	6.29	ND	ND	ND								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
MW-17	2	31.7	9/30/03	ND	9.91	28	ND	3.7								
			10/22/03	ND	7.31	ND	ND	ND								
			11/14/03	ND	12.21	ND	ND	ND								
			11/20/03	ND	7.19	ND	ND	ND								
			11/24/03	ND	7.24	On tape	ND	5.5'								
			12/1/03	ND	8.68	25.22	ND	6.22								
			12/5/03	ND	7.69	36	ND	5.71		100	0.17					0.17
			12/9/03	ND	8.01	25.88	ND	5.82		100	0.17					0.17
			12/12/03	ND	11.38	35.98	ND	5.44		100	0.17					0.17
			12/16/03	NM	NM	NM	NM	NM								
			12/19/03	ND	8.06	25.98	ND	5.72		100	0.17					0.17
			12/23/03	ND	8.58	25.91	ND	5.79		100	0.17					0.17
			12/30/03	ND	8.11	26.72	ND	4.98								
			1/6/04	ND	9.29	26.32	ND	5.38		100	0.17					0.17
			1/9/04	ND	9.74	25.81	ND	5.89		80	0.13					0.13
			1/13/04	ND	10.37	26.28	ND	5.42		95	0.16					0.16
			1/16/04	ND	9.19	25.29	ND	6.41		100	0.17					0.17
			1/20/04	**NM - Due to snow and ice cover**												
			1/23/04	**NM - Due to snow and ice cover**												
			1/27/04	**NM - Due to snow and ice cover**												
MW-18	2	26.7	9/30/03	ND	12.45	ND	ND	ND								
			1/30/04	**NM - Due to snow and ice cover**												
			2/3/04	**NM - Due to snow and ice cover**												
			2/6/04	**NM - Due to snow and ice cover**												
			2/10/04	ND	10.07	27.41	ND	4.29		100	0.17					0.17
			2/13/04	ND	10.85	28.25	ND	3.45		100	0.17					0.17
			2/17/04	ND	7.9	On tape	ND	2.5								
			2/20/04	ND	10.39	27.79	ND	3.91		100	0.17					0.17
			2/24/04	**NM - RW-10/11 pump out only**												
			2/27/04	ND	9.41	26.58	ND	5.12		100	0.17					0.17
			3/2/04	ND	7.94	28.09	ND	3.61		100	0.17					0.17
			3/5/04	ND	7.89	28.11	ND	3.59		100	0.17					0.17
			3/9/04	ND	10.91	27.35	ND	4.35		100	0.17					0.17
			3/12/04	ND	10.03	27.41	ND	4.29		100	0.17					0.17
			3/16/04	ND	8.09	26.88	ND	4.82		100	0.17					0.17
			3/19/04	ND	7.91	28.08	ND	3.62								
			4/5/04	ND	11.64	28.86	ND	2.84		100	0.17					0.17
			4/13/04	ND	7.41	28.38	ND	3.32		100	0.17					0.17
			4/16/04	ND	8.91	27.98	ND	3.72		100	0.17					0.17
			4/20/04	ND	11.74	27.39	ND	4.31		100	0.17					0.17
			4/23/04	ND	10.62	28.09	ND	3.61		100	0.17					0.17
			4/30/04	ND	8.11	27.81	ND	3.89		100	0.17					0.17
			5/7/04	ND	11.21	28.18	ND	3.52		100	0.17					0.17
			5/10/04	ND	9.91	28.29	ND	3.41		100	0.17					0.17
			5/14/04	ND	8.81	28.08	ND	3.62		100	0.17					0.17
			5/21/04	ND	11.26	20.49	ND	11.21(3.64)		100	0.17					0.17
			6/11/04	ND	7.61	28.81	ND	2.89		100	0.17					0.17
			6/18/04	ND	10.73	29.21	ND	2.49		100	0.17					0.17
			6/25/04	ND	9.67	On tape	ND	4.5		100	0.17					0.17
			7/12/04	ND	8.16	27.79	ND	3.91		100	0.17					0.17
			7/16/04	ND	10.01	26.89	ND	4.81		100	0.17					0.17
			7/23/04	ND	9.51	27.98	ND	3.72		100	0.17					0.17
			7/30/04	ND	9.81	28.29	ND	3.41		100	0.17					0.17
			8/9/04	ND	7.24	20.11	ND	11.59		100	0.17					0.17
			8/16/04	ND	10.98	26.5	ND	5.2		100	0.17					0.17
			8/23/04	ND	9.01	28.78	ND	2.92		100	0.17					0.17
			8/30/04	ND	11.34	26.77	ND	4.93		100	0.17					0.17
			9/7/04	ND	8.09	28.59	ND	3.11		100	0.17					0.17
			9/13/04	ND	8.1	27.1	ND	6								
			9/22/04	ND	7.56	28.45	ND	3.25		100	0.17					0.17
			10/4/04	ND	9.21	28.18	ND	3.52		100	0.17					0.17
			10/18/04	ND	10.91	28.48	ND	3.22		100	0.17					0.17
			10/25/04	ND	6.41	28.09	ND	3.61		100	0.17					0.17
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	7.8	28.1	ND	3.6		100	0.17					0.17
			11/15/04	ND	11.05	28.7	ND	3		100	0.17					0.17
			11/22/04	NM	NM	28.38	NM	3.32		100	0.17					0.17
			11/29/04	NM	NM	28.09	NM	3.61		100	0.17					0.17
			12/6/04	NM	NM	27.71	NM	3.99		100	0.17					0.17
			12/13/04	NM	NM	27.5	NM	4.2		100	0.17					0.17
			12/20/04	NM	NM	27.72	NM	3.98		100	0.17					0.17
			12/27/04	NM	NM	NM	NM	NM								
			1/3/05	ND	9.42	27.86	ND	3.84		100	0.17					0.17
			1/10/05	ND	7.84	27.9	ND	3.83		100	0.17					0.17
			1/24/05	NA	NA	NA	NA	NA								

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	7.42	27.42	ND	4.17		100	0.17					0.17
			2/14/05	ND	10.48	26.91	ND	4.64								
			2/28/05	ND	11.25	28.12	ND	3.58								
			3/7/05	ND	7.41	27.08	ND	3.82		100	0.17					0.17
			3/14/05	ND	11.25	27.8	ND	3.9		60	0.10					0.10
			3/21/05	ND	7.64	27.9	ND	3.8								
			3/28/05	ND	10.39	28.44	ND	3.26		100	0.17					0.17
			4/4/05	ND	7.05	28.8	ND	2.9								
			4/11/05	ND	10.41	28.29	ND	3.41		100	0.17					0.17
			5/8/05	ND	10.73	28	ND	3.7								
			5/16/05	ND	7.31	28.3	ND	3.4		100	0.17					0.17
			5/23/05	ND	9.98	28.1	ND	3.6		90	0.15					0.15
			6/6/05	ND	10.15	28.5	ND	3.2		100	0.17					0.17
			6/13/05	ND	8.14	27.4	ND	4.3		100	0.17					0.17
			6/20/05	ND	7.83	28.6	ND	3.1		100	0.17					0.17
			6/27/05	ND	8.67	27.9	ND	3.8		100	0.17					0.17
			7/11/05	ND	9.94	28.4	ND	3.3		100	0.17					0.17
			7/18/05	ND	7.78	27.78	ND	3.92		100	0.17					0.17
			7/25/05	ND	10.68	26.15	ND	5.55		100	0.17					0.17
			8/1/05	ND	9.98	27.13	ND	4.57		100	0.17					0.17
			8/8/05	ND	6.32	27.65	ND	4.05		100	0.17					0.17
			8/15/05	ND	7.92	27.44	ND	4.26		100	0.17					0.17
			8/22/05	ND	10.81	27.19	ND	4.51		100	0.17					0.17
			9/19/05	ND	NM	22.85	ND	8.85		100	0.17					0.17
			10/3/05	ND	11.34	27.85	ND	3.85		100	0.17					0.17
			10/17/05	ND	11.34	26.45	ND	5.25		100	0.17					0.17
			10/31/05	ND	7.75	26.98	ND	4.72		100	0.17					0.17
B-102W(Shallow)	2	17.5	5/27/03	ND	7.06	15	ND	2.5								
			5/28/03	ND	6.98	14.82	ND	2.68	3.0							3.00
			6/4/03	ND	7.01	12.31	ND	5.19				3				3.00
			6/13/03	ND	6.81	14.25	ND	3.25								
			6/16/03	ND	6.86	17.17	ND	0.33	4.50							4.50
			6/23/03	ND	6.79	17.05	ND	0.45				10				10.00
			6/30/03	NM	6.89	Trace	NM	Trace								
			7/8/03	ND	6.95	Trace	ND	Trace								
			7/16/03	NM	7.2	Trace	NM	Trace								
			7/22/03	ND	7.16	17.45	ND	0.05		30	0.05					0.05
			7/29/03	ND	7.27	Trace	ND	Trace		30	0.05					0.05
			8/6/03	ND	7.25	On probe	ND	7"		70	0.12					0.12
			8/13/03	ND	7.21	17	ND	0.5		30	0.05					0.05
			8/20/03	ND	7.15	16.95	ND	0.55		80	0.13					0.13
			8/28/03	ND	7.29	On tape	ND	5		80	0.13					0.13
			9/5/03	ND	7.31	NM	ND	NM		100	0.17					0.17
			9/12/03	ND	7.38	On tape	ND	3		100	0.17					0.17
			9/25/03	Sheen	7.25	On tape	Sheen	1.5		100	0.17					0.17
			10/1/03	ND	7.25	On tape	ND	2"		100	0.17					0.17
			10/7/03	ND	7.5	On tape	ND	2"								
			10/16/03	ND	7.5	On tape	ND	2"								
			10/22/03	ND	7.94	16	ND	1.5								
			11/14/03	ND	7.54	On tape	ND	2"								
			11/20/03	ND	7.79	On tape	ND	2'								
			11/24/03	ND	7.5	On tape	ND	2.5								
			12/1/03	ND	7.59	16.3		1'2"								
			12/5/03	ND	7.65	15	ND	2.5		100	0.17					0.17
			12/9/03	ND	7.74	15.38	ND	2.12		40	0.07					0.07
			12/12/03	ND	7.49	15.1	ND	2.49		100	0.17					0.17
			12/16/03	ND	7.34	15.7	ND	1.98								
			12/19/03	ND	7.18	15.38	ND	2.12								
			12/23/03	ND	7.21	14.56	ND	2.94		100	0.17					0.17
			12/30/03	ND	7.14	14.78	ND	2.72		100	0.17					0.17
			1/6/04	ND	7.34	14.38	ND	3.12		65	0.11					0.11
			1/9/04	ND	7.51	14.58	ND	2.92		75	0.13					0.13
			1/13/04	ND	7.31	14.26	ND	3.24		100	0.17					0.17
			1/16/04		**NM - Due to snow and ice cover**											
			1/20/04		**NM - Due to snow and ice cover**											
			1/23/04		**NM - Due to snow and ice cover**											
			1/27/04		**NM - Due to snow and ice cover**											
			1/30/04		**NM - Due to snow and ice cover**											
			2/3/04		**NM - Due to snow and ice cover**											
			2/6/04		**NM - Due to snow and ice cover**											
			2/10/04	ND	7.24	15.01	ND	2.49		100	0.17					0.17

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Product Recovery: Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			2/13/04	ND	7.21	15.79	ND	1.71								
			2/17/04	ND	7.2	On tape	ND	2.2								
			2/20/04	ND	7	14.69	ND	2.81		100	0.17					0.17
			2/24/04	NM - RW-10/11 pump out only												
			2/27/04	ND	6.99	16.09	ND	1.41								
			3/2/04	ND	6.91	16.5	ND	1		100	0.17					0.17
			3/5/04	ND	6.84	16.05	ND	1.45		100	0.17					0.17
			3/9/04	ND	6.78	15.51	ND	1.99								
			3/12/04	ND	6.65	16.55	ND	0.95		100	0.17					0.17
			3/16/04	ND	6.82	15.19	ND	2.31		100	0.17					0.17
			3/19/04	ND	6.64	16.7	ND	0.8		100	0.17					0.17
			4/5/04	ND	6.64	16.65	ND	0.85		100	0.17					0.17
			4/13/04	ND	6.81	16.68	ND	0.82		100	0.17					0.17
			4/16/04	ND	6.89	16.87	ND	0.63								
			4/20/04	ND	6.72	17.3	ND	0.2		100	0.17					0.17
			4/23/04	ND	6.81	16.39	ND	1.11		100	0.17					0.17
			4/30/04	ND	6.72	17.4	ND	0.1		100	0.17					0.17
			5/7/04	ND	6.81	16.7	ND	0.8		100	0.17					0.17
			5/10/04	ND	6.89	16.61	ND	0.89		100	0.17					0.17
			5/14/04	ND	6.96	16.71	ND	0.79		100	0.17					0.17
			5/21/04	ND	6.86	16.71	ND	0.79		100	0.17					0.17
			6/11/04	ND	7.02	16.61	ND	0.89								
			6/18/04	ND	7.09	16.69	ND	0.81		100	0.17					0.17
			6/25/04	ND	7.1	On tape	ND	0.92		100	0.17					0.17
			7/12/04	ND	7.19	On Tape	ND	ND								
			7/16/04	ND	6.94	16.78	ND	0.72		100	0.17					0.17
			7/23/04	ND	7.09	16.79	ND	0.71								
			7/30/04	ND	6.94	16.69	ND	0.81								
			8/9/04	ND	7.02	16.58	ND	0.92		100	0.17					0.17
			8/16/04	ND	7.12	16.61	ND	0.89								
			8/23/04	ND	7.14	16.8	ND	0.7		100	0.17					0.17
			8/30/04	ND	7.26	15.99	ND	1.51								
			9/7/04	ND	7.32	15.88	ND	1.64		100	0.17					0.17
			9/13/04	ND	7.24	15.95	ND	2.6								
			9/22/04	ND	7.22	16.05	ND	1.45								
			10/4/04	ND	7.09	14.59	ND	2.91		100	0.17					0.17
			10/18/04	ND	7.54	14.86	ND	2.64								
			10/25/04	ND	7.42	15.39	ND	2.11		100	0.17					0.17
			11/1/04	NM	NM	NM	NM	NM								
			11/8/04	ND	7.66	29.1	ND	2.7								
			11/15/04	ND	7.65	15	ND	2.5								
			11/22/04	NM	NM	14.6	NM	2.99								
			11/29/04	NM	NM	14.28	NM	3.22		100	0.17					0.17
			12/6/04	NM	NM	15.09	NM	2.41								
			12/13/04	NM	NM	14.8	NM	2.7								
			12/20/04	NM	NM	14.81	NM	2.69		100	0.17					0.17
			12/27/04	NM	NM	NM	NM	NM								
			1/3/05	ND	7.46	14.51	ND	2.99								
			1/10/05	ND	7.21	15.2	ND	2.3		100	0.17					0.17
			1/24/05	NA	NA	NA	NA	NA								
			1/31/05	NA	NA	NA	NA	NA								
			2/7/05	ND	7.1	15.42	ND	2		50	0.08					0.08
			2/14/05	ND	6.86	15.25	ND	2.17								
			2/28/05	ND	6.46	16.25	ND	1.25		50	0.08					0.08
			3/7/05	ND	6.52	16.52	ND	0.98								
			3/14/05	ND	6.53	15.9	ND	1.6								
			3/21/05	ND	6.66	15.6	ND	1.9								
			3/28/05	ND	6.21	15.89	ND	1.61								
			4/4/05	ND	6.29	16.7	ND	0.8								
			4/11/05	ND	6.46	16.89	ND	0.61		55	0.09					0.09
			5/8/05	ND	6.84	15.45	ND	2.05								
			5/16/05	ND	6.94	16.9	ND	0.6		100	0.17					0.17
			5/23/05	ND	6.97	15.8	ND	1.7		60	0.10					0.10
			6/6/05	ND	7.14	16.3	ND	1.2		100	0.17					0.17
			6/13/05	ND	7.12	16.1	ND	1.4		100	0.17					0.17
			6/20/05	ND	7.18	16.7	ND	0.8		100	0.17					0.17
			6/27/05	ND	7.22	16.6	ND	0.9		10	0.02					0.02
			7/11/05	ND	7.04	16.25	ND	1.25		100	0.17					0.17
			7/18/05	ND	7.02	16	ND	1		100	0.17					0.17
			7/25/05	ND	6.74	16.69	ND	0.81								
			8/1/05	ND	7.29	16.58	ND	4.57								
			8/8/05	ND	7.39	ND	ND	ND		80	0.13					0.13
			8/15/05	ND	7.62	16.44	ND	1.06								
			8/22/05	ND	7.21	16.34	ND	1.16								
			9/19/05	ND	8.42	16.27	ND	1.23		85	0.14					0.14

TABLE 1
WEEKLY RECOVERY WELL GAUGING AND NAPL REMOVAL
PELHAM PLAZA, PELHAM MANOR, NEW YORK

									Product Recovery							
Well ID	Well Diameter (inches)	Well Depth (ft bgs)	Date	DTLNAPL (feet)	DTW (feet)	DTDNPL (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Bailed (gal)[1]	2" x 24" Socks (% full)	Absorbent Socks (gal)[2]	Pumped (gal)[1]	Vac Truck (total gal)[3]	Vac Truck (% moisture)[4]	Vac Truck (oil gal)[5]	Total Recovered (gal)
			10/3/05	ND	8	16.27	ND	1.23		80	0.13					0.13
			10/17/05	ND	8.2	16.2	ND	1.3								
			10/31/05	ND	7.08	15.78	ND	1.72								
									Total Recovered (gal)							133,667.31

Notes:

NA	Not accessible due to snow and ice cover (due to truck parked on top of RW-6 on 1/3/05)
ND	Not detected
DTLNAPL	Depth to floating product measured from top of PVC well casing
DTW	Depth to water measured from top of PVC well casing
DTDNAPL	Depth to dense product measured from top of PVC well casing
LNAPL Thickness	Separate phase product thickness = DTW - DTLNAPL
DNAPL Thickness	Separate phase product thickness = Total Depth-DTDNAPL
ft bgs	feet below ground surface

NM **Not Measured**

[1]**Recovery volumes have been determined based on estimated percentage of NAPL mixture contained in NAPL/water mixture.**

[2] **gallons = (%full/100)* 0.25 * 2/3**

[3] **total gallons = volume of oil water mixture recovered as measured in vacuum truck**

[4] **% moisture in sample collected from vacuum truck piping during sample recovery - yellow highlighting indicates estimated value.**

[5]**oil gallons = total gallons x [1-(%moisture/100)]**

*** measurement believed to be incorrect**

Pelham Plaza
Recovered DNAPL Flash Point Summary

Date	Sample Location	Comments	Quantity (gal)	Sample ID#	Reported Result (^oF)	*CycleChem DATA*	
12/3/2003	RW-6,9,10,11		*306*			*Yes, 2/3/04*	Red/Italic - Info from CycleChem
12/12/2003	RW-6,9,10,11		*1278*			*Yes, 2/3/04*	
12/16/2003	RW-6,9,10,11		*1712*			*Yes, 2/3/04*	
12/22/2003	RW-6,9,10,11		*1785*			*Yes, 2/3/04*	
1/7/2004	RW-6,9,10,11		*1314*			*Yes, 2/3/04*	
1/13/2004	RW-6,9,10,11		*829*			*Yes, 2/3/04*	
1/20/2004	RW-6,9,10,11		*1032*			*Yes, 2/5/04*	
1/21/2004	RW-6,9,10,11		*423*			*Yes, 2/5/04*	
1/23/2004	RW-10			205735-1	>200		
1/23/2004	RW-11		*505*	205735-2	>200	*Yes, 2/5/04*	
1/27/2004	RW-6,9,10,11		*1480*			*Yes, 2/12/04*	
1/30/2004	RW-10	Back of Truck	*1183*	205772-1	>200	*Yes, 2/12/04*	
1/30/2004	RW-11	Back of Truck		205772-2	>200		
1/30/2004	RW-10	Manway		205772-3	>200		
1/30/2004	RW-11	Manway		305772-4	>200		
2/6/2004	RW-10			205805-1	>200		
2/6/2004	RW-11			205805-2	>200		
2/10/2004	RW-10	Manway		205831-1	>200		
2/13/2004	RW-6,9,10,11	Manway		205862-1	>200		
2/17/2004	RW-10			205889-1	>200		
2/20/2004	RW-6,9,10	Manway		205929-1	>200		
2/20/2004	RW-11	Manway		205929-2	>200		
2/27/2004	RW-6,9,10,11	Manway		205971-1	>200		
3/5/2004	RW-10	Manway		206045-1	>200		
3/5/2004	RW-6,9,11	Manway		206045-2	>200		
3/9/2004	RW-10	Manway		206064-1	>200		
3/9/2004	RW-6,9,11	Manway		206064-2	>200		
3/12/2004	RW-10	Manway		206089-1	>200		
3/12/2004	RW-6,9,11	Manway		206089-2	>200		
3/16/2004	RW-10	Manway		206126-1	>200		
3/16/2004	RW-6,9,11	Manway		206126-1	>200		
3/19/2004	RW-10	Manway		206148-1	120	*>200 performed by CycleChem*	
3/19/2004	RW-6,9,11	Manway		206148-2	140	*>200 performed by CycleChem*	
4/5/2004	RW-6,9,10,11	Manway (Site)		206279-1	140	*>200 performed by CycleChem*	
4/5/2004	RW-6,9,10,11	Manway (CycleChem)		206279-2	150	*>200 performed by CycleChem*	
4/13/2004	RW-6,9	Manway (as shipped)		206332-1	150		
4/13/2004	RW-6,9	Manway (product only)		206332-4	150		
4/13/2004	RW-6,9,11	Manway (as shipped)		206332-2	120		
4/13/2004	RW-6,9,11	Manway (product only)		206332-5	>200		
4/13/2004	RW-10	Manway (as shipped)		206332-3	120		
4/13/2004	RW-10	Manway (product only)		206332-6	120		
4/20/2004	RW-6,9	Manway			160		
4/20/2004	RW-10	Manway			120		
4/20/2004	RW-6,9,11	Manway			140		
4/20/2004	RW-6,9	Manway (oil)			>200		
4/20/2004	RW-10	Manway (oil)			120		
4/20/2004	RW-6,9,11	Manway (oil)			140		
4/23/2004	RW-6,9	Manway (as shipped)		206426-1	>200		
4/23/2004	RW-6,9	Manway (product only)		206426-4	140		
4/23/2004	RW-6,9,11	Manway (as shipped)		206426-2	150		
4/23/2004	RW-6,9,11	Manway (product only)		206426-5	130		
4/23/2004	RW-10	Manway (as shipped)		206426-3	140		
4/23/2004	RW-10	Manway (product only)		206426-6	120		
4/30/2004	RW-6	Manway		206849-1	150		
4/30/2004	RW-9	Manway		206849-2	150		
4/30/2004	RW-6,9	Manway (as shipped)		206849-3	140		
4/30/2004	RW-10	Manway		206849-4	150		
4/30/2004	RW-11	Manway		206849-5	150		
4/30/2004	RW-10,11	Manway (as shipped)		206849-6	130		
4/30/2004	RW-6,9	Manway (product only)		206849-7	150		
4/30/2004	RW-10,11	Manway (product only)		206849-8	120		
5/7/2004	RW-6,9	Manway		206540-2	160		
5/7/2004	RW-6,9,10,11	Manway		206540-5	130		
5/7/2004	RW-6,9	Manway (oil)		206540-6	150		

Pelham Plaza
Recovered DNAPL Flash Point Summary

Date	Sample Location	Comments	Quantity (gal)	Sample ID#	Reported Result (^oF)	*CycleChem DATA*
5/7/2004	RW-6,9,10,11	Manway (oil)		206540-7	120	
5/14/2004	RW-6,9	Manway		206631-1	>200	
5/14/2004	RW-6,9,11	Manway (as shipped)		206631-3	140	
5/14/2004	RW-10	Manway		206631-4	140	
5/14/2004	RW-6,9	Manway (product only)		206631-5	160	
5/14/2004	RW-10,11	Manway (product only)		206631-6	140	
5/14/2004	RW-10	Manway (oil)		206631-7	120	
5/21/2004	RW-6,9	Manway (as shipped)		206666-3	>200	
5/21/2004	RW-6,9,10	Manway (as shipped)		206666-5	>200	
5/21/2004	RW-6,9	Manway (oil)		206666-6	>200	
5/21/2004	RW-6,9,10	Manway (oil)		206666-7	>200	
6/11/2004	RW-10	Manway		206847-1	>200	
6/11/2004	RW-11	Manway		206847-2	>200	
6/11/2004	RW-10,11	Manway (as shipped)		206847-3	130	
6/11/2004	RW-10,11	Manway (product only)		206847-4	120	
6/18/2004	RW-10,11	Manway (as shipped)		206910-3	120	
6/18/2004	RW-10,11	Manway (product only)		206910-4	120	
6/25/2004	RW-10,11	Manway (as shipped)		206987-3	120	
7/12/2004	RW-10,11	Manway (as shipped)		207101-1	120	
7/16/2004	RW-10,11	Manway (as shipped)		207139-3	120	
7/23/2004	RW-10,11	Manway (as shipped)		207198-3	120	
7/31/2004	RW-10,11	Manway (as shipped)		207257-3	120	
8/9/2004	RW-10,11	Manway (as shipped)		207323-3	120	
8/16/2004	RW-10,11	Manway (as shipped)		207376-3	130	
9/7/2004	RW-10,11	Manway (as shipped)		207500-3	120	
9/13/2005	RW-10,11	Manway (as shipped)		207544-3	120	
9/22/2004	RW-10,11	Manway (as shipped)		207625-3	120	
10/4/2004	RW-10,11	Manway (as shipped)		207710-3	120	
10/18/2004	RW-10,11	Manway (as shipped)		207812-3	120	
11/1/2004	RW-10	Manway		207963-1	180	
11/1/2004	RW-11	Manway		207963-2	150	
11/8/2004	RW-10,11	Manway (as shipped)		208005-3	130	
11/22/2004	RW-10,11	Manway (as shipped)		208124-3	<70	
11/29/2004	RW-6,9,10,11	Manway (as shipped)		208164-5	<70	
12/6/2004	RW-6,9,10,11	Manway (as shipped)		208215-5	120	
12/13/2004	RW-6,9,10,11	Manway (as shipped)		208303-5	160	
12/27/2004	RW-6,9,10,11	Manway		208424-5	>200	
1/31/2005	RW-6,9,10,11	Manway (as shipped)		208698-5	160	
2/7/2005	RW-6,9,10,11	End of pipe		208745-5	>200	
2/14/2005	RW-6,9,10,11	Manway (as shipped)		208803-5	>200	
2/28/2005	RW-6,9,10,11	Manway (as shipped)		208900-5	160	
3/7/2005	RW-6,9,10,11	Manway (as shipped)		208848-5	160	
3/14/2005	RW-6,9,10,11	Manway (as shipped)		209019-5	170	
3/21/2005	RW-6,9,10,11	Manway (as shipped)		209076-5	170	
3/28/2005	RW-6,9,10	Manway (as shipped)		209134-4	160	
4/4/2005	RW-6,9,10	Manway (as shipped)		209199-4	160	
5/8/2005	RW-6,9,10,11	Manway (as shipped)		209482-5	160	
5/16/2005	RW-6,9,10,11	Manway (as shipped)		209549-5	200	
5/23/2005	RW-6,9,10,11	Manway (as shipped)		209601-5	140	
6/6/2005	RW-6,9,10,11	Manway (as shipped)		209720-5	130	
6/13/2005	RW-6,9,10,11	Manway (as shipped)		209812-5	130	
6/20/2005	RW-6,9,10,11	Manway (as shipped)		209900-5	170	
6/27/2005	RW-6,9,10,11	Manway (as shipped)		210001-5	160	
7/11/2005	RW-6,9,10,11	Manway (as shipped)		210146-5	160	
7/18/2005	RW-6,9,10	Manway (as shipped)		210254-4	160	
7/25/2005	RW-6,9,10	Manway (as shipped)		210308-4	160	
8/1/2005	RW-6,9,10	Manway (as shipped)		210354-4	170	
8/8/2005	RW-6,9,10	Manway (as shipped)		210421-4	160	
8/15/2005	RW-6,9	Manway (as shipped)		210485-3	160	
8/22/2005	RW-6,9,10	Manway (as shipped)		210566-4	160	
9/19/2005	RW-6,9,10	Manway (as shipped)		210820-4	130	