FPM group — Engineering and Environmental Science

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VIA OVERNIGHT COURIER

May 7, 2013

Ms. Alicia Barraza
NYSDEC
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7016

Re: **Finalized Remedial Investigation Work Plan**
34-11 Beach Channel Drive, Queens, Site #C241141
Far Rockaway, New York
FPM File No. 1087g-12-04

Dear Ms. Barraza:

Enclosed please find one hard copy and one electronic copy of the finalized Remedial Investigation Work Plan for your approval. An electronic copy has also been transmitted to Bridget Callaghan at the New York State Department of Health.

The finalized Work Plan addresses your May 2, 2013 comments. Please confirm that the finalized RI Work Plan is approved. Thank you.

Very truly yours,

Stephanie O. Davis, C.P.G.
Senior Hydrogeologist
Department Manager

SOD:tac
Enclosures

cc: Bridget Callaghan, NYSDOH via email
Alan Knauf, Esq. via Dropbox

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REMEDIAL INVESTIGATION
WORK PLAN

PREPARED FOR

34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

NYSDEC BCP SITE NO. C241141

PREPARED BY

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NY 11779

APRIL 2013

REMEDIAL INVESTIGATION WORK PLAN

Prepared for

Facility: 34-11 Beach Channel Drive Site
Far Rockaway, Queens, New York

FPM File No: 1087g-12-04

I, Stephanie O. Davis, CPG, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Stephanie O. Davis, CPG

Name

Signature

Prepared by

FPM Group
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(Tel) 631-737-6200
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SECTION 1.0
INTRODUCTION AND PURPOSE

This Remedial Investigation (RI) Work Plan has been prepared by FPM Group (FPM) for the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site #C241141, identified as 34-11 Beach Channel Drive located in Far Rockaway, Queens, New York (Site). This work plan describes the procedures to further evaluate the nature and extent of contamination (primarily chlorinated volatile organic compounds, or CVOCs) present on and downgradient of the Site. This work plan has been developed in accordance with the procedures outlined in the New York State Department of Environmental Conservation (NYSDEC) DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010).

1.1 Site Location and Description

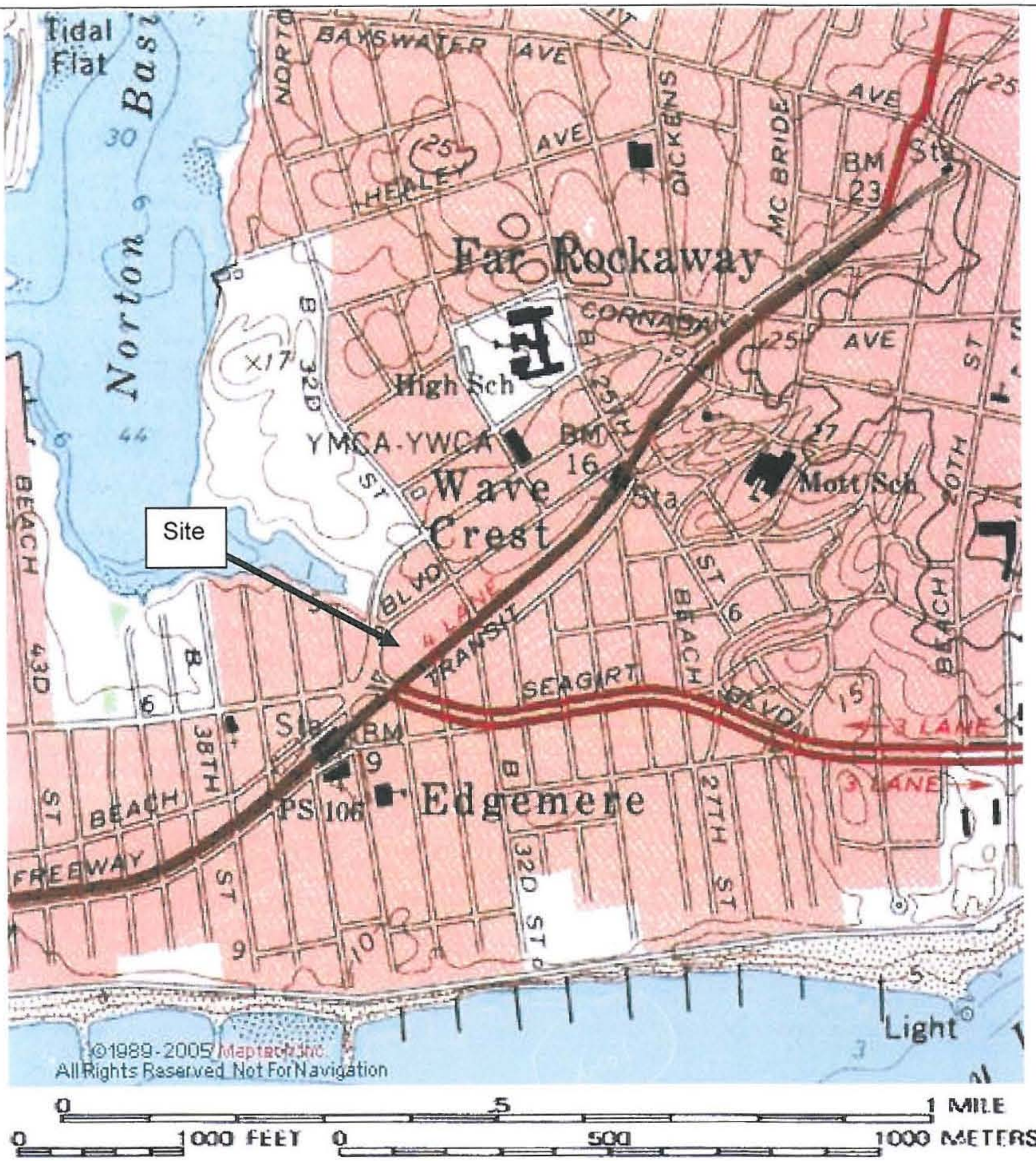
The subject Site is identified as 34-11 Beach Channel Drive, located in Far Rockaway, Borough of Queens, New York, and is owned by Alprof Realty LLC and VFP Realty LLC. The Site occupies approximately 0.85 acres and consists of two parcels identified by the New York City Tax Map as Borough of Queens, Block 15950, Lots 14 and 24. The Site is generally bounded by Far Rockaway Boulevard to the north and northwest, Beach Channel Drive to the northwest, Rockaway Expressway and Long Island Rail Road tracks to the south, and a vacant lot (Lot 29) to the east. The Site is in a commercial overlay district and is zoned C2-2.

There are presently no structures on the Site. Historically a gasoline service station was present on Lot 14; this use has been discontinued and the former building removed. Lot 14 was recently occupied by a construction contractor, which maintained a trailer-type building on the lot until late 2012; this use has been discontinued and the trailer-type building is removed. Lot 14 is presently used for storage of dumpsters; no structures are present. Lot 24 is also used for storage of dumpsters; no structures are located on Lot 24. A location map showing the Site and vicinity is presented in Figure 1.1.1. A plan of the Site and surrounding property is included as Figure 1.1.2.

No storm drains, catch basins, or operational underground utilities are known to be present at the Site. As discussed in more detail in Section 2.1 herein, a geophysical survey performed on Lot 14 in 2002 identified a potential underground storage tank (UST) near the northwest corner of Lot 14. Ten concrete-filled UST fill ports were reported in association with a concrete pad on the western portion of Lot 14. No other USTs or subsurface infrastructure was reported.

1.2 Site Environmental Setting

The surface topography of the Site and surrounding vicinity was obtained from the USGS Far Rockaway, New York Quadrangle (1967, photorevised 1979). The topographic elevation of the Site is approximately 8 feet above mean sea level (MSL), as shown in Figure 1.1.1. The Site surface is generally flat and has been modified from its original configuration (former marsh with an elevation near sea level) by the placement of fill. Figure B (included in Appendix A) depicts the Site vicinity in the late 1880s, when it was a marsh located between the Bay of Far Rockaway (now the Reynolds Chanel) and Jamaica Bay to the northwest. This area underwent a lengthy period of filling and channel dredging in the late 1800s and into the 1900s, during



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NORTH

Source: USGS 7.5-Minute Far Rockaway, NY Quadrangle

FPM GROUP		
FIGURE 1.1.1		
SITE AREA MAP 34-11 BEACH CHANNEL DRIVE SITE FAR ROCKAWAY, NEW YORK		
Drawn by: BC	Checked By: SOD	Date: 01/08/13

0' 100' 200'

APPROXIMATE SCALE

SOURCE: GOOGLE EARTH 11/5/2012

FPM GROUP		
FIGURE 1.1.2 SITE VICINITY PLAN 34–11 BEACH CHANNEL DRIVE SITE FAR ROCKAWAY, QUEENS, NEW YORK		
Drawn By: H.C.	Checked By: B.C.	Date: 1/8/13

H:\ALPROF\RIWP\B.dwg, 1/14/2013 3:29:05 PM, HP Color LJ 3800, Letter which time much of the Rockaway Peninsula was filled. Fill appears to have been placed over the entire Site and vicinity. Fill in the Site vicinity appears to consist largely of native sand, presumably excavated during the enlargement of the nearby Norton Bay and creation of the Reynolds Channel. Other materials, such as solid waste, coal ash, wood ash, incinerator ash, construction and demolition debris, railroad ballast, refuse, or land-clearing debris, which may be components of historic fill, have not been noted in the borings performed onsite.

A dredged channel that connects to Norton Basin is located approximately 500 feet to the northwest of the Site and the Atlantic Ocean is located approximately one-quarter mile south of the Site. The Edgemere Landfill is situated approximately one-half mile northwest of the Site.

Beneath the historic fill, the Site is underlain by Upper Glacial Formation sand, silt, and clay outwash plain deposits (USGS, 1966). The Gardeners Clay, consisting of clay with interbedded silt and sand, is present below the Upper Glacial Formation. Groundwater is found within the Upper Glacial Formation.

The depth to groundwater beneath the Site is approximately five to ten feet based on information obtained during previous investigations performed at the Site. The groundwater flow direction was determined to be generally to the west-northwest during previous investigation work conducted on the Site and the adjoining Lot 29. The groundwater flow velocity in the shallowest groundwater has been estimated at 0.2 feet per day, while the flow velocity decreases downward to an estimated 0.005 feet per day in the deeper portion of the Upper Glacial Aquifer, as documented in a report concerning the adjoining Lot 29.

The NYSDEC's database of public water supply wells was searched and no public water supply wells were identified within one-half mile of the Site. The NYSDEC's Long Island wells database was searched and the only wells identified in Far Rockaway are three industrial supply wells operated by LILCO (now LIPA) at 1425 Bay 24th Street, approximately ¾ mile northeast (crossgradient) from the Site. These wells are completed between 127 and 133 feet below grade and are associated with a power plant. Based on the distance and direction to these wells and their use, they do not present a concern. No other water supply wells were reported. Based on the urban nature of the surrounding area, the availability of public water via the New York City water supply system, the proximity to major salt water bodies and contaminant sources (Edgemere Landfill), additional private water supply wells are not anticipated in the Site vicinity. The USGS reported a chloride concentration of 12,200 mg/l in the Upper Glacial Aquifer in the Site vicinity in 1955 (USGS Water-Supply Paper 1613-F). 6 NYCRR Part 701 defines saline groundwaters (SGB) as groundwater with chloride content in excess of 1,000 mg/l. Based on this data, it is highly unlikely that the Upper Glacial Aquifer in the Site vicinity is used for potable water supply purposes.

1.3 Site History

Lot 14 of the Site was initially developed with a garage prior to 1933; uses noted since this time have included automobile repair and a retail gasoline station with associated underground storage tanks (USTs). The garage structure was reportedly removed circa 2004. A construction contractor most recently utilized Lot 14 for temporary offices and storage of construction-related equipment; a temporary trailer-type building was present during this use but was removed from the Site in late 2012. Lot 14 is presently used for storage of dumpsters.

No structures have been reported on Lot 24, except for a small shed noted in 1933. Lot 24 appears to have been vacant since this time and has most recently been used for storage of dumpsters.

Subsurface investigations have been performed on the Site, primarily along the eastern portion of Lot 24, to evaluate contamination by VOCs migrating from the adjoining property to the east (Lot 29), which is presently owned by the Presiding Bishop of the Church of Jesus Christ of Latter-Day Saints (Church). VOCs, including trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2 DCE), vinyl chloride (VC), and petroleum-related VOCs, have been identified at the Church property and have migrated onto the Site. The Church property is listed as a NYSDEC Spills Site (spill #0207599); investigation and remedial efforts at the Church property have been conducted under the oversight of the NYSDEC. Previous subsurface investigations of the Site and the environmental history of the adjoining Church property are discussed in further detail in Section 2.

The scope of investigation included herein is intended to provide additional information concerning the nature and extent of VOCs that have migrated onsite from the adjoining Church property. Evaluation of the nature of historic fill on the Site will also be performed.

1.4 Property Usage Immediately Adjacent to Site

The Site is bounded to the north, across Far Rockaway Boulevard, by a shopping plaza containing a grocery store and several small retail shops. To the northwest, across and west of Beach Channel Drive are Bayswater Park and a residential area. To south, across Rockaway Freeway and the Long Island Rail Road tracks, is a multi-story apartment building. Adjoining to the east is the vacant Church property.

SECTION 2.0
SUMMARY OF PREVIOUS INVESTIGATIONS

The Site was initially investigated in 2002 during an environmental site assessment. Additional investigations were performed on the Site in 2007, 2008, 2009, and 2012 to further evaluate contamination migrating onsite from the adjoining Church property; these investigations are summarized below. An environmental summary of the adjoining Church property, including past investigations and remedial efforts, is also presented below. Pertinent investigation data collected by FPM in 2012 that will be relied on as part of the RI are included in Appendix A. Additional data collected by others during previous investigations is also included in Appendix A. A complete list of previous investigations is provided in the References in Section 5.

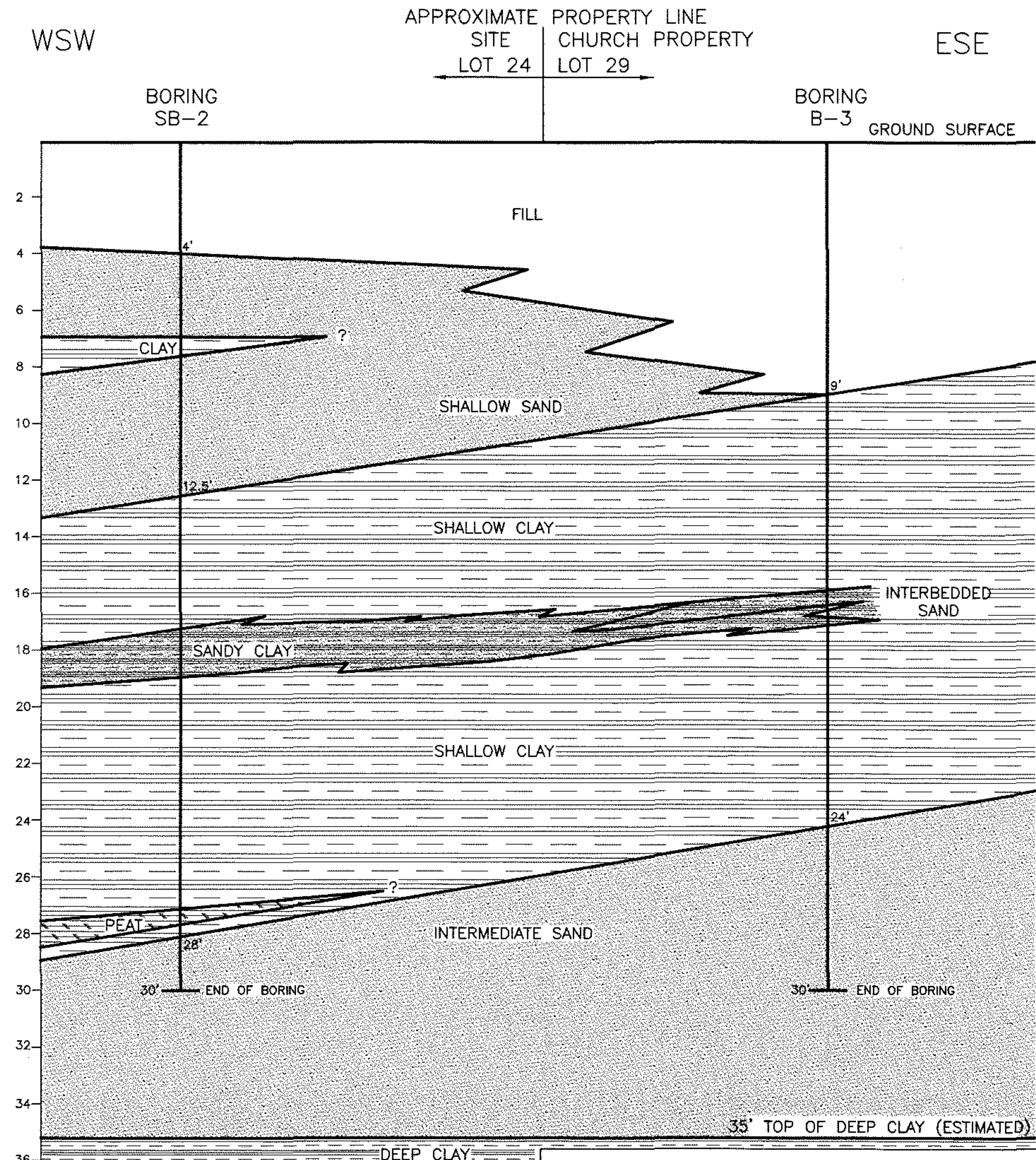
A stratigraphic cross-section depicting the generalized stratigraphy in the subsurface of the Site and adjoining Church property is shown in Figure 2.1. In general, the Site and vicinity are underlain by fill to a depth of between four and ten feet. Below the fill is a "shallow sand" that extends to a depth of up to 16 feet below grade. Beneath the "shallow sand" is an organic clay ("shallow clay") to a depth of up to 28 feet. An "intermediate sand" is present beneath the "shallow clay" and extends to approximately 35 feet below grade. The "deep clay" is present below the "intermediate sand" and was present to a depth of 54 feet below grade on the adjoining Lot 29. This "deep clay" is an aquitard between the overlying shallow and intermediate sands (water-bearing units) and deeper units. All of these units are Upper Pleistocene glacial deposits; the "deep clay" may correspond to the Pleistocene 20-foot clay mapped by the USGS. The top of the Magothy Formation is mapped at an elevation of -200 feet MSL in the Site vicinity (USGS Water-Supply Paper 1613-F) and was not penetrated by any of the borings previously performed at the Site or on the adjoining Lot 29.

2.1 2002 Environmental Site Assessment

The Site was initially investigated in 2002; this investigation included an environmental site assessment and a limited subsurface investigation. This investigation identified a historic gasoline service station, auto repair activities, and a suspected UST on the northwest portion of Lot 14 as Recognized Environmental Conditions (RECs). Lot 24 was identified as vacant and overgrown with vegetation. Solid waste debris was the only REC identified for Lot 24.

A State and Federal environmental database search was conducted and included a search of the National Priorities List, the Comprehensive Environmental Responsibility Compensation Liability Information System database, the Solid Waste Landfill Facility database, the Resource Conservation and Recovery Information System database, the Emergency Response Notification database, the NYSDEC spills database, the NYSDEC Leaking UST database, the NYSDEC Hazardous Substance or Inactive Hazardous Waste Disposal Sites databases, and the NYSDEC Petroleum Bulk Storage database. The Site was not identified on any of the databases.

The identified RECs on Lots 14 and 24 were investigated in 2002 by performing a geophysical survey, conducting soil borings and groundwater sampling, conducting in-house chromatographic screening, and submitting select samples to an analytical laboratory for testing of VOCs, semivolatile organic compounds (SVOCs), and metals. The geophysical survey identified one anomaly consistent with a UST near the northwestern corner of Lot 14 of the Site.



APPROXIMATE SCALE:
VERTICAL: 1"=5'
HORIZONTAL; 1"=10'
VERTICAL EXAGGERATION = 2X

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FIGURE 2.1
STRATIGRAPHIC CROSS-SECTION
BLOCK 15950, LOTS 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:4/1/13

There is no report of this UST having been removed. No other anomalies were identified on the Site.

Copies of the figures and data tables from the 2002 Environmental Site Assessment are included in Appendix A. Figure 2.1.1 shows the groundwater sampling locations and exceedances of the NYSDEC Class GA Ambient Water Quality Standards (Standards).

No visual or olfactory evidence of chemical or petroleum impact was observed in any of the below-grade soil samples. No VOCs or metals were detected in soil in excess of the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives (Objectives), which were the applicable Standards, Criteria, and Guidance (SCGs) at that time. One SVOC (chrysene) was detected in a shallow soil sample (0 to 2 feet below grade) at a concentration that slightly exceeded the NYSDEC Objective. This sample was obtained from an area of surficial staining on the northwest side of Lot 14. This detection is consistent with surficial soil contamination by SVOCs typical of auto repair facilities and is also consistent with the historic fill present beneath Lot 14.

Low levels of petroleum-related VOCs, including methyl tert-butyl ether (MTBE), sec-butylbenzene, isopropylbenzene, and/or n-propylbenzene, were detected at two groundwater sampling locations on Lot 14. The levels of three VOCs slightly exceeded their respective NYSDEC Standards, as shown on Figure 2.1.1. No petroleum-related VOCs were identified in the groundwater sample collected from Lot 24.

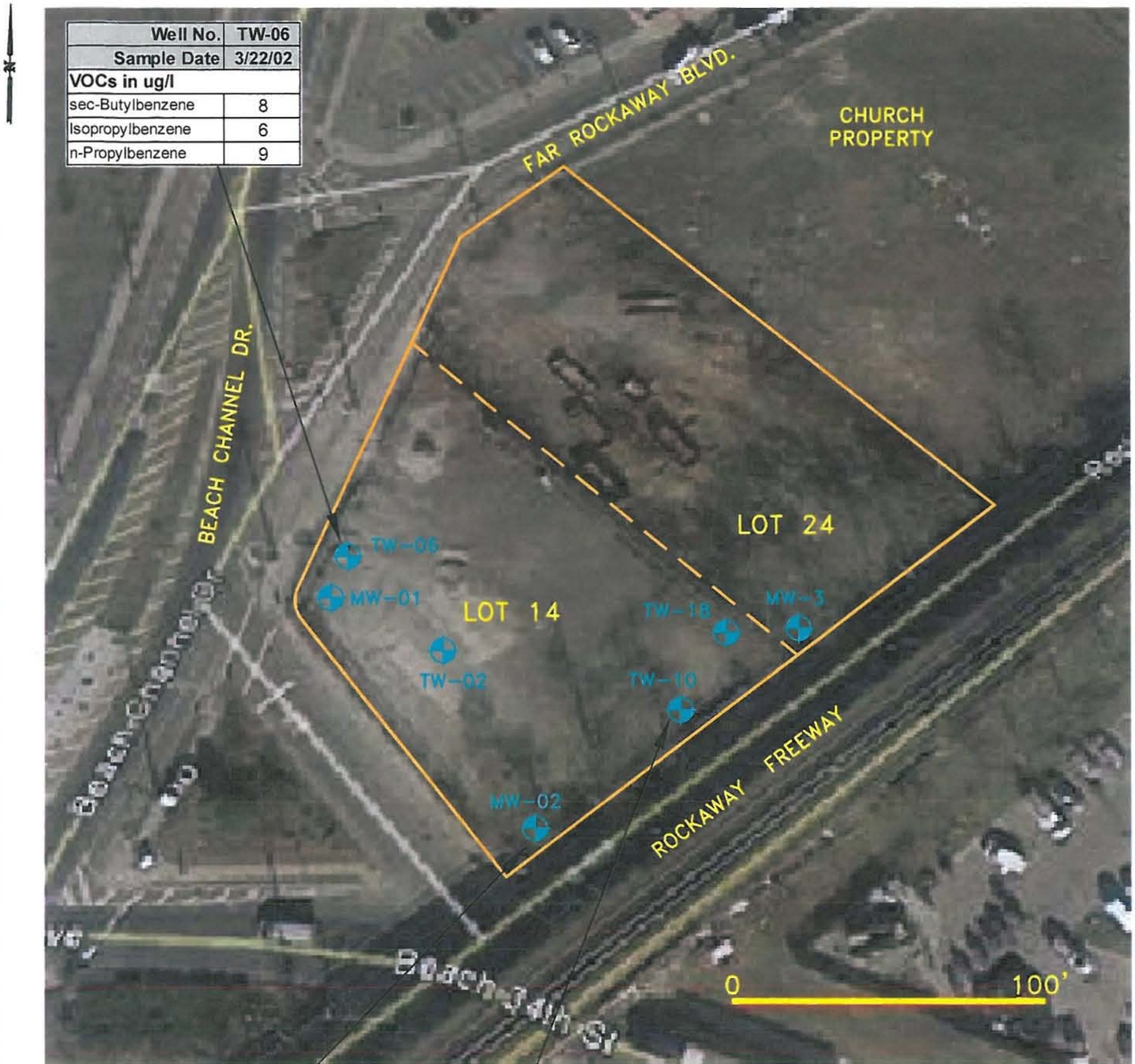
The metals arsenic, chromium, barium, and/or lead were detected in two groundwater samples from Lot 14 at concentrations that exceeded the NYSDEC Standards. These samples were collected from wells that had not been properly developed and the samples were not filtered; it is likely that these detections resulted from suspended particulate material in the samples.

In-house screening of the soil and groundwater samples was also performed using a gas chromatograph; this screening was performed to evaluate the relative levels of VOCs in each sample so that samples could be selected for laboratory analysis. This screening identified large early peaks in the chromatograms of all of the groundwater samples; these peaks were noted as "solvent" on the chromatograms. However, since solvent VOCs were not identified as chemicals of concern at the Site, no further analysis was performed to quantify the in-house screening results.

2.2 2007 Environmental Investigation

Following the identification of contamination on the adjoining Church property, groundwater sampling was performed at seven locations on the Site for VOCs and SVOCs (B54 through B58, B61, and B62) to determine if contamination extended offsite from the Church property. Groundwater sampling was performed at approximately 10 feet below grade, which is within the shallow groundwater beneath the Site. The groundwater sample locations are shown on Figure 2.2.1 and exceedances of the NYSDEC Standards are depicted. Copies of the laboratory data from this investigation are included in Appendix A.

The four groundwater samples located most closely downgradient of the area of contamination identified on the Church property (B-54, B-55, B-56, and B-57) exhibited concentrations of the chemicals of concern in excess of the NYSDEC Standards. VC was detected at the highest levels, ranging from 650 to 2,800 micrograms per liter (ug/l); trans-1,2-DCE was detected at up to 1,200 ug/l, and 1,1-DCE was detected at up to 280 ug/l. TCE was detected in one sample at



Well No.	TW-06
Sample Date	3/22/02
VOCs in ug/l	
sec-Butylbenzene	8
Isopropylbenzene	6
n-Propylbenzene	9

Well No.	MW-02
Sample Date	3/12/02
Metals in mg/l	Unfilt.
Arsenic	0.21
Chromium	0.43
Lead	2.31

Well No.	TW-10
Sample Date	3/11/02
Metals in mg/l	Unfilt.
Arsenic	0.12
Barium	0.30
Chromium	1.00
Lead	0.20

LEGEND:

MW-01/TW-01 GROUNDWATER SAMPLE LOCATION (2002)

FPM GROUP

FIGURE 2.1.1
2002 GROUNDWATER SAMPLE LOCATIONS

34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

Drawn By: H.C. | Checked By: B.C. | Date: 4/1/13

Well No.	B-57
Sample Date	1/25/07
TCL VOCs in ug/l	
Vinyl chloride	650
trans-1,2-dichloroethene	540
Benzene	35

Well No.	B-56
Sample Date	5/16/07
TCL VOCs in ug/l	
Vinyl chloride	100
1,1-Dichloroethene	9
trans-1,2-Dichloroethene	13
Trichloroethene	48

Sample No.	B-55
Sample Date	1/25/07
TCL VOCs in ug/l	
Vinyl chloride	1,700
trans-1,2-dichloroethene	610
Benzene	35

Sample No.	B-54
Sample Date	06/08/10
TCL VOCs in ug/l	
Vinyl chloride	2,800
1,1-Dichloroethene	280
trans-1,2-dichloroether	1,200

LEGEND:

× B-54 GROUNDWATER SAMPLE LOCATION (2007)

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FIGURE 2.2.1
2007 GROUNDWATER SAMPLE LOCATIONS

34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

Drawn By: H.C.	Checked By: B.C.	Date: 4/1/13

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48 ug/l. Petroleum compounds were also detected, including benzene up to 35 ug/l. In the investigation report it was concluded that contamination from the adjoining Church property had migrated onto the Site.

2.3 2008 Environmental Investigation

To further evaluate contamination migrating from the adjoining Church property, additional investigation was performed in a small area of Lot 24 of the Site in November and December 2008. The area investigated was situated near the east corner of the Site approximately 30 feet southwest of the Church property and in the downgradient vicinity of a contaminated area previously identified on the Church property.

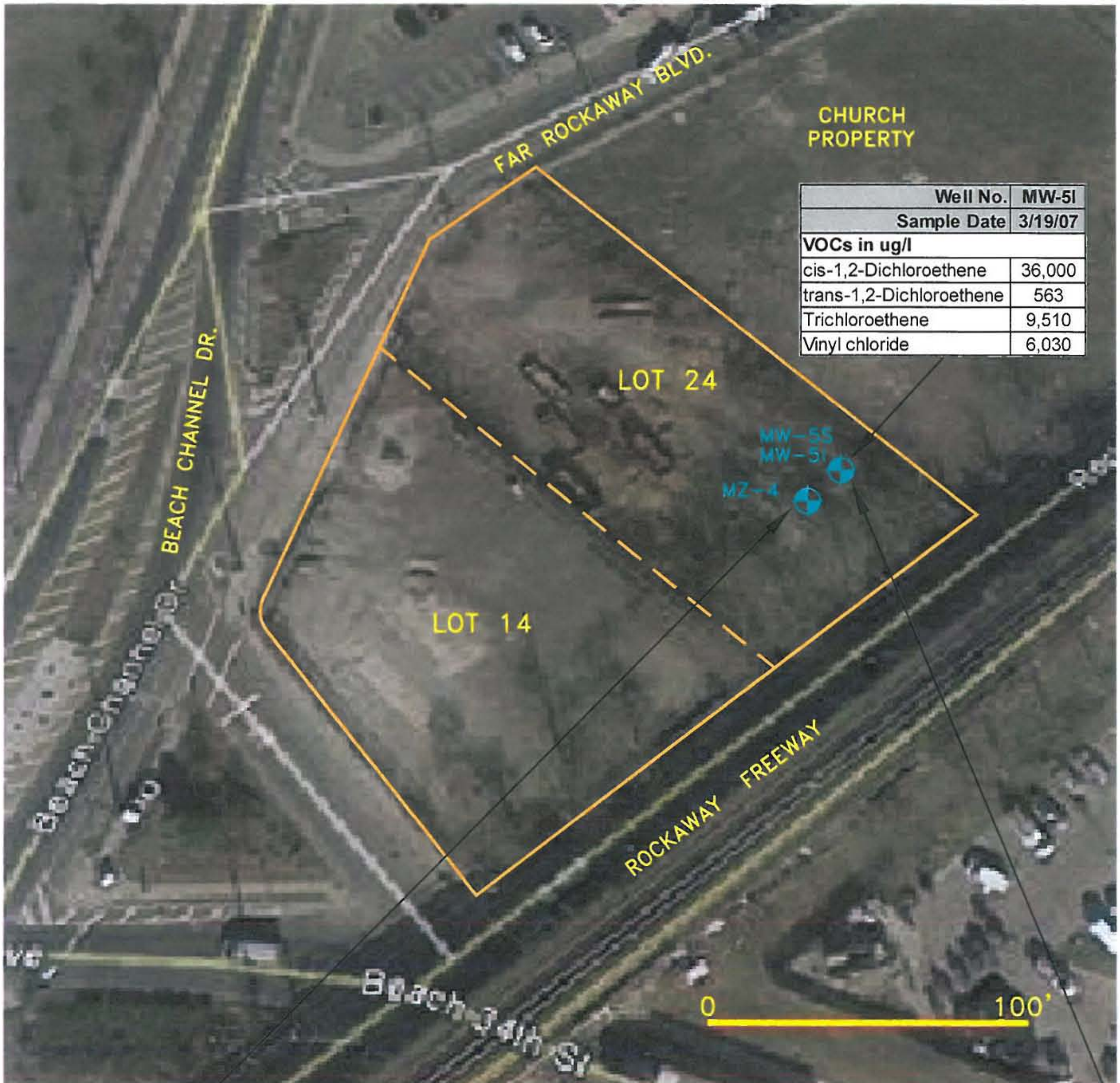
Fill was identified to five feet below grade and was underlain by sand to a depth of 16 feet below grade; this sand is identified as the "shallow sand" (Figure 2.1). Groundwater is present within the shallow sand. An organic clay was identified beneath the shallow sand to a depth of 22 feet; this clay is identified as the "shallow clay" and was determined to have a high total organic carbon content (4.45%). Another sand layer underlies the shallow clay to a depth of approximately 35 feet; this sand is identified as the "intermediate sand" and it also contains groundwater. A clay layer underlies the intermediate sand; this clay is identified as the "deep clay" and was found to be at least two feet thick in the investigated area.

Soil sampling for analysis of VOCs was conducted for the deep clay only; none of the chemicals of concern were identified in the deep clay. No analysis for VOCs was conducted for the shallow clay.

Groundwater samples were collected from both the shallow and intermediate sands. The sampling locations and exceedances of NYSDEC Standards are depicted on Figure 2.3.1. A copy of the available data is provided in Appendix A. Chlorinated VOCs were reported to have been detected in all of the groundwater samples, including primarily cis-1,2-DCE, with lower concentrations of VC, TCE, trans-1,2-DCE, and 1,1-DCE. Vertical profiling was performed at one location (MZ-4) to assess the distribution of VOCs in the shallow and intermediate sands. Chlorinated VOC concentrations were reported to increase downward within the shallow sand from 416.5 ug/l near the top of the shallow sand to 9,572.9 ug/l at the bottom of the shallow sand just above the shallow clay. In the intermediate sand below the shallow clay, chlorinated VOC concentrations decreased downward from 17,508.4 ug/l in the intermediate sand immediately below the shallow clay, to 718.9 ug/l in the middle of the intermediate sand, to 6.16 ug/l near the bottom of the intermediate sand. This distribution of chlorinated VOCs in the groundwater is not consistent with potential source of chlorinated VOCs on the Site. Monitoring wells MW-5S and MW-5I were installed in the shallow sand and intermediate sand, respectively. Samples collected in December 2008 documented the presence of 1,1-DCE, cis- and trans-1,2-DCE, TCE, and/or vinyl chloride in both sands, with the concentrations of these CVOCs being highest in the intermediate sand. These data are shown on Figure 2.3.1.

2.4 2009 Environmental Investigation

In 2009 further investigation was performed on the east portion of Lot 24 in the downgradient vicinity of a contaminated area previously identified on the Church property and where extensive excavation of TCE-impacted soil had been conducted in 2004 and additional excavation was conducted in 2009. The approximate extent of the 2004 excavation on the Church property is shown on a figure included with the 2007 Environmental Investigation Data in Appendix A.



Well No.	MW-5I
Sample Date	3/19/07
VOCs in ug/l	
cis-1,2-Dichloroethene	36,000
trans-1,2-Dichloroethene	563
Trichloroethene	9,510
Vinyl chloride	6,030

Well No.	MZ-4				
Sample Depth (ft bgs)	7	16	19	27	35
Sample Interval	top of shallow sand	bottom of shallow sand	top of intermediate sand	middle of intermediate sand	bottom of intermediate sand
Sample Date	11/13/08				
Total CVOCs in ug/l	416.5	9,572.9	17,508.4	718.9	6.16

Well No.	MW-5S
Sample Date	12/2/08
VOCs in ug/l	
1,1-Dichloroethene	19.6
cis-1,2-Dichloroethene	4,090
trans-1,2-Dichloroethene	131
Trichloroethene	57

LEGEND:

MW-5S GROUNDWATER SAMPLE LOCATION (2008)

FPM GROUP

FIGURE 2.3.1
2008 GROUNDWATER SAMPLE LOCATIONS

34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

Drawn By: H.C.	Checked By: B.C.	Date: 4/1/13

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Approximately 13,882 tons of petroleum-contaminated soil, 12,430 gallons of petroleum mixed with groundwater, and 418.31 tons of TCE-impacted soil were removed from the excavation area between June and November 2004 and disposed offsite. A sample of the TCE-impacted soil was tested and found to contain 13,804 mg/kg of TCE. Additional impacted soil and petroleum and groundwater were removed from this area in March and April 2009. Petroleum product samples from wells MW-4S and MW-4I, in the shallow sand and intermediate sand, respectively, located on the Church property in the former excavation area were tested in May 2009 and found to contain 123,000 ug/l and 23,500,000 ug/l of TCE, respectively.

The 2004 investigation on Lot 24 included the collection of six shallow soil samples (SB-1 through SB-6) from a depth of approximately 2.5 feet below grade and laboratory analysis for CVOCs. As the Church's remediation process had included use of the surface of Lot 24 for access purposes, the surface of Lot 24 may have been contaminated by impacted soil from the Church property. One soil sample (SB-2) contained TCE at a concentration (11 ppm) above the 6 NYCRR Part 375 Soil Cleanup Objective for unrestricted use (Objective), but below the NYSDEC Objective for restricted-residential use (21 ppm). None of the other soil samples contained any CVOCs in excess of the NYSDEC Objectives.

2.5 2012 Environmental Investigation

To further evaluate impacts originating from the adjoining Church property, an environmental investigation was conducted by FPM on Lots 14 and 24 in August 2012; this investigation included soil, groundwater, and soil vapor sampling. The area investigated included the portions of Lots 14 and 24 located downgradient (generally west) of the area of contamination identified on the Church property. Sampling locations are shown on Figure 1 in the 2012 investigation information in Appendix A. Sampling was conducted in accordance with typical NYSDEC and NYSDOH protocols for investigation of BCP sites, including sampling by environmental professionals, quality assurance/quality control (QA/QC) procedures, use of a NYSDOH-ELAP-certified laboratory, Category B data deliverables, capability for electronic data deliverables (EDDs), and completion of data usability summary reports (DUSRs). These data are summarized in Appendix A and will be fully documented and relied upon in the RI Report.

Soil borings were conducted at three locations (SB-1 through SB-3) on Lot 24 to between 25 and 30 feet below grade. The SB-3 boring was performed at the approximate location of the SB-2 boring conducted in 2009. Fill was identified between 2.5 and five feet below grade. The shallow sand was identified below the fill and extended to between approximately 12 and 18 feet below grade. Groundwater was encountered generally between 7 and 9 feet below grade in the shallow sand. The shallow clay was identified below the shallow sand and extended to depths ranging between approximately 24 and 28 feet. The intermediate sand was identified below the shallow clay in two borings but was not fully penetrated.

No odor or staining was noted in any of the fill samples. The soils were screened with a calibrated photoionization detector (PID) to evaluate the potential presence of organic vapors that may indicate VOC contamination; there were no significant organic vapor detections for any of the fill samples. PID readings of up to 21 parts per million (ppm) were noted in the shallow sand, shallow clay, and intermediate sand. These readings are suggestive of VOC contamination.

Soil sampling was conducted in each of the borings; samples were selected to characterize the shallow sand and the shallow clay. The samples were analyzed for Target Compound List

(TCL) VOCs. The sample locations are shown on Figure 1 and the results are summarized on Table 1 in Appendix A. No exceedances of the NYSDEC Objectives were noted in any of the shallow sand samples. Exceedances of the NYSDEC Objectives for chemicals of concern, including cis-1,2-DCE and/or VC, were noted in all of the shallow clay samples. The highest concentrations were detected at the 2012 SB-2 location, which is the closest sample location to the area of contamination identified on the adjoining Church property. TCE, which is the primary contaminant at the Church property, was not detected in any of the soil samples from the Site.

Groundwater sampling was conducted at six locations on Lot 24 (GW-1, GW-2 and GW-4 through GW-7) and one location on Lot 14 (GW-3), as shown on Figure 1 in Appendix A. At each location one groundwater sample was collected from the lower portion of the shallow sand and one groundwater sample was collected from the upper portion of the intermediate sand. The results are summarized on Table 2 in Appendix A. Chlorinated VOCs that are chemicals of concern were detected in nearly all of the groundwater samples. The highest concentrations of chlorinated VOCs at each location were detected in the samples from the shallow sand. The highest concentrations of chlorinated VOCs were noted in the shallow sand at GW-2, which is the location in closest downgradient proximity to the area of contamination identified on the Church property; cis-1,2-DCE was detected at 310,000 ug/l and VC was detected at 21,000 ug/l in GW-2. The highest concentrations of chlorinated VOCs in the intermediate sand (5,100 ug/l of cis-1,2-DCE and 86 ug/l of VC) were detected at GW-1, which is also in close proximity to the area of contamination identified on the Church property. Chlorinated VOCs extended downgradient (west) at least as far as the GW-3 location on Lot 14, where 320 ug/l of cis-1,2-DCE and 470 ug/l of VC were identified in the shallow sand. Petroleum compounds were also detected in many groundwater samples, including benzene up to 15 ug/l in GW-6, and toluene up to 23 ug/l in GW-7.

Soil vapor sampling was conducted at five locations (SV-A through SV-E) on Lot 24, as shown on Figure 1 in Appendix A. At each location one soil vapor sample was collected from approximately five feet below grade in accordance with NYSDOH procedures. The results are summarized on Table 3 in Appendix A. Chlorinated VOCs that are chemicals of concern were detected in all of the samples. Petroleum compounds were also detected in all of the samples. The highest concentrations of chlorinated VOCs were noted at SV-D and SV-E, which are the locations in closest downgradient proximity to the area of contamination identified on the Church property. The chlorinated VOCs detected at the highest concentrations at these two locations were cis-1,2-DCE and VC. At the SV-A through SV-C locations, which are more distant from the area of contamination identified on the Church property, TCE was the chlorinated VOC detected at the highest concentration. In accordance with NYSDOH soil vapor intrusion guidance, mitigation for soil vapor intrusion would be required at each location if a building were present.

2.6 Church Property Environmental Summary

The adjoining upgradient Church property (Lot 29) is documented as the source of CVOC contamination that impacts the Site. Petroleum contamination from the Church property has also impacted the Site. The following information summarizes the investigation and remedial efforts conducted at the Church property as they pertain to the Site (Lots 14 and 24). Available data for the investigations discussed below are included in Appendix A.

In 2002 a Phase I Environmental Site Assessment of the Church property was performed; soil sampling was recommended to be performed adjacent to the historic building that occupied the Church property. In August 2002, five soil borings were conducted in the area of the former building; TCE, cis-1,2-DCE, and xylenes were identified in excess of the NYSDEC TAGM 4046 Objectives. Additional soil and groundwater sampling was conducted in October 2002 in the footprint and northeast of the former building. Petroleum-contaminated soils were reported to have been identified in the interval from four to eight feet below grade and NYSDEC Spill No. 02-07599 was subsequently assigned.

In 2004, removal of contaminated soil was performed under a NYSDEC-approved Corrective Action Plan (CAP). Approximately 19,882 tons of petroleum-impacted soil and 12,430 gallons of free-phase petroleum and water were reported to have been removed during this remedial effort. Soil exhibiting a strong solvent odor was also noted during remedial efforts. A sample collected from this material was found to have a TCE concentration of 13,804 ppm. This TCE-impacted material (418.31 tons) was subsequently stockpiled and transported and disposed offsite as hazardous waste. During remedial efforts a 300-gallon UST and a 1,500-gallon UST were discovered and subsequently removed and disposed offsite.

An investigation of soil, groundwater and soil vapor conditions was conducted at the Church property in 2006. Three monitoring wells (MW-1 to MW-3) were installed into the shallow sand on the central and northwestern portions of the Church property. No VOCs or SVOCs were detected. Groundwater sampling was also conducted in boring locations from within and around the perimeter of the former remedial area. Chlorinated solvents, including TCE, VC, 1,1-DCE, trans-1,2-DCE, and PCE, were noted. TCE was detected at the highest concentrations, including levels as high as 36,000 ug/l. The highest concentration was found within the previously-excavated area in apparent proximity to the former south corner of the historic plumbing supply building. Soil vapor sampling was also conducted at several locations around the perimeter of the Church property and in portions of the property generally away from the previously-excavated area. Soil vapor samples contained several chemicals of concern, including TCE, PCE, and cis-1,2-DCE, at concentrations requiring mitigation in accordance with NYSDOH guidance if a building were present. Based upon the results of this investigation additional groundwater sampling was required by the NYSDEC and was performed in November 2006. This additional sampling included multi-level groundwater sampling for TCE at three locations on the Church property that directly adjoined the Site. TCE was detected in groundwater from all three locations sampled (B47, B51, and B52) at depths ranging from 10 to 60 feet below grade. The highest TCE levels were detected in shallow groundwater from 10 feet below grade on the Church property, including TCE up to 950,000 ug/l at B47, which is nearly the solubility of TCE in water and suggestive of the presence of DNAPL. TCE was also detected in many of the deeper groundwater samples at levels exceeding the NYSDEC Standard. VC, 1,1-DCE, trans-1,2-DCE, and/or PCE were also detected in many of these samples. Based on these data, the NYSDEC requested that off-site groundwater sampling be performed.

In January 2007 additional investigation was performed offsite on Lot 24 (the Site), as discussed above. Portions of this investigation were also conducted on the Church property and along the western side of Beach Channel Drive (offsite). Five groundwater samples (B63 through B67) were collected from an approximate depth of 10 feet below grade along the western side of Beach Channel Drive; the sampled area is generally to the northwest of the area of contamination on the Church property. No chemicals of concern are reported to have been detected in these samples. Two locations (B59 and B53) were sampled along the boundary of the Church property where it adjoins Lot 24 of the Site; groundwater samples collected from 10 feet below grade were found to contain TCE, VC, 1,1-DCE, and/or trans-1,2-DCE. Sample B53 was closest to the area of contamination on the Church property and contained VC at 4,800 ug/l. The report of this investigation concluded that the CVOC groundwater plume from the Church property extends to the west of the Church property and onto the Site

In March and April 2009 test pits were conducted on the Church property to delineate the extent of observed petroleum impacts. During these activities, petroleum-impacted soils were excavated and stockpiled and petroleum and groundwater were removed from one test pit. Further soil borings with groundwater sampling were conducted in May 2009. This investigation identified an area of approximately 100 feet by 100 feet impacted by petroleum. Petroleum product from two wells in this area was analyzed and found to contain TCE at concentrations ranging from 123,000 ug/l (shallow sand) to 23,500,000 ug/l (intermediate sand); these concentrations are indicative of the presence of DNAPL, particularly in the intermediate sand where the sample was collected from a double-cased well screened from 27 to 40 feet below grade (well below the water table). TCE was detected at concentrations ranging from 1.42 ppm to 6,990 ppm in soil samples from the investigated area, with a strong solvent odor and highly-elevated PID readings in the most impacted sample. It was concluded that the chlorinated VOC contamination in the shallow clay was more extensive and that an area of more than 1,000 square yards was impacted by petroleum. The TCE source area was identified in the vicinity of the MW-4 well cluster and the shallow clay was identified for remediation as a chlorinated VOC source. It was recommended that the remedial area be expanded and that remedial alternatives be evaluated.

In August 2009 a remedial plan for in-situ thermal treatment (ISTT) on the Church property was submitted to the NYSDEC and approved with revisions in November 2009. The remediation objectives were to mitigate the petroleum and chlorinated VOC impacts by heating the soil and groundwater to volatilize the contaminants. The contaminants would then migrate to the unsaturated zone above the water table where they would be captured by a vapor recovery system. This process was intended to mitigate potential vapor intrusion conditions and groundwater impacts. If free-phase petroleum was encountered, it would be removed by vacuum-enhanced fluid recovery. The treatment goal proposed and approved by the NYSDEC was a 99% reduction in groundwater TCE concentrations within the southwestern portion of the Church property; this would result in TCE concentrations of less than 400 ug/l in groundwater. This treatment goal did not address potential contamination by other VOCs in groundwater, including CVOCs, or potential contamination in soil and soil vapor.

The ISTT system was subsequently installed on the Church property, started up on November 1, 2010 and operated until August 25, 2011. Post-treatment groundwater sampling was conducted over a 90-day period in a limited area of the Church Property, including the MW-4/PZ-3 well cluster, the MW-3 and MW-9 well clusters, and MW-10s. Post-treatment soil sampling was also conducted within the treatment area. The soil results indicated no chlorinated VOCs in excess of the NYSDEC Restricted Use Objectives at the locations sampled. Although the post-treatment groundwater samples showed no TCE levels in excess of the 400 ug/l goal, cis-1,2-DCE, VC and other chlorinated VOCs remained present in excess of the NYSDEC Standards.

Additional groundwater sampling was conducted at well PZ-3 in January 2012 due to elevated VOCs in the PZ-3 sample collected in December 2011. These results showed chlorinated VOCs, including cis-1,2-DCE (585 ug/l), TCE (228 ug/l), and VC (4.8 ug/l), in excess of the

NYSDEC Standards and petroleum-related VOCs, including benzene and toluene, in excess of the NYSDEC Standards.

An environmental investigation was conducted by FPM on the Church property (Lot 29) in August 2012; this investigation included soil, groundwater, and soil vapor sampling. The area investigated included the portions of Lot 29 in and surrounding the remedial treatment area, which included the area of contamination identified on the Church property. Sampling locations are shown in Figure 1 and the associated data are presented in tables in the 2012 investigation information in Appendix A.

Soil borings were conducted at four locations (B-1 through B-4) on Lot 29 to 30 feet below grade. Fill was identified to between five and nine feet below grade in each boring. The shallow sand was identified below the fill in three of the borings and extended to between approximately 13 and 24 feet below grade. The fill was found to directly overlie the shallow clay in boring B-3. Groundwater was encountered between 5 and 10 feet below grade in the shallow sand except at boring B-3, where it was encountered in the fill just above the top of the clay. The shallow clay was identified below the shallow sand and extended to depths ranging between approximately 24 and 27 feet. The shallow clay was very thin (1.5 feet) at the B-1 location. The intermediate sand was identified below the shallow clay in all borings but was not fully penetrated. A summary of the pertinent investigation findings is:

- Soil sampling was conducted in each of the borings; samples were selected to characterize the shallow sand and the shallow clay. Where the shallow sand was absent a fill sample was collected. Exceedances of the NYSDEC Objectives for chemicals of concern, including cis-1,2-DCE and VC, were noted in two of the four shallow sand samples and in one shallow clay sample. Exceedances of the NYSDEC Objectives for the VOCs acetone and/or 2-butanone (methyl ethyl ketone) were also noted in shallow sand and shallow clay samples.

- Groundwater sampling was conducted at several locations on Lot 29, including the MW-6, MW-9, and MW-4/PZ-3 well clusters and two temporary locations (GW-A and GW-B). At each location one groundwater sample was collected from the shallow sand and one to two groundwater samples were collected from the intermediate sand. Chlorinated VOCs were detected in nearly all of the groundwater samples. The highest concentrations of chlorinated VOCs at each location were detected in the samples from the shallow sand. The highest concentrations of chlorinated VOCs were noted in the shallow sand at GW-A near the northern edge of the ISTT treatment area; cis-1,2-DCE was detected at 8,600 ug/l and VC was detected at 620 ug/l in GW-A. The highest concentrations of chlorinated VOCs in the intermediate sand (1,500 ug/l of cis-1,2-DCE and 120 ug/l of VC) were also detected at GW-A.

- Soil vapor sampling was conducted at five locations (SV-1 through SV-5) on Lot 29. At each location one soil vapor sample was collected from approximately five feet below grade in accordance with NYSDOH procedures. Chlorinated VOCs were detected in all of the samples. Petroleum compounds were also detected in all of the samples. The highest concentrations of chlorinated VOCs were noted at SV-3, SV-4 and SV-5, which are the locations on the northern portion of the ISTT treatment area. The chlorinated VOCs detected at the highest concentrations were TCE and cis-1,2-DCE. In accordance with NYSDOH soil vapor intrusion guidance, mitigation for soil vapor intrusion would be required at each location if a building were present.

In summary, sources of CVOCs and petroleum have been identified on the Church property in upgradient proximity to the Site. Although some remediation has been conducted, concentrations of CVOCs and petroleum remain present on the Church property, upgradient of the Site, at levels in excess of applicable SCGs. It is anticipated that the sources remaining on the Church property will continue to result in impacted groundwater and soil vapor and that impacted groundwater and soil vapor will continue to migrate from the Church property onto the Site.

SECTION 3.0
SCOPE OF REMEDIAL INVESTIGATION

The scope of RI work presented below has been developed to further evaluate the nature and extent of VOC contamination at the Site. In addition, the nature of historic fill present at the Site will be evaluated. This scope of work has been developed in accordance with the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010) and includes soil, soil vapor, and groundwater sampling.

FPM will conduct the RI on behalf of the Site owners, Alprof Realty LLC and VFP Realty LLC. All RI work will be overseen by a Qualified Environmental Professional (QEP). Contact information for the principal personnel for this project and the Site owner is provided in Table 3.1. Resumes of the principal technical personnel for this project are included in Appendix B.

TABLE 3.1
PROJECT PERSONNEL
34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

Role	Name	Phone Numbers		Email
		Office	Cell	
Senior Manager	Stephanie Davis. C.P.G.	631-737-6200 ext. 228	516-381-3400	s.davis@fpm-group.com
Project Manager	Ben Cancemi, C.P.G.	631-737-6200 ext. 209	516-383-7106	b.cancemi@fpm-group.com
Owner/Facility Contact	Peter Zahakos	-	917-407-6560	PeterZahakos@yahoo.com

All field work will be performed using a site-specific Health and Safety Plan (HASP), a copy of which is included in Appendix C. Please note that the HASP includes a Community Air Monitoring Plan (CAMP) prepared in accordance with DER-10, Appendix 1A. FPM will implement the CAMP during all intrusive activities at the Site.

A Citizen Participation Plan (CPP) has been approved for this Site. A copy of the approved CPP is available in the document repository.

3.1 RI Scope of Work

The RI sampling activities have been developed based on an evaluation of the existing Site data presented in Section 2. The sampling locations were selected for the purpose of evaluating the nature and extent of solvent VOCs that are migrating onto the Site from the adjoining upgradient Church property. Sampling will also be performed to assess the historic fill. Other potential areas of concern at the Site, including the former pump island, former tank field, identified UST, and areas of soil staining, were previously investigated during the 2002 Environmental Site Assessment, as detailed in Section 2.1. Although low levels of petroleum impact were identified in groundwater at one location (TW-06) in proximity to a former pump island, none of the other soil or groundwater sampling locations in proximity to the former tank field, UST, or pump island showed indications of petroleum impact. Soil sampling in the area of staining, a storm drain, and an exterior fenced area did not show exceedances of applicable criteria except for one SVOC detection in a surficial stained area (SB-08). This detection (chrysene at 1.321 mg/kg), although it exceeds the 6 NYCRR Part 375 unrestricted use SCO of 1 mg/kg, does not exceed the restricted residential SCO of 3.9 mg/kg and, in the absence of other exceedances of unrestricted use SCOs, does not indicate a significant concern. In summary, these areas of concern were previously investigated and no significant concerns were identified.

The proposed RI sampling locations are shown on Figure 3.1.1. The scope of work includes the following components:

- Soil sampling will be conducted at six onsite and one offsite locations. Onsite soil samples will be tested to further evaluate the nature and extent of solvent VOC contamination impacting the Site soils and to assess the nature of historic fill. The stratigraphic information from the soil borings will also be utilized to further characterize Site stratigraphy, including historic fill;

- Six well clusters will be installed onsite to define the vertical and lateral extent of groundwater contamination migrating onsite from the adjoining Church property. Four of the clusters will be installed on Lot 24 and two on Lot 14. The well clusters will each include one well screened within the shallow sand unit and one well screened in the intermediate sand unit above the deep clay unit. These wells will be used to evaluate groundwater conditions and flow direction;

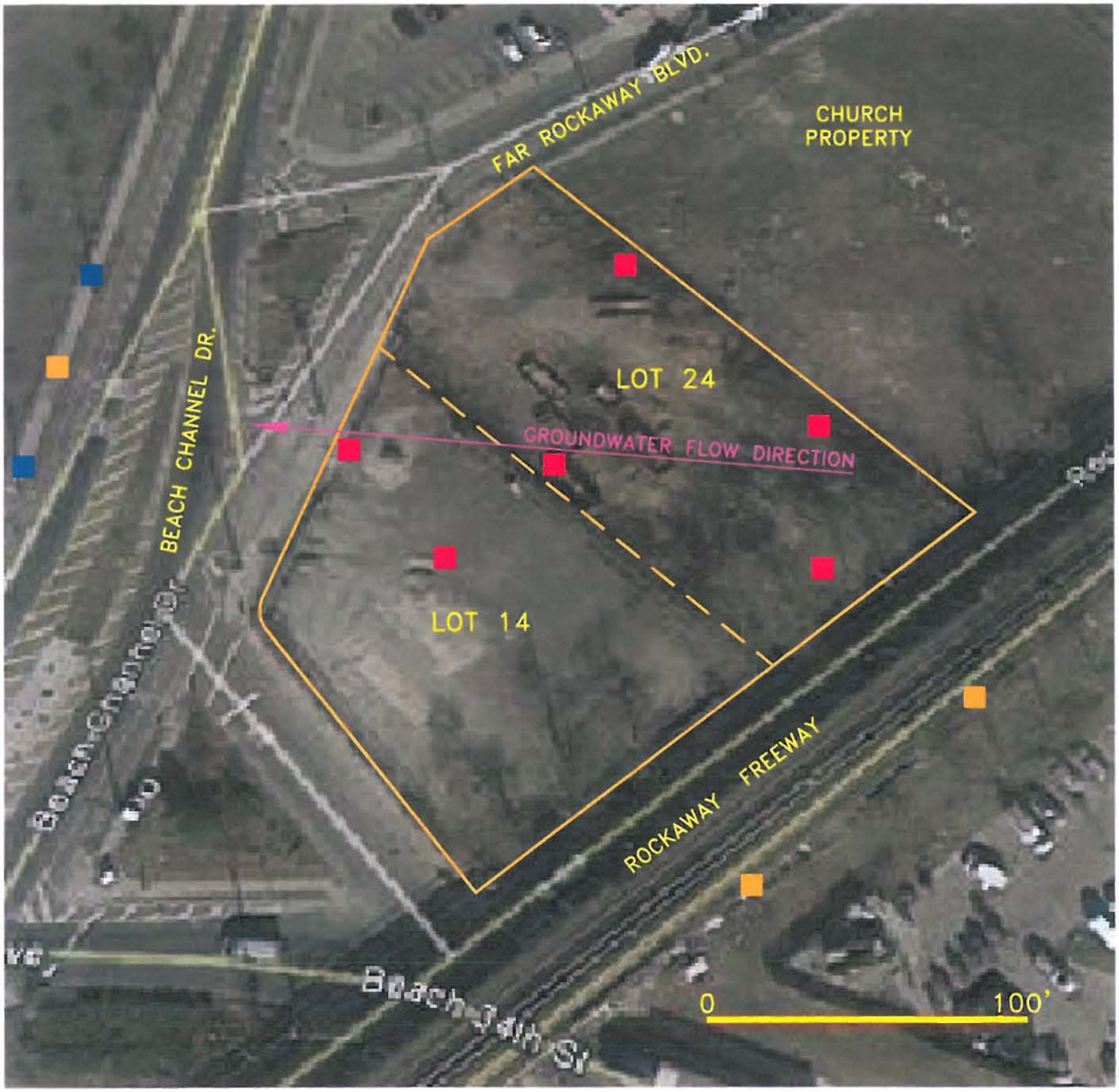
- Three well clusters will be installed offsite, across Beach Channel Drive, in the same manner as described above to assess the vertical and lateral extent of groundwater impacts extending to the west-northwest of the Site;

- One soil vapor sampling point will be installed offsite to the west-northwest of the Site to assess potential offsite vapor impacts in the direction of plume migration. Two soil vapor sampling points will be installed to be southeast of the Site to assess potential offsite vapor impacts. No onsite soil vapor sampling is planned as the existing data from 2012 document the existence of onsite soil vapor impacts. As noted above, there are presently no buildings onsite. In the event that a building is planned, evaluation of soil vapor impacts and the potential need for monitoring or mitigation will be assessed at that time; and

- A Qualitative Human Health Exposure Assessment will be performed, as described in DER-10, to identify the areas and chemicals of concern, actual or potential exposure pathways, potentially exposed receptors, and how any unacceptable exposures might be eliminated/mitigated.

3.2 Sampling Procedures

A site plan showing the proposed RI sampling locations is presented in Figure 3.1.1. The procedures for each type of sampling are described below. Quality assurance/quality control (QA/QC) procedures are presented in Section 4.



LEGEND:

- SHALLOW AND INTERMEDIATE-LEVEL WELLS WITH CONTINUOUS SOIL SAMPLING
- SHALLOW AND INTERMEDIATE-LEVEL WELLS
- SOIL VAPOR SAMPLE

FPM GROUP

FIGURE 3.1.1
SITE PLAN WITH PROPOSED RI SAMPLING LOCATIONS
34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

Drawn By: H.C.	Checked By: B.C.	Date: 4/1/13

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➢ Soil Sampling

Soil borings will be performed at six onsite locations and one offsite location utilizing direct-push sampling equipment. The soil borings will be performed to an approximate depth of 40 feet below grade and will penetrate into the top of the deep clay, if encountered. The samples will be obtained continuously, screened by an environmental professional with a calibrated PID, and classified using the Unified Soil Classification System (USCS). The soil sample locations will be identified using a GPS.

Samples will be collected from each boring and submitted for laboratory analysis. The samples retained for analysis will be collected as characterize historic fill (onsite only, 0 to 8 feet below grade), the shallow sand unit (8 to 15 feet below grade), and the shallow clay (15 to 20 feet below grade). Samples of the deep clay (estimated at 35 to 40 feet below grade) will also be retained from two borings closest to the source area on the Church property. Additional samples may be collected if necessary to vertically delineate any visible contamination or if intervals of significant visible contamination are noted. Upon completion of sampling, the sample containers shall be sealed, labeled, managed, transported, and tracked as described in Section 3.3. The borings shall be backfilled with soil cuttings and sand.

As historic fill is present onsite, the pertinent portions of DER-10, Section 3.11 will apply. The vertical limits and physical characteristics of the historic fill will be documented on the boring logs. As historic fill is understood to be ubiquitous in the vicinity of the Site (see Section 1.2 and Figure B in Appendix A), perimeter borings are not planned. The six planned borings on the 0.85 acre Site exceed the DER-10 requirement of a minimum of four borings per acre. The proposed analyses (discussed below) address DER-10, Section 3.11 requirements. Analysis for total petroleum hydrocarbons (TPH) is not contemplated, as the fill samples will be analyzed for VOCs and SVOCs and the NYSDEC has not established a soil cleanup objective for TPH.

➢ Well Installation and Surveying Procedures

The proposed monitoring wells will be installed by a licensed well driller. An FPM environmental professional will observe the well installation and prepare a boring log/well installation diagram to document the subsurface conditions. The monitoring well locations will be identified using a GPS.

It is anticipated that each shallow well will include a two-inch diameter 0.02-inch machine-slotted PVC screen approximately 10 feet long installed to a depth of approximately 15 feet below grade. The annulus will be backfilled with Morie #1 well gravel, or equivalent, to approximately two feet above the top of the screen with an overlying two-foot bentonite seal, and the balance will be backfilled with bentonite or cement bentonite grout. The top of the well casing will be capped with an expansion-fit locking well cap and the casing will be protected with a bolt-down flush-mounted manhole cover or standpipe set in concrete.

The monitoring wells installed in the intermediate sand will be installed in the same manner as the shallow wells with the exception that a five-foot section of slotted screen will be utilized and set at depth of approximately 35 to 40 feet below grade. The depths of these wells will be modified as necessary such that the wells do not penetrate the deep clay.

The wells will be installed in two stages. The onsite wells will be installed during the first stage so as to confirm the groundwater flow direction and ensure the proper placement of the offsite well clusters, which will be installed during the second stage. Following installation, the wells will be developed by pumping and surging until the produced groundwater is clear (turbidity less than 50 NTU) and the parameters pH, temperature, and conductivity vary by less than 10 percent between removals of successive casing volumes of groundwater.

Following each stage of well installation, a survey will be performed in which the elevation of the top of the PVC casing for each well will be determined to the nearest 0.01 foot The static water levels for each of the Site wells will be measured and used in conjunction with the surveyed well casing elevations to calculate the Site-specific groundwater flow direction.

➢ Groundwater Sampling

Groundwater sampling shall be performed during a single event after both stages of well installation are complete. At each well the depth to the static water level and depth of the well will be measured with an interface probe. The potential presence of non-aqueous-phase liquid (NAPL) will also be assessed. Then a decontaminated submersible pump will be used to purge the well until the turbidity of the produced water is less than 50 NTU or until five well volumes of water have been purged. Following the removal of each well volume, field parameters, including pH, turbidity, specific conductivity, and temperature, will be monitored. When all stability parameters vary by less than 10 percent between the removal of successive well volumes, the well will be sampled. Well sampling forms documenting the well purging and sampling procedures will be completed.

Following purging, sampling will be performed. Samples will be obtained using dedicated disposable polyethylene bailers suspended from dedicated cotton or polypropylene lines. The retrieved samples will be decanted into laboratory-supplied sample containers. Upon completion of sampling, the sample containers shall be sealed, labeled, managed, transported, and tracked as described in Section 3.3.

➢ Soil Vapor Sampling

Soil vapor sampling will be performed at three offsite locations, as shown on Figure 3.1.1. At each location a direct-push rig will be used to install a temporary vapor sampling point to a depth of approximately five feet below the grade (estimated to be above the water table and nearly equivalent to the base of the nearby residence foundations). A bentonite seal will be placed so as to seal the sampling point from the surrounding atmosphere. Following installation, three to five volumes of air shall be purged through the polyethylene tubing using an air pump so as to ensure that a representative sample is obtained. To confirm the integrity of the bentonite seal a helium tracer gas will be confined over the surface seal and the potential presence of helium in the polyethylene tubing will be checked with a helium meter. Following purging and the seal integrity check, the soil vapor sample shall be collected into a laboratory-supplied Summa canister equipped with a calibrated flow controller. The flow controller will be set so as not to exceed 0.2 liters per minute. FPM shall observe the flow controller and shall seal the canister while some vacuum remains. Upon completion of sampling, the canister shall be sealed, labeled, managed, transported, and tracked as described in Section 3.3. The soil vapor sample locations will be identified using a GPS.

3.3 Sample Management and Analyses

Each sample container will be labeled, and the labeled containers containing soil or groundwater samples will be placed in a cooler with ice to depress the sample temperature. The filled labeled Summa canisters shall be secured in shipping containers. A chain of custody form will be completed and kept with the coolers and shipping containers to document the sequence of sample possession. At the end of each day, the filled coolers and shipping containers will be transported by FPM or overnight courier to the analytical laboratory.

The anticipated analytical laboratory for soil and groundwater samples is TestAmerica of Edison, New Jersey. TestAmerica is a NYSDOH ELAP-certified laboratory. The soil samples will be analyzed for TCL VOCs using EPA Method 5035/5035A and 8260B and the groundwater samples will analyzed for TCL VOCs using EPA Method 8260B The onsite fill soil samples will also be analyzed for base-neutral semivolatile organic compounds, Target Analyte List (TAL) metals, and polychlorinated biphenyls (PCBs). The analytical methods used will be as per NYS Analytical Services Protocol (ASP) with Category B deliverables. Electronic data deliverables (EDDs) will be prepared and uploaded into the NYSDEC's environmental information management system.

The anticipated analytical laboratory for soil vapor samples is Centek Laboratories of Syracuse, New York. Centek Laboratories is a NYSDOH ELAP-certified laboratory. The soil vapor samples will be analyzed for VOCs using Method TO-15. The analytical methods used will be as per NYS ASP with Category B-equivalent deliverables. EDDs will also be prepared and uploaded into the NYSDEC's environmental information management system.

Additional details concerning sampling, analysis, and QA/QC is provided in the Quality Assurance Project Plan presented in Section 4.

3.4 Management of Investigation-Derived Waste

3.4.1 Soil Cuttings

Soil cuttings are not anticipated to be generated during well installation as this activity will be conducted using direct-push techniques that do not generate soil cuttings. Soil cuttings may be generated during the onsite soil borings. In the event that soil cuttings are generated, they will be managed in accordance with DER-10, Section 3.3(e).

3.4.2 Well Development and Purge Water

All groundwater generated during well development and purging will be containerized. The containers will be staged onsite in a designated area. The containerized groundwater will be examined by the QEP for visual and olfactory indications of contamination and, if free of indications of potential contamination, will be tested for VOCs. If VOCs are not found at levels in excess of the NYSDEC Standards, the water will be recharged to unpaved ground in a manner that does not result in surface water runoff.

If visible contamination is observed or VOC levels are in excess of NYSDEC Standards, the containerized groundwater will be disposed offsite, as described below.

3.4.3 Waste Disposal

Any soil cuttings that are generated and cannot be managed onsite in accordance with DER-10, soil cuttings that exhibit indications of potential contamination, and groundwater that exhibits indications of potential contamination or exceeds NYSDEC Standards will be transported by a licensed waste transporter and properly disposed offsite at permitted waste disposal facilities. Waste transport and disposal shall be documented with manifests, copies of which shall be included in the RI Report. Dedicated disposable investigation equipment (gloves, etc.) shall be containerized and properly disposed offsite as solid waste.

3.5 Exposure Assessment

A qualitative human health exposure basement will be performed during the RI in accordance NYSDEC DER-10 Section 3.3(c)4 to identify the areas and chemicals of concern, actual or potential exposure pathways, potentially exposed receptors, and how any unacceptable exposures might be eliminated/mitigated. The five exposure pathway elements that will be examined include:

- Descriptions of the contaminants and affected media;
- An explanation of the contaminant release and transport mechanisms to the potentially exposed population;
- Identification of potential exposure points where the potential for human contact with contaminated media may occur;
- A description of routes of exposure (i.e., ingestion , inhalation, dermal contact); and
- A characterization of the receptor population that may be exposed to contaminants at a point of exposure.

3.6 Reporting and Schedule

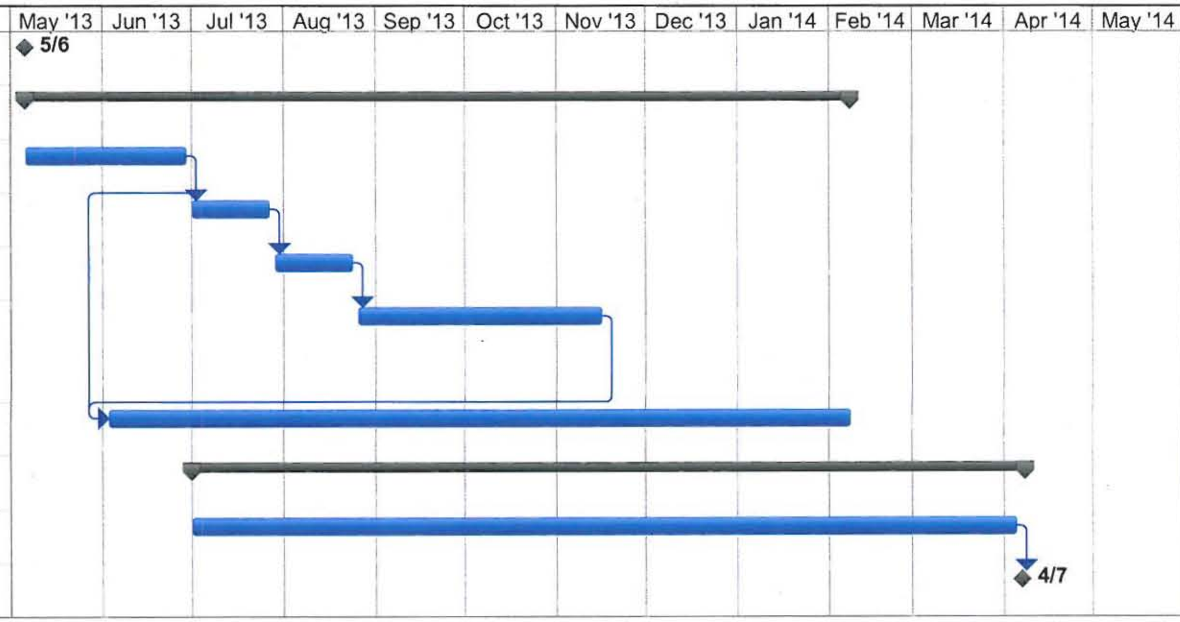
The proposed schedule for the RI is shown in Figure 3.6.1.

Following the completion of the RI sampling activities, the receipt of all sample results, and preparation of the qualitative human health exposure assessment, FPM will prepare an RI Report. The RI Report will be prepared in accordance with NYSDEC DER-10 Section 3.14. The report will include an updated site plan, a summary of the work performed, the resulting chemical analytical data, an interpretation of the data, the qualitative exposure assessment, and conclusions. Copies of all field logs, the complete laboratory analytical packages, and the Data Usability Summary Reports (DUSRs) will be provided separately from the RI Report as an electronic submission, in accordance with DER-10 Section 3.14(b).

In accordance with 6 NYCRR Part 375-2, the soil data shall be evaluated with respect to the NYSDEC Objectives for unrestricted use (Table 375-6(a)). However, as the Site is zoned as a commercial property with multi-family residential uses, the soil data shall also be compared to the NYSDEC Objectives for commercial and restricted residential uses (Table 375-6(b)). Groundwater data shall be compared to the NYSDEC Class GA Ambient Water Quality

FIGURE 3.6.1
RI SCHEDULE
34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, QUEENS, NEW YORK

ID	Task Name
1	NYSDEC approval of RI Work Plan
2	**RI Work**
3	Install onsite wells and soil borings
4	Survey/confirm groundwater flow direction
5	Obtain NYCDOT Permits for offsite well installation
6	Install offsite wells and soil borings, conduct groundwater and soil vapor sampling
7	Laboratory analyses and DUSR preparation
8	**RI Report**
9	Prepare RI Report
10	Submit RI Report to NYSDEC



Project: RI Schedule
Date: Wed 4/3/13

Task	External Milestone	Manual Summary Rollup
Split	Inactive Task	Manual Summary
Milestone	Inactive Milestone	Start-only
Summary	Inactive Summary	Finish-only
Project Summary	Manual Task	Progress
External Tasks	Duration-only	Deadline

Standards. A further discussion of standards, criteria and guidance (SCGs) is included in Section 4.

Monthly progress reports will be prepared and submitted to the NYSDEC and NYSDOH during the above-described RI work. The monthly progress reports shall include information regarding activities conducted during the reporting period, activities planned for the next reporting period, a summary of any sampling results and community monitoring results, any changes to the schedule, any problems encountered, and other pertinent project information.

SECTION 4.0
QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan (QAPP) is applicable to all RI activities at this Site. The RI work is intended to assess the current areal and vertical extent of soil and groundwater impacts onsite and to evaluate downgradient offsite groundwater and soil vapor conditions.

The RI will be performed by FPM on behalf of the Site owners, Alprof Realty LLC and VFP Realty LLC. The FPM project manager is Ben Cancemi, CPG. Additional project personnel are identified on Table 3.1. Resumes for project personnel are included in Appendix B.

Sampling procedures are presented in Section 3.2 and sample management is presented in Section 3.3 of this RI Work Plan. A site map showing sample locations is presented on Figure 3.2.1. Table 4.1 presents a summary of the analytical methods and the QA/QC sample program. QA/QC samples are further discussed below.

4.1 Data Quality Objectives

The Data Quality Objectives (DQOs) will be applicable to all data-gathering activities at the Site. DQOs will be incorporated into sampling, analysis, and quality assurance tasks associated with SC activities.

The data users for this project are FPM, the NYSDEC, and the NYSDOH. The Site owners will also be provided with the data. No other data users are anticipated. The collected data are intended to further evaluate the nature and extent of VOCs in onsite and offsite groundwater and soil and VOCs in downgradient offsite soil vapor. Metals and semivolatile organic compounds (SVOCs) will also be evaluated in the onsite historic fill.

For this project, field screening will be performed during sampling activities. Field screening includes monitoring for organic vapors in the soil cuttings if they are generated by a direct push rig and in the air in the work zone using a Photovac MicroTIP PID (or equivalent) and visual observations of soil or groundwater characteristics. All readings and observations will be recorded by the FPM QEP in his or her field notebook.

4.2 Standards, Criteria, and Guidance

The following standards, criteria, and guidance (SCGs) have been identified for the Site:

- The 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives, which are used to evaluate soil sample results;
- The NYSDEC Class GA Ambient Water Quality Standards (1998), which are used to evaluate the groundwater chemical analytical results;
- The 6 NYCRR Parts 370, 371, and 372 regulations for hazardous waste management, which are used to guide hazardous waste characterization and disposal; and

TABLE 4.1
REMEDIAL INVESTIGATION SAMPLING MATRIX
34-11 BEACH CHANNEL DRIVE SITE
FAR ROCKAWAY, NEW YORK

Sample Location/ Type	Matrix	Sample Depths (feet below grade)	Number/ Frequency	Preparation and Analysis	Sample Bottles/Preservation	Holding Time
Monitoring Wells, Shallow - MW-1S through MW-9S, Deep - MW-1D through MW-9D	Groundwater	5 to15 for Shallow Wells, 35 to 40 for Deep Wells	18/once	TCL VOCs (Methods 5030B/ 8260B)	Two 40 ml glass VOA vials with HCL	14 days
Soil Samples RI B-1 through RI B-9	Soil	Variable, depending on stratigraphy. Generally 0 to 8 (onsite fill only), 8 to 15, and 15 to 20 feet. Select borings 35 to 40 feet.	27/once	TCL VOCs - All samples (Method 5035/5035a and 8260B)	One Glass VOA Vial with MEOH Two Glass VOA vials with water One 2 oz CWM glass	Frozen within 48 hours of collection, 14 days until analysis
			6 fill/once	BN-TCL SVOCs, TAL Metals, and PCBs (Methods 3541/ 8270C, 3050B/6010B, 8082A, and 7470A/7241A)	One 4 oz CWM glass	SVOCs and PCBs: 7 days until extraction, 40 days after extraction, Metals: 28 days
Soil Vapor Sample (SV-1 through SV-3)	Soil Vapor	5 feet	3/once	VOCs (method TO-15)	One Summa Canister	30 days
Equipment blanks	Lab water	-	One per day per matrix	BN-TCL SVOCs, PCBs	1-liter amber glass	7 days until extraction, 40 days after extraction
	Lab water	-	One per day per matrix	TAL metals	500 ml plastic w/HNO3	28 days
	Lab water	-	One per day per matrix	TCL VOCs (Methods 5030B/ 8260B)	Two glass VOA vials with HCL	14 days
Trip blanks	Lab water	-	One per cooler	TCL VOCs (Method 8260B)	Two glass VOA vials with HCL	14 days
	Lab Air	-	One per shipment	VOCs (Method TO-15)	One Summa Canister	30 days
Blind duplicates	Groundwater	Same as associated primary samples	One per 20 primary samples	TCL VOCs (Methods 5030B/ 8260B)	Two 40 ml glass VOA vials with HCL	14 days
	Soil Vapor		One per 20 primary samples	VOCs (Method TO-15)	One Summa Canister	30 days
	Soil		One per 20 primary samples	TCL VOCs - All samples (Method 5035/5035a and 8260B)	One Glass VOA Vial with MEOH Two Glass VOA vials with water One 2 oz CWM glass	Frozen within 48 hours of collection, 14 days until analysis
	Soil		One per 20 primary samples	BN-TCL SVOCs, PCBs, and TAL Metals (Methods 3541/ 8270C, 3050B/6010B, 8082A, and 7470A/7241A)	One 4 oz CWM glass	SVOCs and PCBs: 7 days until extraction, 40 days after extraction, Metals: 28 days
MS/MSD	Groundwater	Same as associated primary sample	One per 20 primary samples	TCL VOCs (Methods 5030B/ 8260B)	Two 40 ml glass VOA vials with HCL	14 days
	Soil	Same as associated primary sample	One per 20 primary samples	TCL VOCs - All samples (Method 5035/5035a and 8260B)	One Glass VOA Vial with MEOH Two Glass VOA vials with water One 2 oz CWM glass	Frozen within 48 hours of collection, 14 days until analysis
	Soil/Groundwater	Same as primary samples	One per 20 primary samples	BN-TCL SVOCs, PCBs, and TAL Metals (Methods 3541/ 8270C, 3050B/6010B, 8082A, and 7470A/7241A)	One 4 oz CWM glass	SVOCs and PCBs: 7 days until extraction, 40 days after extraction, Metals: 28 days

Notes:

MS/MSD = Matrix spike/matrix spike duplicate
VOCs = Volatile organic compounds
HCL = hydrochloric acid

SVOCs = Semivolatile organic compounds
MEOH = Methanol
Hg = Mercury

CWM = clear wide-mouth
TCL = Target Compound List
TAL = Target Analyte List

PCBs = Polychlorinated biphenyls

- The NYSDOH *Final Guidance for Evacuating Soil Vapor Intrusion in the State of New York (October 2006).*

4.3 Quality Assurance/Quality Control Procedures

QA/QC procedures will be utilized during the performance of the RI field work to ensure that the resulting chemical analytical data accurately represent subsurface conditions. The following sections include descriptions of the QA/QC procedures to be utilized.

➢ Equipment Decontamination Procedures

All non-disposable downhole equipment (i.e., direct-push or drill rig rods) used during sampling activities will be decontaminated by washing in a potable water and Alconox solution and rinsing in potable water prior to use at each location to reduce the potential for cross contamination. All sampling equipment will be either dedicated disposable equipment or will be decontaminated prior to use at each location. The decontamination procedures utilized for all non-disposable sampling equipment will be as follows:

1. The equipment will be scrubbed in a bath of potable water and low-phosphate detergent followed by a potable water rinse;

2. The equipment will be rinsed with distilled water; and

3. The equipment will be allowed to air dry, if feasible, and wrapped in aluminum foil (shiny side out) for storage and transportation.

➢ QA/QC Samples

QA/QC samples will be collected and utilized to evaluate the potential for field or laboratory contamination and to evaluate the laboratory's analytical precision and accuracy. A sampling chart showing the number and types of primary samples, analytical methods, and QA/QC samples was presented on Table 4.1. The specific types of QA/QC samples to be collected are described below.

The decontamination procedures will be evaluated by the use of equipment blank samples. These samples consist of aliquots of laboratory-supplied water that are poured over or through the dedicated or decontaminated sampling equipment and then submitted to the laboratory for analysis. An equipment blank sample will be prepared for each matrix for each day that sampling is conducted at the Site and will be analyzed for the target constituents for that day. The equipment blanks will be labeled in a manner to prevent identification by the analytical laboratory.

Trip blank samples will be utilized to evaluate the potential for VOC cross-contamination between samples in the same cooler. Trip blank samples consist of laboratory-provided containers filled with laboratory water that are sealed in sample containers at the laboratory and that are transported to and in the field with the other sample containers. A trip blank will be shipped with each group of groundwater, soil and soil vapor samples and will be managed in the field and analyzed in the laboratory in the same manner as the primary environmental samples.

Blind duplicate samples will be obtained at a frequency of at least one per every 20 environmental samples per matrix and will be used to attest to the precision of the laboratory. A blind duplicate consists of a separate aliquot of sample collected at the same time, in the same manner, and analyzed for the same parameters as the primary environmental sample. The blind duplicate samples are labeled in a manner such that they cannot be identified by the laboratory. The sample results are compared to those of the primary environmental sample to evaluate if the results are similar.

Matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a frequency of one per 20 environmental samples per matrix. The purpose of the MS/MSD samples is to confirm the accuracy and precision of laboratory results based on a particular matrix. The MS/MSD results will be evaluated during the preparation of the DUSRs, as discussed below.

➢ Chain-of-Custody Procedures

For each day of sampling, chain-of-custody (COC) sheets will be completed and submitted to the laboratory with the samples collected that day. A copy of each COC sheet will be retained by the FPM QEP for sample tracking purposes. Each COC sheet will include the project name, the sampler's signature, the sampling locations and intervals, and the analytical parameters requested.

➢ Data Usability Summary Reports

All chemical analytical results will be evaluated using the sample data packages, sample data summary packages, and case narratives provided by the analytical laboratory. The data evaluation will be performed to verify that the analytical results are of sufficient quality to be relied upon to assess the potential presence of VOCs, SVOCs and/or metals in the groundwater, soil vapor, and/or soil samples. A DUSR shall be prepared for each data package following the "Guidance for the Development of Data Usability Summary Reports" provided by the NYSDEC (Appendix 2B of DER-10). The resume of the anticipated DUSR preparer, Richard Baldwin, CPG, who is independent from this project is included in Appendix B.

4.4 Sample Analysis

All samples will be submitted to NYSDOH ELAP-certified laboratories. The anticipated analytical laboratory for soil and groundwater samples is TestAmerica of Edison, New Jersey. The anticipated analytical laboratory for soil vapor samples is Centek Laboratories of Syracuse, New York. Analytical data will be provided by the laboratories in electronic format, in accordance with DER-10, Section 1.15.

The soil samples will be analyzed for TCL VOCs using EPA Method 5035/5035A and 8260B and the groundwater samples will analyzed for TCL VOCs using EPA Method 8260B. The onsite fill soil samples will also be analyzed for base-neutral TCL SVOCs and TAL metals. The analytical methods used will be as per NYS ASP with Category B deliverables. EDDs will be prepared and uploaded into the NYSDEC's environmental information management system.

The soil vapor samples will be analyzed for VOCs using Method TO-15. The analytical methods used will be as per NYS ASP with Category B-equivalent deliverables. EDDs will also be prepared and uploaded into the NYSDEC's environmental information management system.

4.5 Data Evaluation

The data collected will be assembled, reviewed, and evaluated following each sampling round. The groundwater and soil samples will be used to further assess the nature and extent of VOCs in the subsurface at and downgradient of the Site. Soil samples will also be utilized to characterize the nature of historic fill onsite. The soil vapor sample will be used to assess the potential presence of VOCs in offsite soil vapor downgradient of the Site.

4.6 Project Organization

The project manager and field supervisor for this project will be Ben Cancemi, CPG. Mr. Cancemi will also serve as the health and safety officer. The senior project manager and QA/QC officer will be Stephanie Davis, Senior Hydrogeologist. Resumes for project personnel are included in Appendix B. Subcontracted services will include direct-push/drilling services (subcontractor to be determined) and laboratory services (TestAmerica and Centek Laboratories).

SECTION 5.0
REFERENCES

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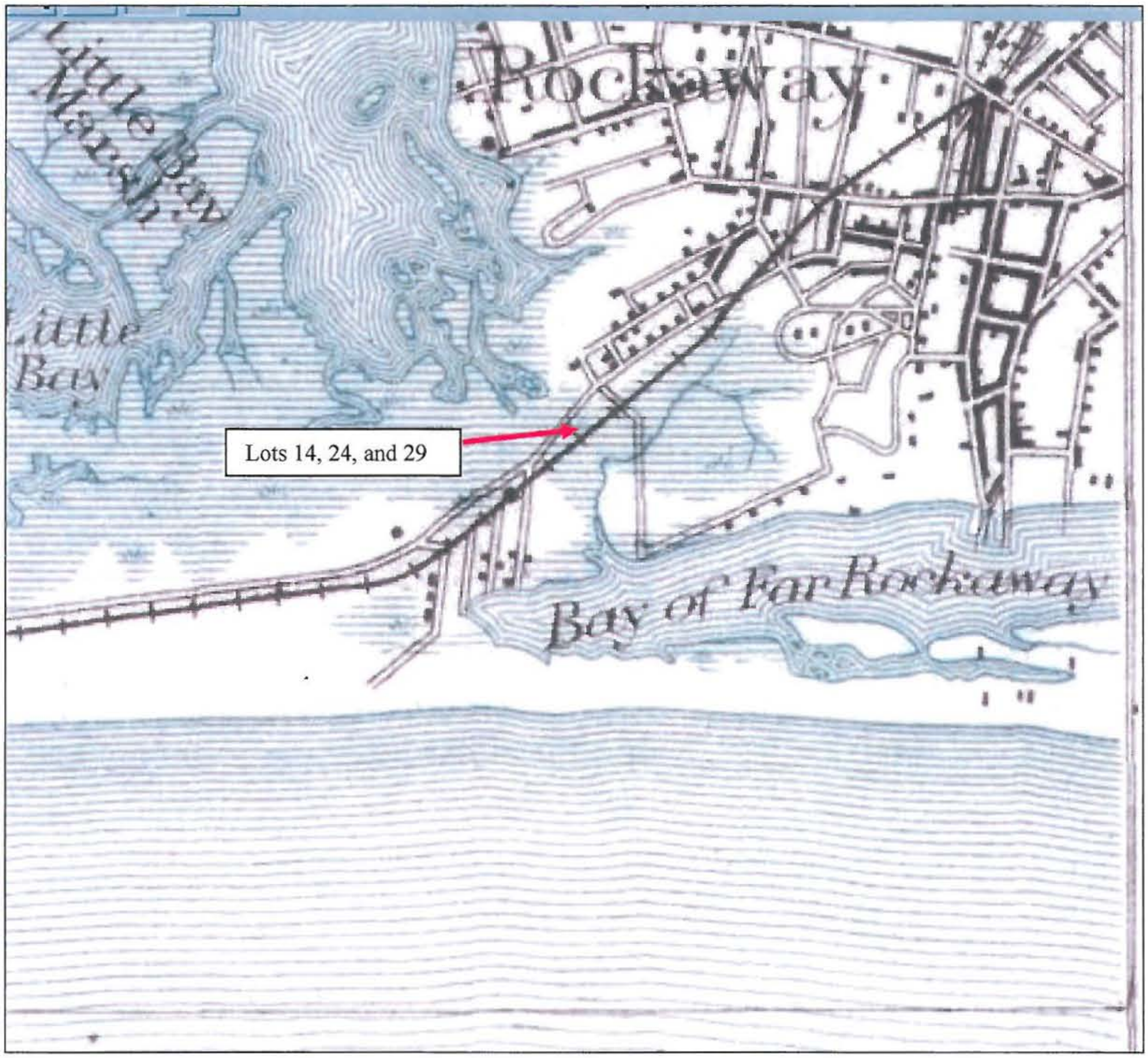
US Geological Survey. 1963. *Geology and Ground-Water Conditions in Southern Nassau and Southeastern Queens Counties, Long Island, N.Y.,.* USGS Water-Supply Paper 1613-A.

APPENDIX A

PREVIOUS INVESTIGATION DATA

Figure B



Source: US Geological Survey Brooklyn, NY Quadrangle, 1898 (surveyed 1888-1889)

2002 ENVIRONMENTAL
SITE ASSESSMENT DATA

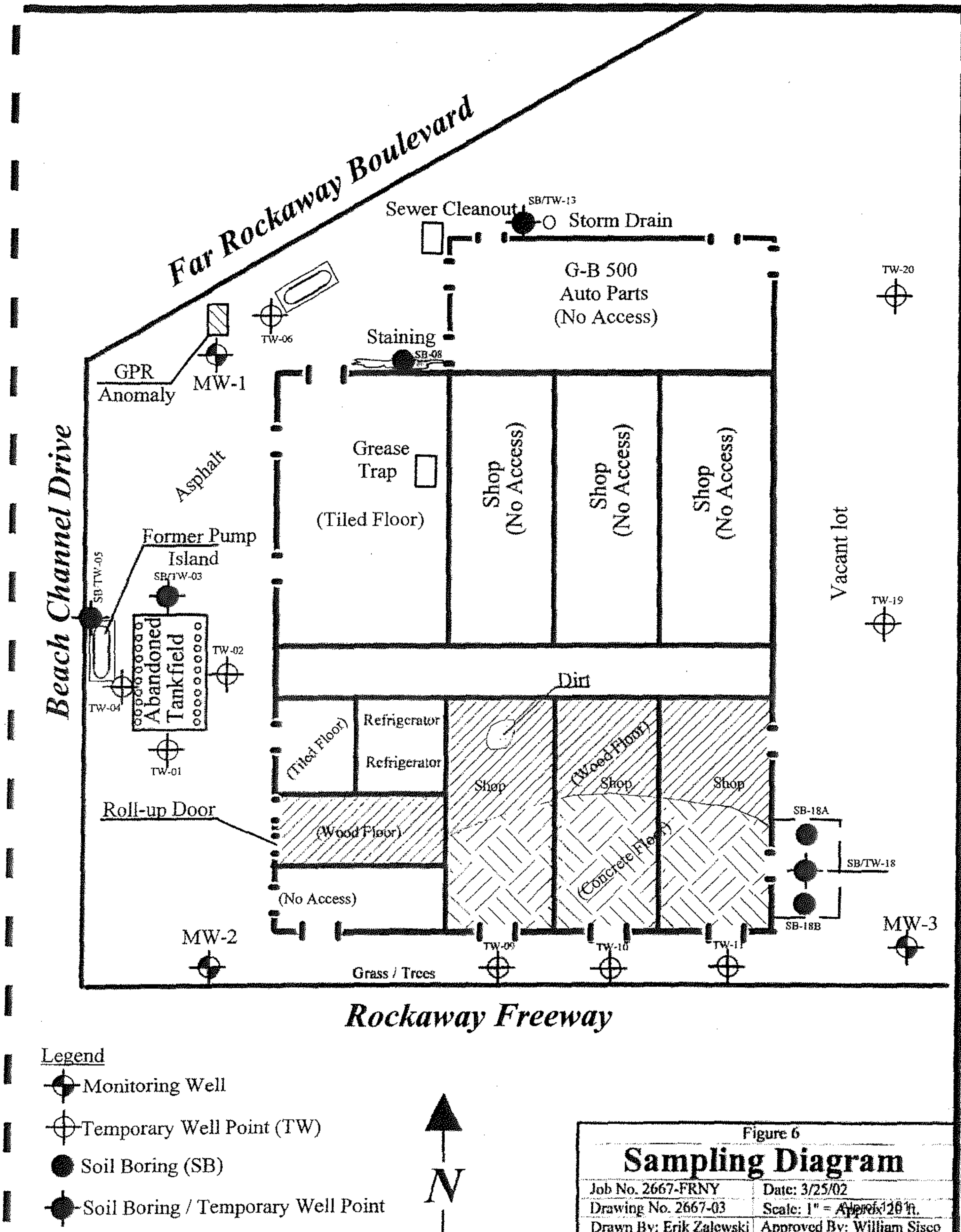


Figure 6

Sampling Diagram

Job No. 2667-FRNY	Date: 3/25/02
Drawing No. 2667-03	Scale: 1" = Approx. 20 ft.
Drawn By: Erik Zalewski	Approved By: William Sisco

Advanced Cleanup Technologies, Inc.

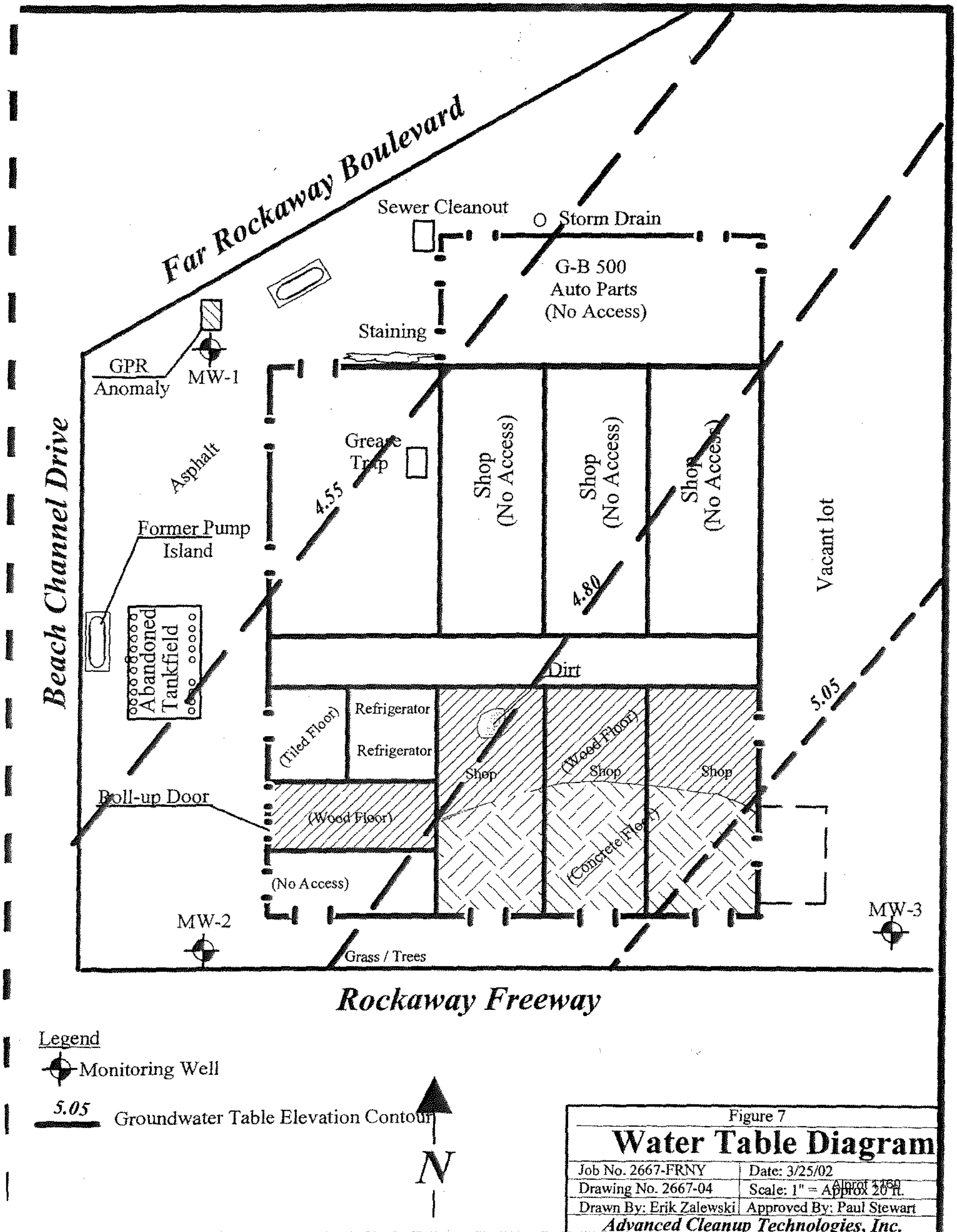


Figure 7

Water Table Diagram

Job No. 2667-FRNY	Date: 3/25/02
Drawing No. 2667-04	Scale: 1" = Approx 20 ft.
Drawn By: Erik Zalewski	Approved By: Paul Stewart

Advanced Cleanup Technologies, Inc.

TABLE 3
Volatile Organic Compounds in Groundwater (ug/L)
34-11 Rockaway Boulevard
Far Rockaway, New York

Sample ID Date	TW-02 03/08/02	TW-06 03/22/02	TW-10 03/11/02	TW-18 03/11/02	MW-01 03/12/02	MW-02 03/12/02	MW-03 03/12/02	NYSDEC STANDARD*
MTBE	<5	**34**	**23**	<5	<5	<5	<5	5
Benzene	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<5	0.7
n-Butylbenzene	<5	<5	<5	<5	<5	<5	<5	5
sec-Butylbenzene	<5	**8**	<5	<5	<5	<5	<5	5
tert-Butylbenzene	<5	<5	<5	<5	<5	<5	<5	5
Isopropyl Benzene	<5	**6**	<5	<5	<5	<5	<5	5
p-Isopropyltoulene	<5	<5	<5	<5	<5	<5	<5	5
n-Propylbenzene	<5	**9**	<5	<5	<5	<5	<5	5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	5
Naphthalene	<5	7	<5	<5	<5	<5	<5	10
Toluene	<5	<5	<5	<5	<5	<5	<5	5
1,2,4-Trimethylbenzene	<5	<5	<5	<5	<5	<5	<5	5
1,3,5-trimethylbenzene	<5	<5	<5	<5	<5	<5	<5	5
Total Xylenes	<15	<15	<15	<15	<15	<15	<15	5

* 6NYCRR Part 703.5

Bolded numbers signify exceedence of regulatory standards.

TABLE 4
Semi-Volatile Organic Compounds in Groundwater (ug/L)
34-11 Rockaway Boulevard
Far Rockaway, New York

Sample ID Date	TW-10 03/11/02	MW-02 03/12/02	NYSDEC STANDARD*
Naphthalene	<5	<5	10
Anthracene	<5	<5	50
Fluorene	<5	<5	50
Phenanthrene	<5	<5	50
Pyrene	<5	<5	50
Acenaphthene	<5	<5	20
Benzo(a)Anthracene	<5	<5	0.002
Fluoranthene	<5	<5	50
Benzo(b)Fluoranthene	<5	<5	0.002
Benzo(k)fluoranthene	<5	<5	0.002
Chrysene	<5	<5	0.002
Benzo(a)Pyrene	<5	<5	BDL
Benzo(g,h,i)Perylene	<5	<5	NR
Indeno (1,2,3-cd)Pyrene	<5	<5	0.002
Dibenzo(a,h)Anthracene	<5	<5	NR

* 6NYCRR Part 703.5
BDL: Below Detection Limits
NR: Not Regulated

Alprof 1172

TABLE 5
Heavy Metals in Groundwater (mg/L)
34-11 Rockaway Boulevard
Far Rockaway, New York

Sample ID Date	TW-10 03/11/02	MW-02 03/12/02	NYSDEC STANDARD*
Silver	<0.05	<0.05	0.05
Arsenic	0.12	0.21	0.025
Barium	0.30	<1.00	1.00
Cadmium	<0.05	<0.05	0.005
Chromium	1.00	0.43	0.05
Mercury	<0.002	<0.002	0.0007
Lead	0.20	2.31	0.025
Selenium	<0.05	<0.05	0.01

*NYS Water Quality Regulations, 6 NYCRR 703.5, March 18, 1998.

TABLE 6
Volatile Organic Compounds in Soil (ug/kg)
441 Eastern Parkway
Farmingdale, New York

Sample ID Depth (feet bgs) Date	SB-03 6 to 8 03/12/02	SB-18B 0 to 2 03/12/02	NYSDEC STANDARD*
MTBE	7	<5	120
Benzene	<5	<5	60
n-Butylbenzene	<5	<5	10,000
sec-Butylbenzene	<5	<5	10,000
tert-Butylbenzene	<5	<5	10,000
Isopropyl Benzene	<5	<5	2,300
p-Isopropyltoulene	<5	<5	10,000
n-Propylbenzene	<5	<5	3,700
Ethylbenzene	<5	<5	5,500
Naphthalene	<5	<5	13,000
Toluene	<5	<5	1,500
1,2,4-Trimethylbenzene	<5	<5	10,000
1,3,5-trimethylbenzene	<5	<5	3,300
Total Xylenes	<15	<15	1,200

* NYSDEC TAGM, HWR-94-4046, January 24, 1994.

Alprof 1174

TABLE 7
Semi-Volatile Organic Compounds in Soil (ug/kg)
34-11 Rockaway Boulevard
Far Rockaway, New York

Sample ID Depth (feet bgs) Date	SB-08 0 to 2 03/12/02	SB-13 0 to 4 03/12/02	SB-18B 0 to 2 03/12/02	NYSDEC STANDARD*
Naphthalene	985	<40	<40	13,000
Anthracene	<400	56	<40	50,000
Fluorene	<400	<40	<40	50,000
Phenanthrene	1,116	223	<40	50,000
Pyrene	2,226	296	<40	50,000
Acenaphthene	<400	<40	<40	50,000
Benzo(a)Anthracene	**851**	152	<40	224
Fluoranthene	967	364	<40	50,000
Benzo(b)Fluoranthene	<400	**195**	<40	61
Benzo(k)Fluoranthene	<400	134	<40	610
Chrysene	**1,321**	224	<40	400
Benzo(a)Pyrene	<400	**196**	<40	61
Benzo(g,h,i)Perylene	787	160	<40	50,000
Indeno(1,2,3-cd)Pyrene	<400	154	<40	3,200
Dibenzo(a,h)Anthracene	<400	**41**	<40	14.3

* NYSDEC TAGM, HWR-94-4046, January 24, 1994.

Bolded numbers signify exceedence of regulatory standards.

Table 8
Heavy Metals in Soil (mg/kg)
34-11 Rockaway Boulevard
Far Rockaway, New York

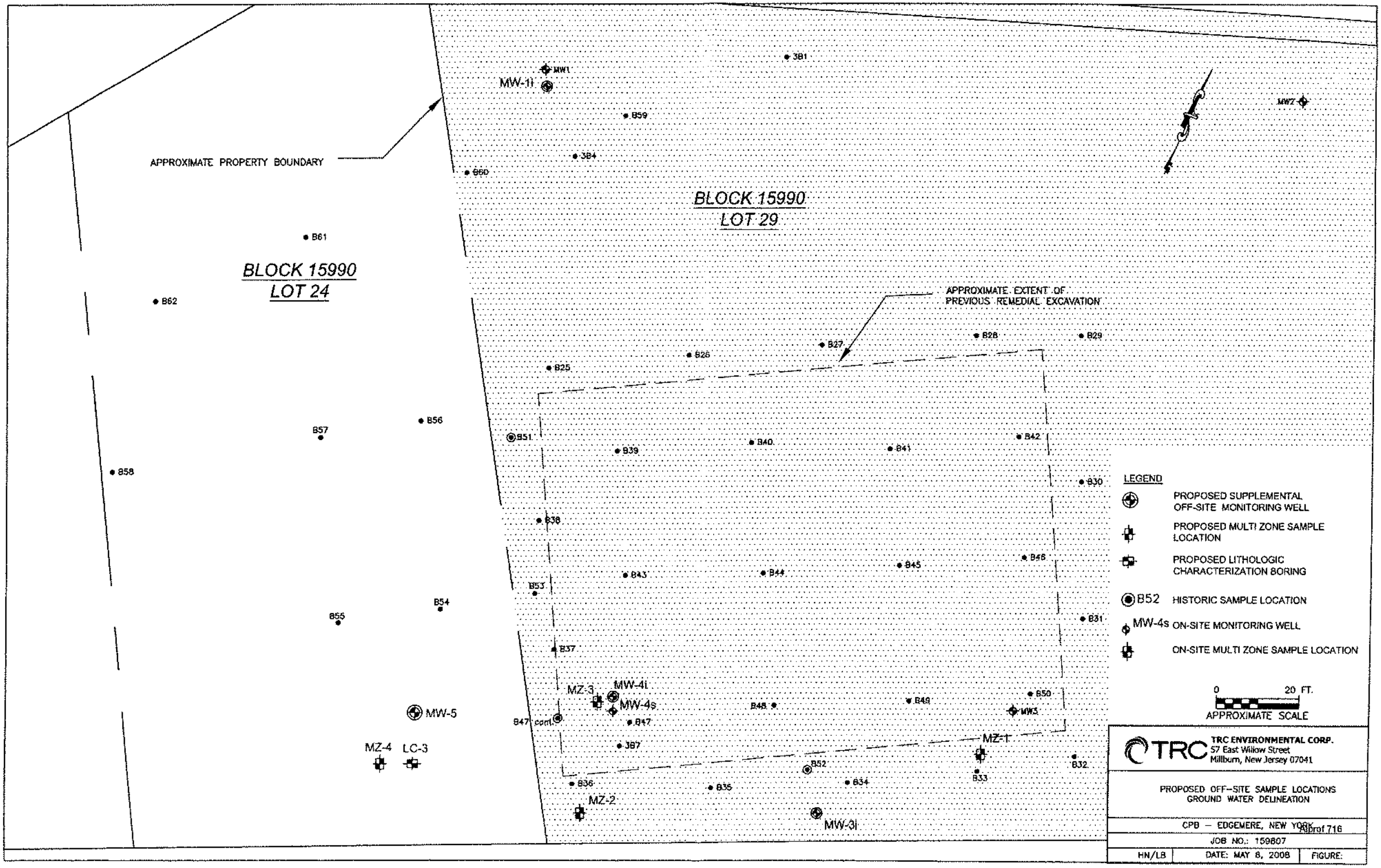
Sample ID Depth (feet bgs) Date	SB-13 0 to 4 03/12/02	SB-18B 0 to 2 03/12/02	EASTERN USA BACKGROUND*	NYSDEC STANDARD*
Silver	<1.65	<1.65	N/A	SB
Arsenic	<6.60	<6.60	3 to 12	7.5 or SB
Barium	30.0	8.9	15 to 600	300 or SB
Cadmium	<1.00	<1.00	0.1 to 1	1 or SB
Chromium	5.0	4.6	1.5 to 40	10 or SB
Mercury	0.04	<0.020	0.001 to 0.2	0.1
Lead	47.1	10.2	N/A	SB
Selenium	<1.65	<1.65	0.1 to 3.9	2 or SB

*NYSDEC TAGM, HWR-94-4046, January 24, 1994.

SB - Site Background

N/A - Not Available

2007 ENVIRONMENTAL INVESTIGATION DATA



APPROXIMATE PROPERTY BOUNDARY
BLOCK 15990
LOT 24
BLOCK 15990
LOT 29
APPROXIMATE EXTENT OF PREVIOUS REMEDIAL EXCAVATION
MW-1i
MW1
MW2
MW-5
MZ-4
LC-3
MZ-3
MW-4i
MW-4s
MZ-2
MW-3i
MZ-1
MW3
B25
B26
B27
B28
B29
B30
B31
B32
B33
B34
B35
B36
B37
B38
B39
B40
B41
B42
B43
B44
B45
B46
B47
B48
B49
B50
B51
B52
B53
B54
B55
B56
B57
B58
B59
B60
B61
B62
LEGEND
PROPOSED SUPPLEMENTAL OFF-SITE MONITORING WELL
PROPOSED MULTI ZONE SAMPLE LOCATION
PROPOSED LITHOLOGIC CHARACTERIZATION BORING
B52 HISTORIC SAMPLE LOCATION
MW-4s ON-SITE MONITORING WELL
ON-SITE MULTI ZONE SAMPLE LOCATION
0
20 FT.
APPROXIMATE SCALE
TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041
PROPOSED OFF-SITE SAMPLE LOCATIONS
GROUND WATER DELINEATION
CPB — EDGEMERE, NEW YORK
JOB NO.: 159807
HN/LB
DATE: MAY 8, 2008
FIGURE:

Table 1

LDS Vacant Property
Off-Site Groundwater Sampling Summary

Sample Date: January 25, 2007

Compound	B53 (ug/L)	B54 (ug/L)	B55 (ug/L)	B56 (ug/L)	B57 (ug/L)	B58 (ug/L)	B59 (ug/L)	B60 (ug/L)	B61 (ug/L)	B62 (ug/L)
Vinyl Chloride	**4800**	**2800**	**1700**	**100**	**650**	**	**19**	**	1	**
Methylene Chloride	**20**	**	**	**	**	**	**	**	**	**
1,1 Dichloroethene	**73**	**280**	**610**	**9**	**	**	2	**	**	**
t-1,2 Dichloroethene	**97**	**1200**	**	13	**540**	**	3	1	**	**
Trichloroethene	**650**	**	**	**48**	**	**	**	**	**	**
124 Trimethylbenzene	**39**	**	**	**	**	**	4	**	**	**
Xylenes	**22**	**	**	**	**	**	6	**	**	**
Naphthalene	**20**	**	**	**	**	**	**	**	**	**
Aceaphthene	2.2	**	**	**	**	**	**	**	**	**
Fluorene	1.7	**	**	**	**	**	**	**	**	**
Benzene	**	**	**35**	**3.5**	**35**	**	**	**	**	**
Carbon Disulfide	**	**	**	**	**	1	**	**	**	**

** = not detected

BOLD concentrations exceed NYSDEC groundwater standard

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.13 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:1005
MATRIX:Water SAMPLE: LDS-B54

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ug/L	< 50		02/01/07	50	EPA8260
1,3-Dichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Vinyl Chloride	ug/L	2800		02/01/07	50	EPA8260
Chloroethane	ug/L	< 50		02/01/07	50	EPA8260
Methylene Chloride	ug/L	< 50		02/01/07	50	EPA8260
Acetone	ug/L	< 500		02/01/07	500	EPA8260
Carbon disulfide	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,2 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethene	ug/L	280		02/01/07	50	EPA8260
Chloroform	ug/L	< 50		02/01/07	50	EPA8260
t-1,2-Dichloroethene	ug/L	1200		02/01/07	50	EPA8260
2-Butanone	ug/L	< 500		02/01/07	500	EPA8260
111 Trichloroethane	ug/L	< 50		02/01/07	50	EPA8260
Carbon Tetrachloride	ug/L	< 50		02/01/07	50	EPA8260
Freon 113	ug/L	< 50		02/01/07	50	EPA8260
123-Trichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Trichloroethene	ug/L	< 50		02/01/07	50	EPA8260
Chlorodibromomethane	ug/L	< 50		02/01/07	50	EPA8260
124-Trichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
Benzene	ug/L	< 35		02/01/07	35	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,3 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
4-Methyl-2-Pentanone	ug/L	< 500		02/01/07	500	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2413 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.13 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743

ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:1005

MATRIX:Water SAMPLE: LDS-B54

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Tetrachloroethene	ug/L	< 50		02/01/07	50	EPA8260
Toluene	ug/L	< 50		02/01/07	50	EPA8260
1122Tetrachloroethane	ug/L	< 50		02/01/07	50	EPA8260
Ethyl Benzene	ug/L	< 50		02/01/07	50	EPA8260
n-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
sec-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
Isopropylbenzene	ug/L	< 50		02/01/07	50	EPA8260
p-Isopropyltoluene	ug/L	< 50		02/01/07	50	EPA8260
ter.ButylMethylEther	ug/L	< 50		02/01/07	50	EPA8260
n-Propylbenzene	ug/L	< 50		02/01/07	50	EPA8260
124-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
135-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
o Xylene	ug/L	< 50		02/01/07	50	EPA8260
m + p Xylene	ug/L	< 100		02/01/07	100	EPA8260
Xylene	ug/L	< 150		02/01/07	150	EPA8260
tert-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2414 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.13 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:1005
MATRIX:Water SAMPLE: LDS-B54

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthylene	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthene	ug/L	< 1		01/31/07	1	EPA8270
Fluorene	ug/L	< 1		01/31/07	1	EPA8270
Phenanthrene	ug/L	< 1		01/31/07	1	EPA8270
Anthracene	ug/L	< 1		01/31/07	1	EPA8270
Fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Pyrene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Chrysene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		01/31/07	1	EPA8270
Benzoic acid	ug/L	< 10		01/31/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2415 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.12 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0945
MATRIX:Water SAMPLE: LDS-B55

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ug/L	< 50		02/01/07	50	EPA8260
1,3-Dichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Vinyl Chloride	ug/L	1700		02/01/07	50	EPA8260
Chloroethane	ug/L	< 50		02/01/07	50	EPA8260
Methylene Chloride	ug/L	< 50		02/01/07	50	EPA8260
Acetone	ug/L	< 500		02/01/07	500	EPA8260
Carbon disulfide	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,2 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethene	ug/L	< 50		02/01/07	50	EPA8260
Chloroform	ug/L	< 50		02/01/07	50	EPA8260
t-1,2-Dichloroethene	ug/L	610		02/01/07	50	EPA8260
2-Butanone	ug/L	< 500		02/01/07	500	EPA8260
111 Trichloroethane	ug/L	< 50		02/01/07	50	EPA8260
Carbon Tetrachloride	ug/L	< 50		02/01/07	50	EPA8260
Freon 113	ug/L	< 50		02/01/07	50	EPA8260
123-Trichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Trichloroethene	ug/L	< 50		02/01/07	50	EPA8260
Chlorodibromomethane	ug/L	< 50		02/01/07	50	EPA8260
124-Trichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
Benzene	ug/L	35		02/01/07	50	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,3 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
4-Methyl-2-Pentanone	ug/L	< 500		02/01/07	500	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2410 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.12 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743

ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0945
MATRIX:Water SAMPLE: LDS-B55

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Tetrachloroethene	ug/L	< 50		02/01/07	50	EPA8260
Toluene	ug/L	< 50		02/01/07	50	EPA8260
1122Tetrachloroethane	ug/L	< 50		02/01/07	50	EPA8260
Ethyl Benzene	ug/L	< 50		02/01/07	50	EPA8260
n-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
sec-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
Isopropylbenzene	ug/L	< 50		02/01/07	50	EPA8260
p-Isopropyltoluene	ug/L	< 50		02/01/07	50	EPA8260
ter.ButylMethylEther	ug/L	< 50		02/01/07	50	EPA8260
n-Propylbenzene	ug/L	< 50		02/01/07	50	EPA8260
124-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
135-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
o Xylene	ug/L	< 50		02/01/07	50	EPA8260
m + p Xylene	ug/L	< 100		02/01/07	100	EPA8260
Xylene	ug/L	< 150		02/01/07	150	EPA8260
tert-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2411 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.12 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0945
MATRIX:Water SAMPLE: LDS-B55

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 2		01/31/07	2	EPA8270
Acenaphthylene	ug/L	< 2		01/31/07	2	EPA8270
Acenaphthene	ug/L	< 2		01/31/07	2	EPA8270
Fluorene	ug/L	< 2		01/31/07	2	EPA8270
Phenanthrene	ug/L	< 2		01/31/07	2	EPA8270
Anthracene	ug/L	< 2		01/31/07	2	EPA8270
Fluoranthene	ug/L	< 2		01/31/07	2	EPA8270
Pyrene	ug/L	< 2		01/31/07	2	EPA8270
Benzo(a)anthracene	ug/L	< 2		01/31/07	2	EPA8270
Chrysene	ug/L	< 2		01/31/07	2	EPA8270
Benzo(b)fluoranthene	ug/L	< 2		01/31/07	2	EPA8270
Benzo(k)fluoranthene	ug/L	< 2		01/31/07	2	EPA8270
Benzo(a)pyrene	ug/L	< 2		01/31/07	2	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 2		01/31/07	2	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 2		01/31/07	2	EPA8270
Benzo(ghi)perylene	ug/L	< 2		01/31/07	2	EPA8270
Benzoic acid	ug/L	< 10		01/31/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR ____________

rn = 2412 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.11 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0925
MATRIX:Water SAMPLE: LDS-B56

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ug/L	< 5		02/01/07	5	EPA8260
1,3-Dichloropropane	ug/L	< 5		02/01/07	5	EPA8260
Vinyl Chloride	ug/L	100		02/01/07	5	EPA8260
Chloroethane	ug/L	< 5		02/01/07	5	EPA8260
Methylene Chloride	ug/L	< 5		02/01/07	5	EPA8260
Acetone	ug/L	< 50		02/01/07	50	EPA8260
Carbon disulfide	ug/L	< 5		02/01/07	5	EPA8260
1,1 Dichloroethane	ug/L	< 5		02/01/07	5	EPA8260
1,2 Dichloroethane	ug/L	< 5		02/01/07	5	EPA8260
1,1 Dichloroethene	ug/L	9		02/01/07	5	EPA8260
Chloroform	ug/L	< 5		02/01/07	5	EPA8260
t-1,2-Dichloroethene	ug/L	13		02/01/07	5	EPA8260
2-Butanone	ug/L	< 50		02/01/07	50	EPA8260
111 Trichloroethane	ug/L	< 5		02/01/07	5	EPA8260
Carbon Tetrachloride	ug/L	< 5		02/01/07	5	EPA8260
Freon 113	ug/L	< 5		02/01/07	5	EPA8260
123-Trichloropropane	ug/L	< 5		02/01/07	5	EPA8260
Trichloroethene	ug/L	48		02/01/07	5	EPA8260
Chlorodibromomethane	ug/L	< 5		02/01/07	5	EPA8260
124-Trichlorobenzene (v)	ug/L	< 5		02/01/07	5	EPA8260
Benzene	ug/L	3.5		02/01/07	3.5	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 5		02/01/07	5	EPA8260
1,3 Dichlorobenzene (v)	ug/L	< 5		02/01/07	5	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 5		02/01/07	5	EPA8260
4-Methyl-2-Pentanone	ug/L	< 50		02/01/07	50	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2407 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.11 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0925
MATRIX:Water SAMPLE: LDS-B56

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Tetrachloroethene	ug/L	< 5		02/01/07	5	EPA8260
Toluene	ug/L	< 5		02/01/07	5	EPA8260
1122Tetrachloroethane	ug/L	< 5		02/01/07	5	EPA8260
Ethyl Benzene	ug/L	< 5		02/01/07	5	EPA8260
n-Butylbenzene	ug/L	< 5		02/01/07	5	EPA8260
sec-Butylbenzene	ug/L	< 5		02/01/07	5	EPA8260
Isopropylbenzene	ug/L	< 5		02/01/07	5	EPA8260
p-Isopropyltoluene	ug/L	< 5		02/01/07	5	EPA8260
ter.ButylMethylEther	ug/L	< 5		02/01/07	5	EPA8260
n-Propylbenzene	ug/L	< 5		02/01/07	5	EPA8260
124-Trimethylbenzene	ug/L	< 5		02/01/07	5	EPA8260
135-Trimethylbenzene	ug/L	< 5		02/01/07	5	EPA8260
o Xylene	ug/L	< 5		02/01/07	5	EPA8260
m + p Xylene	ug/L	< 10		02/01/07	10	EPA8260
Xylene	ug/L	< 15		02/01/07	15	EPA8260
tert-Butylbenzene	ug/L	< 5		02/01/07	5	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2408 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.11 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743

ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0925
MATRIX:Water SAMPLE: LDS-B56

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthylene	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthene	ug/L	< 1		01/31/07	1	EPA8270
Fluorene	ug/L	< 1		01/31/07	1	EPA8270
Phenanthrene	ug/L	< 1		01/31/07	1	EPA8270
Anthracene	ug/L	< 1		01/31/07	1	EPA8270
Fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Pyrene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Chrysene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		01/31/07	1	EPA8270
Benzoic acid	ug/L	< 10		01/31/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2409 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.10 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0900
MATRIX:Water SAMPLE: LDS-B57

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ug/L	< 50		02/01/07	50	EPA8260
1,3-Dichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Vinyl Chloride	ug/L	650		02/01/07	50	EPA8260
Chloroethane	ug/L	< 50		02/01/07	50	EPA8260
Methylene Chloride	ug/L	< 50		02/01/07	50	EPA8260
Acetone	ug/L	< 500		02/01/07	500	EPA8260
Carbon disulfide	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,2 Dichloroethane	ug/L	< 50		02/01/07	50	EPA8260
1,1 Dichloroethene	ug/L	< 50		02/01/07	50	EPA8260
Chloroform	ug/L	< 50		02/01/07	50	EPA8260
t-1,2-Dichloroethene	ug/L	540		02/01/07	50	EPA8260
2-Butanone	ug/L	< 500		02/01/07	500	EPA8260
111 Trichloroethane	ug/L	< 50		02/01/07	50	EPA8260
Carbon Tetrachloride	ug/L	< 50		02/01/07	50	EPA8260
Freon 113	ug/L	< 50		02/01/07	50	EPA8260
123-Trichloropropane	ug/L	< 50		02/01/07	50	EPA8260
Trichloroethene	ug/L	< 50		02/01/07	50	EPA8260
Chlorodibromomethane	ug/L	< 50		02/01/07	50	EPA8260
124-Trichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
Benzene	ug/L	35		02/01/07	50	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,3 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 50		02/01/07	50	EPA8260
4-Methyl-2-Pentanone	ug/L	< 500		02/01/07	500	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR ____________

rn = 2404 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.10 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743

ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0900
MATRIX:Water SAMPLE: LDS-B57

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Tetrachloroethene	ug/L	< 50		02/01/07	50	EPA8260
Toluene	ug/L	< 50		02/01/07	50	EPA8260
1122Tetrachloroethane	ug/L	< 50		02/01/07	50	EPA8260
Ethyl Benzene	ug/L	< 50		02/01/07	50	EPA8260
n-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
sec-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260
Isopropylbenzene	ug/L	< 50		02/01/07	50	EPA8260
p-Isopropyltoluene	ug/L	< 50		02/01/07	50	EPA8260
ter.ButylMethylEther	ug/L	< 50		02/01/07	50	EPA8260
n-Propylbenzene	ug/L	< 50		02/01/07	50	EPA8260
124-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
135-Trimethylbenzene	ug/L	< 50		02/01/07	50	EPA8260
o Xylene	ug/L	< 50		02/01/07	50	EPA8260
m + p Xylene	ug/L	< 100		02/01/07	100	EPA8260
Xylene	ug/L	< 150		02/01/07	150	EPA8260
tert-Butylbenzene	ug/L	< 50		02/01/07	50	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2405 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.10 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0900
MATRIX:Water SAMPLE: LDS-B57

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthylene	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthene	ug/L	< 1		01/31/07	1	EPA8270
Fluorene	ug/L	< 1		01/31/07	1	EPA8270
Phenanthrene	ug/L	< 1		01/31/07	1	EPA8270
Anthracene	ug/L	< 1		01/31/07	1	EPA8270
Fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Pyrene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Chrysene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		01/31/07	1	EPA8270
Benzoic acid	ug/L	< 10		01/31/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2406 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.09 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0830
MATRIX:Water SAMPLE: LDS-B58

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ug/L	< 1		01/31/07	1	EPA8260
1,3-Dichloropropane	ug/L	< 1		01/31/07	1	EPA8260
Vinyl Chloride	ug/L	< 1		01/31/07	1	EPA8260
Chloroethane	ug/L	< 1		01/31/07	1	EPA8260
Methylene Chloride	ug/L	< 1		01/31/07	1	EPA8260
Acetone	ug/L	< 10		01/31/07	10	EPA8260
Carbon disulfide	ug/L	1		01/31/07	1	EPA8260
1,1 Dichloroethane	ug/L	< 1		01/31/07	1	EPA8260
1,2 Dichloroethane	ug/L	< 1		01/31/07	1	EPA8260
1,1 Dichloroethene	ug/L	< 1		01/31/07	1	EPA8260
Chloroform	ug/L	< 1		01/31/07	1	EPA8260
t-1,2-Dichloroethene	ug/L	< 1		01/31/07	1	EPA8260
2-Butanone	ug/L	< 10		01/31/07	10	EPA8260
111 Trichloroethane	ug/L	< 1		01/31/07	1	EPA8260
Carbon Tetrachloride	ug/L	< 1		01/31/07	1	EPA8260
Freon 113	ug/L	< 1		01/31/07	1	EPA8260
123-Trichloropropane	ug/L	< 1		01/31/07	1	EPA8260
Trichloroethene	ug/L	< 1		01/31/07	1	EPA8260
Chlorodibromomethane	ug/L	< 1		01/31/07	1	EPA8260
124-Trichlorobenzene (v)	ug/L	< 1		01/31/07	1	EPA8260
Benzene	ug/L	< 0.7		01/31/07	0.7	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 1		01/31/07	1	EPA8260
1,3 Dichlorobenzene (v)	ug/L	< 1		01/31/07	1	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 1		01/31/07	1	EPA8260
4-Methyl-2-Pentanone	ug/L	< 10		01/31/07	10	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2401 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.09 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0830
MATRIX:Water SAMPLE: LDS-B58

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Tetrachloroethene	ug/L	< 1		01/31/07	1	EPA8260
Toluene	ug/L	< 1		01/31/07	1	EPA8260
1122Tetrachloroethane	ug/L	< 1		01/31/07	1	EPA8260
Ethyl Benzene	ug/L	< 1		01/31/07	1	EPA8260
n-Butylbenzene	ug/L	< 1		01/31/07	1	EPA8260
sec-Butylbenzene	ug/L	< 1		01/31/07	1	EPA8260
Isopropylbenzene	ug/L	< 1		01/31/07	1	EPA8260
p-Isopropyltoluene	ug/L	< 1		01/31/07	1	EPA8260
ter.ButylMethylEther	ug/L	< 1		01/31/07	1	EPA8260
n-Propylbenzene	ug/L	< 1		01/31/07	1	EPA8260
124-Trimethylbenzene	ug/L	< 1		01/31/07	1	EPA8260
135-Trimethylbenzene	ug/L	< 1		01/31/07	1	EPA8260
o Xylene	ug/L	< 1		01/31/07	1	EPA8260
m + p Xylene	ug/L	< 2		01/31/07	2	EPA8260
Xylene	ug/L	< 3		01/31/07	3	EPA8260
tert-Butylbenzene	ug/L	< 1		01/31/07	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2402 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.270383.09 02/26/07

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743
ATTN: John Tegins PO#:

SOURCE OF SAMPLE: LDS-Far Rockaway, #02194
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:01/25/07 RECEIVED:01/25/07
TIME COL'D:0830
MATRIX:Water SAMPLE: LDS-B58

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthylene	ug/L	< 1		01/31/07	1	EPA8270
Acenaphthene	ug/L	< 1		01/31/07	1	EPA8270
Fluorene	ug/L	< 1		01/31/07	1	EPA8270
Phenanthrene	ug/L	< 1		01/31/07	1	EPA8270
Anthracene	ug/L	< 1		01/31/07	1	EPA8270
Fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Pyrene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Chrysene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		01/31/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		01/31/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		01/31/07	1	EPA8270
Benzoic acid	ug/L	< 10		01/31/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 2403 NYSDOH ID # 10320

2008 ENVIRONMENTAL INVESTIGATION DATA

TRC

57 East Willow Street
Millburn, NJ 07041

973.564.6006 PHONE
973.564.6442 FAX

www.TRCsolutions.com

December 16, 2008

Kirton & McConkie, P.C.
1800 Eagle Gate Tower
60 East South Temple
P.O. Box 45120
Salt Lake City, UT 84145

Attn: Loyal Hulme, Shareholder Chair

Re: *Off Site Investigation Results (Block 1599 Lot 24)*
CPB Edgmere
Edgemere, Queens, New York
TRC Job No. 159807

Dear Mr. Hulme:

This letter report is provided to you to detail the environmental work conducted by TRC at the lot adjacent to the CPB Site. The neighboring property is referred to as Block 1599, Lot 24. The following letter report will describe the work completed by TRC, and will provide results from analytical samples and geologic characterization conducted off-site.

NOVEMBER 2008 OFF-SITE INVESTIGATION

An off-site investigation was conducted during November and December 2008. This subsurface environmental quality investigation included:

- Advancing one test boring (MZ-4/LC-3) approximately 25 feet to the west of the CPB property boundary (Figure 1);
- Collection of deep clay sample from LC-3 for VOC and total organic carbon (TOC) laboratory analysis;
- Collection of shallow clay sample from LC-3 for TOC laboratory analysis
- Multi-zone ground water sampling and laboratory analysis for vertical ground water delineation at MZ-4;
- Installation and survey of one shallow (MW-5s) and one intermediate (MW-5i) ground water monitoring wells nearby the multi-zone test boring; and
- Ground water sampling and laboratory analysis from the new off-site wells.

Test Boring Results

SOIL DESCRIPTION

Fill was encountered from ground surface to a depth of approximately 5 feet below grade. Gray fine to coarse sand was encountered below the fill to a depth of approximately 16 feet below grade. A 7-foot gray to black organic clay layer was encountered below the sand layer. Under the shallow clay, a layer of gray fine to coarse sand was encountered to a depth of approximately 35 feet below grade. Dark gray clay was encountered below the intermediate sand layer. Appendix A includes the soil boring log (LC-3).

Laboratory analysis did not detect any of the targeted CVOC in the deep clay sample. The TOC for the shallow clay sample was 44,500 mg/kg, which correspond to fraction organic carbon (f_{oc}) of approximately 4.45%. A lower TOC of 6,880 mg/kg (f_{oc} of approximately 0.69%) was detected in the deep clay sample. Appendix B presents the analytical laboratory report.

GROUND WATER QUALITY

Ground water was encountered within the shallow sand layer at a depth of approximately 5 feet below grade. Ground water samples were collected from five depth intervals at the test boring as follows:

- Two samples above the shallow clay layer:
  - MZ-4-1 was collected near the top of the shallow sand layer (~7 feet below grade);
  - MZ-4-2 was collected near the bottom of the shallow sand layer immediately above the shallow clay layer (~ 16 feet below grade);
- Three samples below the shallow clay layer:
  - MZ-4-3 was collected near the top of the intermediate sand layer (~ 19 feet below grade);
  - MZ-4-4 was collected near the middle of the intermediate sand layer (~ 27 feet below grade); and
  - MZ-4-5 was collected at the bottom of the intermediate sand layer above the deep clay layer (~ 35 feet below grade).

Ground water geochemical field indicators were measured at the different zones during the sampling. Table I summarizes these field measurements.

The laboratory analysis of multi-zone ground water samples indicated the primary CVOC detected in the samples were TCE breakdown daughter products C-DCE, t-DCE, and VC. TCE was detected only in the ground water sample collected near the middle of the intermediate sand layer at a concentration of 2.5 µg/l. The highest concentrations were detected in ground water samples collected immediately above and below the shallow clay layer.

CVOC concentrations above the shallow clay ranged from 416.5 µg/l at near the top of the shallow zone (depth of 7 feet) to 9,572.9 µg/l at the bottom of the shallow zone near the shallow clay layer (depth of 16 feet). Dissolved CVOC concentrations within the intermediate layer decreased from 17,508.4 µg/l immediately below the shallow clay to 6.16 µg/l near the bottom above the deep clay layer. The total CVOC concentration for the sample near the middle of the intermediate layer was 718.9 µg/l. Appendix B presents the laboratory analytical results.

Monitoring Well Ground Water Sampling Results

Ground water samples were collected from monitoring wells MW-5s and MW-5i. The well construction logs for MW-5s and MW-5i are presented in Appendix A. Samples were analyzed for volatile organic compounds (VOC). The standard three well volume purge technique was used to collect the samples. Geochemical parameters were collected from each well before and after purging, and after collecting the samples. The geochemical parameter readings are presented in Table II.

Laboratory analysis indicated the presence of 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, Trichloroethene (TCE) and Vinyl Chloride. In the intermediate zone, TCE was detected at concentrations of 59.9 and 9,510 µg/L in wells MW-5s and MW-5i, respectively. Concentrations of cis-1,2-Dichloroethene were detected at 4,090 and 36,000 µg/L in MW-5s and MW-5i, respectively. Vinyl Chloride was detected at concentrations of 770 and 6,030 in MW-5s and MW-5i, respectively. The concentrations of the TCE breakdown daughter products cis-1,2-Dichloroethene and Vinyl Chloride indicates that biological degradation is most likely occurring in both zones. Appendix B presents the laboratory analytical results.

If you have any questions or need additional information, please call.

Very truly yours,

TRC ENVIRONMENTAL CORPORATION

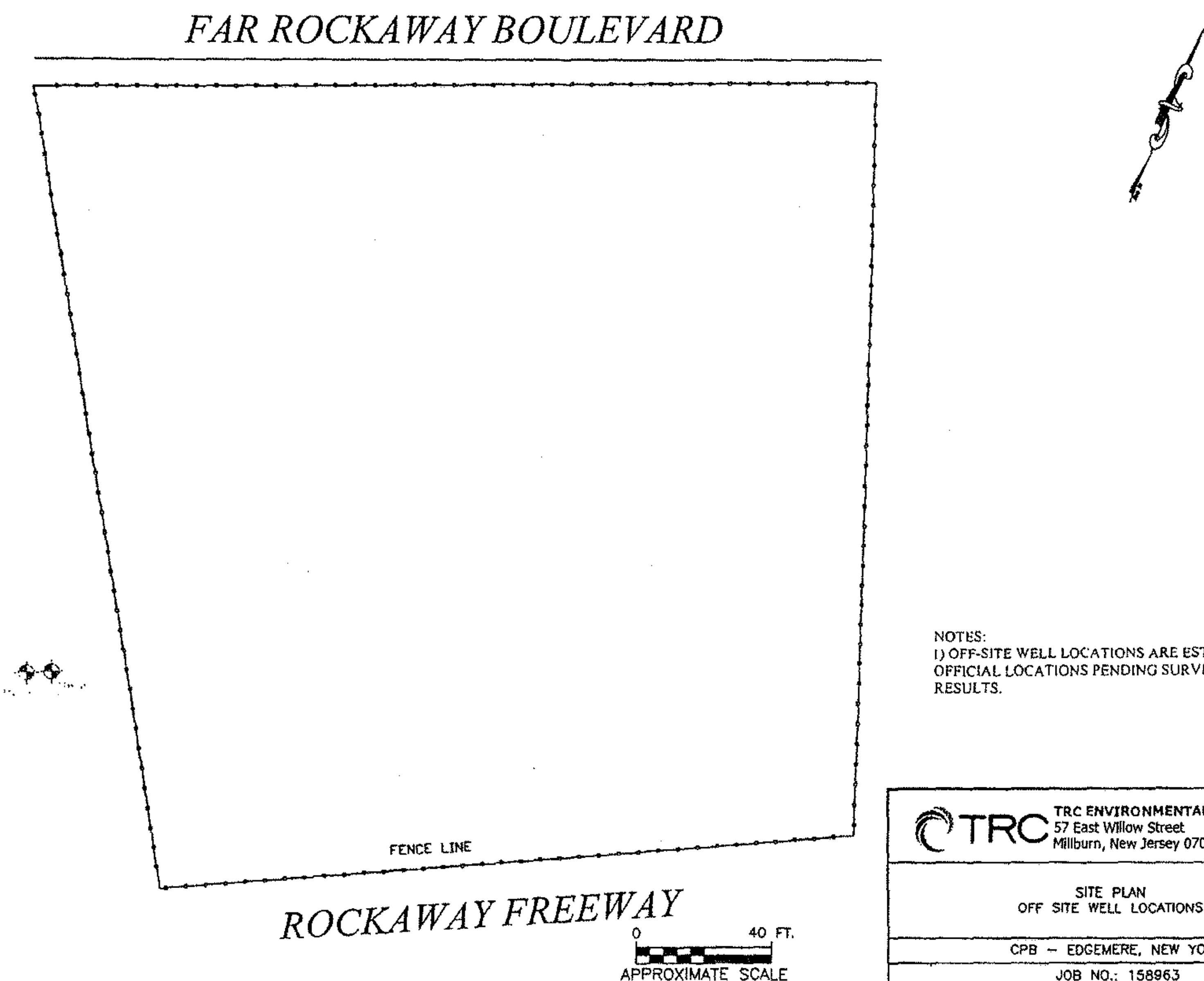
for HN

Howard Nichols, P.E.
Project Manager

L\LR-Off Site LH121208.doc

265

TRC



NOTES:
1) OFF-SITE WELL LOCATIONS ARE ESTIMATED. OFFICIAL LOCATIONS PENDING SURVEY RESULTS.

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

SITE PLAN
OFF SITE WELL LOCATIONS

CPB – EDGEMERE, NEW YORK

JOB NO.: 158963

HN	DATE: DECEMBER 10, 2008	FIGURE: 1

Y:\Cad Files\Vision projects\159807\Off Site Investigation\Off Site MW LAYOUT.dwg

Report of Analysis

Client Sample ID:	MW-5S		
Lab Sample ID:	JA6854-1	Date Sampled:	12/02/08
Matrix:	AQ - Ground Water	Date Received:	12/02/08
Method:	SW846 8260B	Percent Solids:	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E146500.D	25	12/08/08	TDN	n/a	n/a	VE6459
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
107-02-8	Acrolein	ND	1300	110	ug/l	
107-13-1	Acrylonitrile	ND	1300	31	ug/l	
71-43-2	Benzene	ND	25	6.5	ug/l	
75-27-4	Bromodichloromethane	ND	25	3.5	ug/l	
75-25-2	Bromoform	ND	100	4.6	ug/l	
74-83-9	Bromomethane	ND	50	7.9	ug/l	
56-23-5	Carbon tetrachloride	ND	25	4.4	ug/l	
108-90-7	Chlorobenzene	ND	25	4.8	ug/l	
75-00-3	Chloroethane	ND	25	5.5	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	250	25	ug/l	
67-66-3	Chloroform	ND	25	4.1	ug/l	
74-87-3	Chloromethane	ND	25	7.2	ug/l	
124-48-1	Dibromochloromethane	ND	25	4.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	25	4.6	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	25	6.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	25	5.5	ug/l	
75-71-8	Dichlorodifluoromethane	ND	130	22	ug/l	
75-34-3	1,1-Dichloroethane	ND	25	6.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	25	8.7	ug/l	
75-35-4	1,1-Dichloroethene	19.6	25	7.3	ug/l	J
156-59-2	cis-1,2-Dichloroethene	4090	25	6.2	ug/l	
156-60-5	trans-1,2-Dichloroethene	131	25	4.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	25	4.4	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	25	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	25	3.7	ug/l	
100-41-4	Ethylbenzene	ND	25	6.7	ug/l	
75-09-2	Methylene chloride	ND	50	4.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	25	3.3	ug/l	
127-18-4	Tetrachloroethene	ND	25	7.3	ug/l	
108-88-3	Toluene	ND	25	3.8	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	25	6.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	25	4.2	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5S		
Lab Sample ID:	JA6854-1	Date Sampled:	12/02/08
Matrix:	AQ - Ground Water	Date Received:	12/02/08
Method:	SW846 8260B	Percent Solids:	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

VOA PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	59.9	25	4.6	ug/l	
75-69-4	Trichlorofluoromethane	ND	130	6.2	ug/l	
75-01-4	Vinyl chloride	770	25	5.2	ug/l	
1330-20-7	Xylene (total)	ND	25	9.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		72-120%
17060-07-0	1,2-Dichloroethane-D4	96%		59-137%
2037-26-5	Toluene-D8	100%		73-116%
460-00-4	4-Bromofluorobenzene	115%		69-126%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5I		
Lab Sample ID:	JA6854-2	**Date Sampled:**	12/02/08
Matrix:	AQ - Ground Water	**Date Received:**	12/02/08
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A142139.D	200	12/06/08	TDN	n/a	n/a	VA5046
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
107-02-8	Acrolein	ND	10000	870	ug/l	
107-13-1	Acrylonitrile	ND	10000	250	ug/l	
71-43-2	Benzene	ND	200	52	ug/l	
75-27-4	Bromodichloromethane	ND	200	28	ug/l	
75-25-2	Bromoform	ND	800	37	ug/l	
74-83-9	Bromomethane	ND	400	63	ug/l	
56-23-5	Carbon tetrachloride	ND	200	35	ug/l	
108-90-7	Chlorobenzene	ND	200	38	ug/l	
75-00-3	Chloroethane	ND	200	44	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2000	200	ug/l	
67-66-3	Chloroform	ND	200	32	ug/l	
74-87-3	Chloromethane	ND	200	58	ug/l	
124-48-1	Dibromochloromethane	ND	200	32	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	200	36	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	200	52	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	200	44	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1000	180	ug/l	
75-34-3	1,1-Dichloroethane	ND	200	48	ug/l	
107-06-2	1,2-Dichloroethane	ND	200	70	ug/l	
75-35-4	1,1-Dichloroethene	ND	200	58	ug/l	
156-59-2	cis-1,2-Dichloroethene	36000	200	49	ug/l	
156-60-5	trans-1,2-Dichloroethene	563	200	32	ug/l	
78-87-5	1,2-Dichloropropane	ND	200	35	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	200	36	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	200	30	ug/l	
100-41-4	Ethylbenzene	ND	200	53	ug/l	
75-09-2	Methylene chloride	ND	400	32	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	200	27	ug/l	
127-18-4	Tetrachloroethene	ND	200	59	ug/l	
108-88-3	Toluene	ND	200	31	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	48	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	200	33	ug/l	

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5I		
Lab Sample ID:	JA6854-2	Date Sampled:	12/02/08
Matrix:	AQ - Ground Water	Date Received:	12/02/08
Method:	SW846 8260B	Percent Solids:	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

VOA PPL List

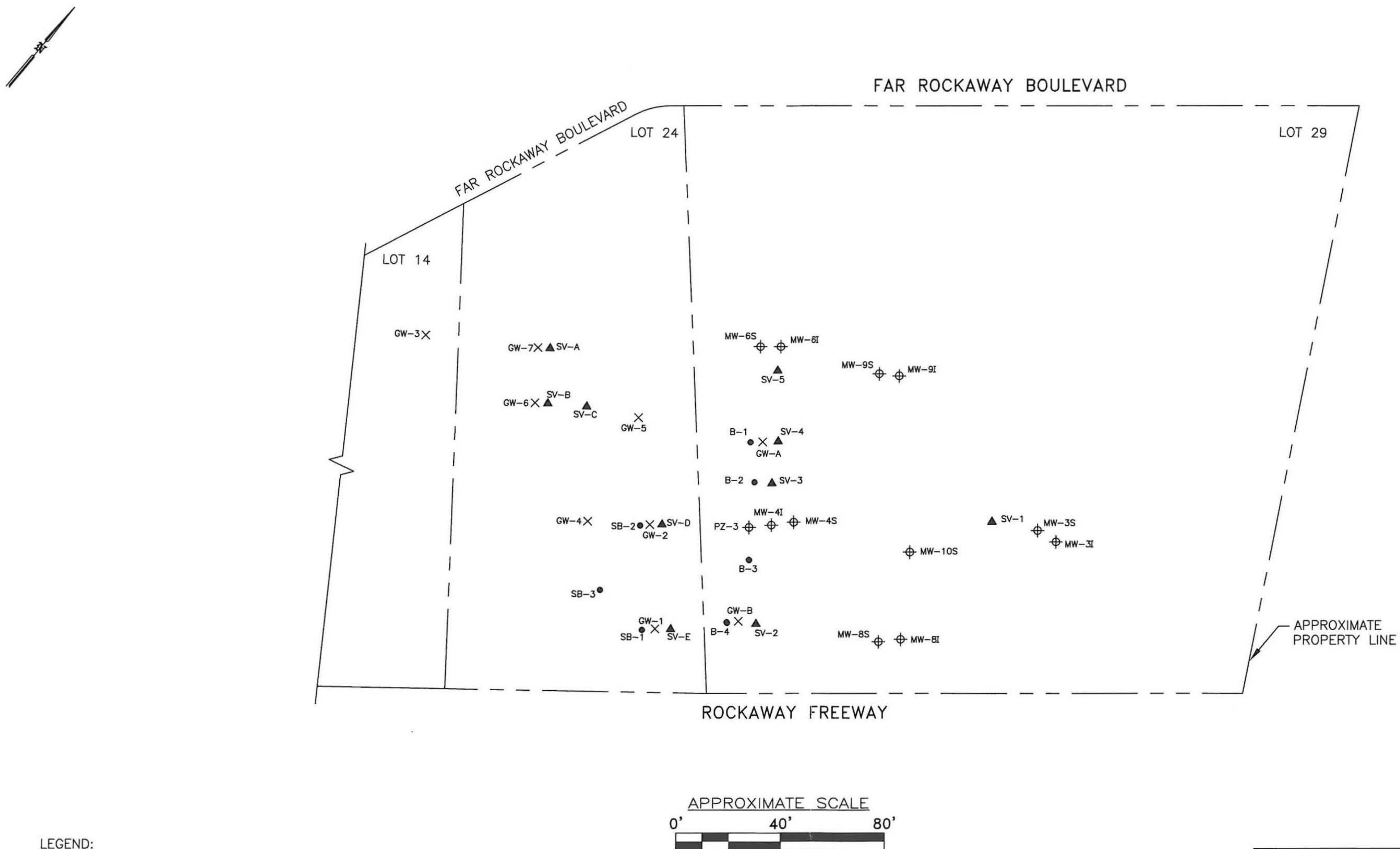
CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethene	9510	200	37	ug/l	
75-69-4	Trichlorofluoromethane	ND	1000	49	ug/l	
75-01-4	Vinyl chloride	6030	200	41	ug/l	
1330-20-7	Xylene (total)	ND	200	77	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-120%
17060-07-0	1,2-Dichloroethane-D4	106%		59-137%
2037-26-5	Toluene-D8	94%		73-116%
460-00-4	4-Bromofluorobenzene	109%		69-126%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

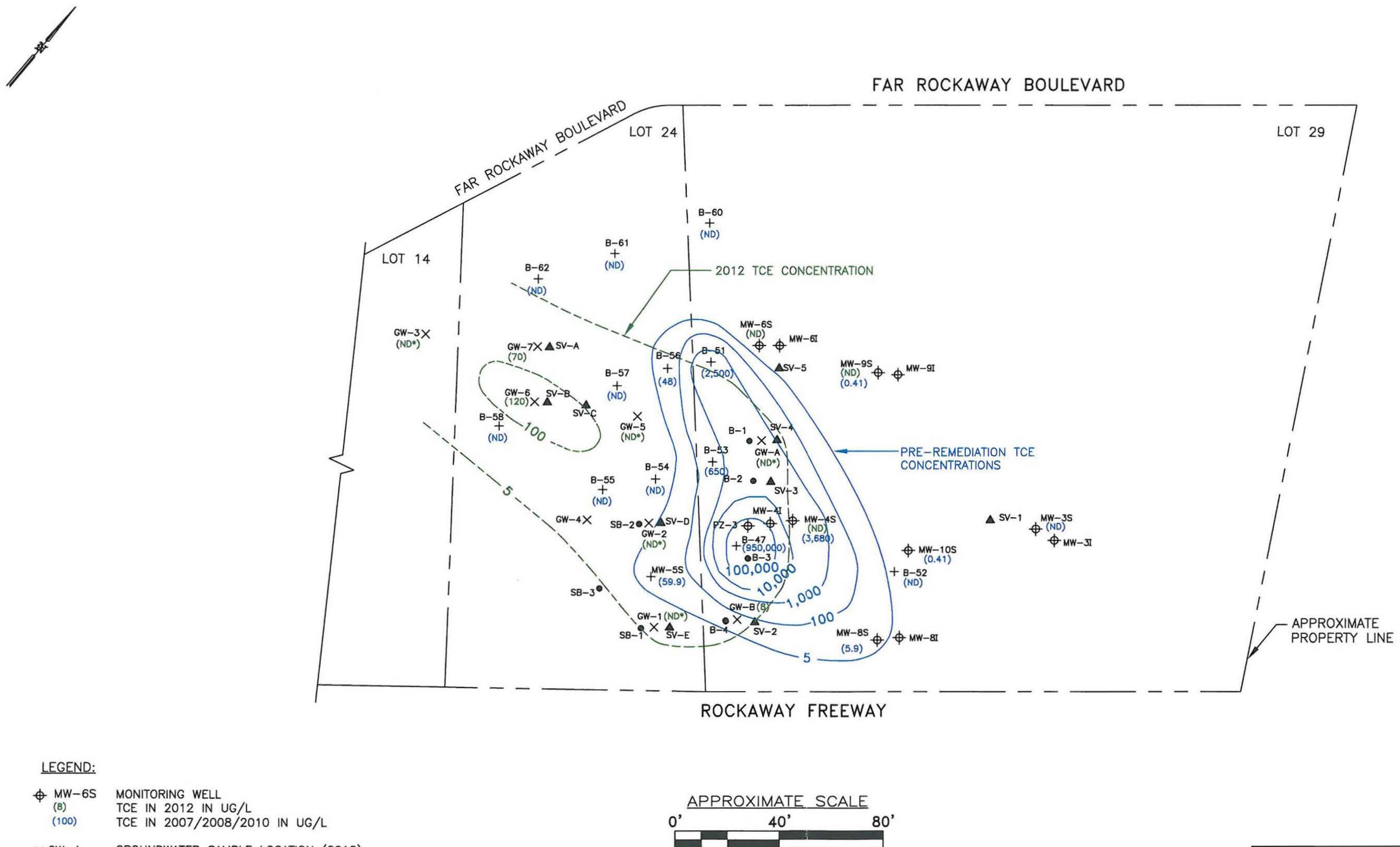
2012 ENVIRONMENTAL INVESTIGATION DATA



LEGEND:

- MW-6S MONITORING WELL
- GW-A GROUNDWATER SAMPLE LOCATION
- B-1 SOIL BORING LOCATION
- SV-1 SOIL VAPOR SAMPLE LOCATION

FPM GROUP		
FIGURE 1 SITE PLAN–2012 INVESTIGATION BLOCK 15950, LOTS 14, 24 and 29 FAR ROCKAWAY, NEW YORK		
Drawn By:H.C.	Checked By:S.D.	Date:9/19/12



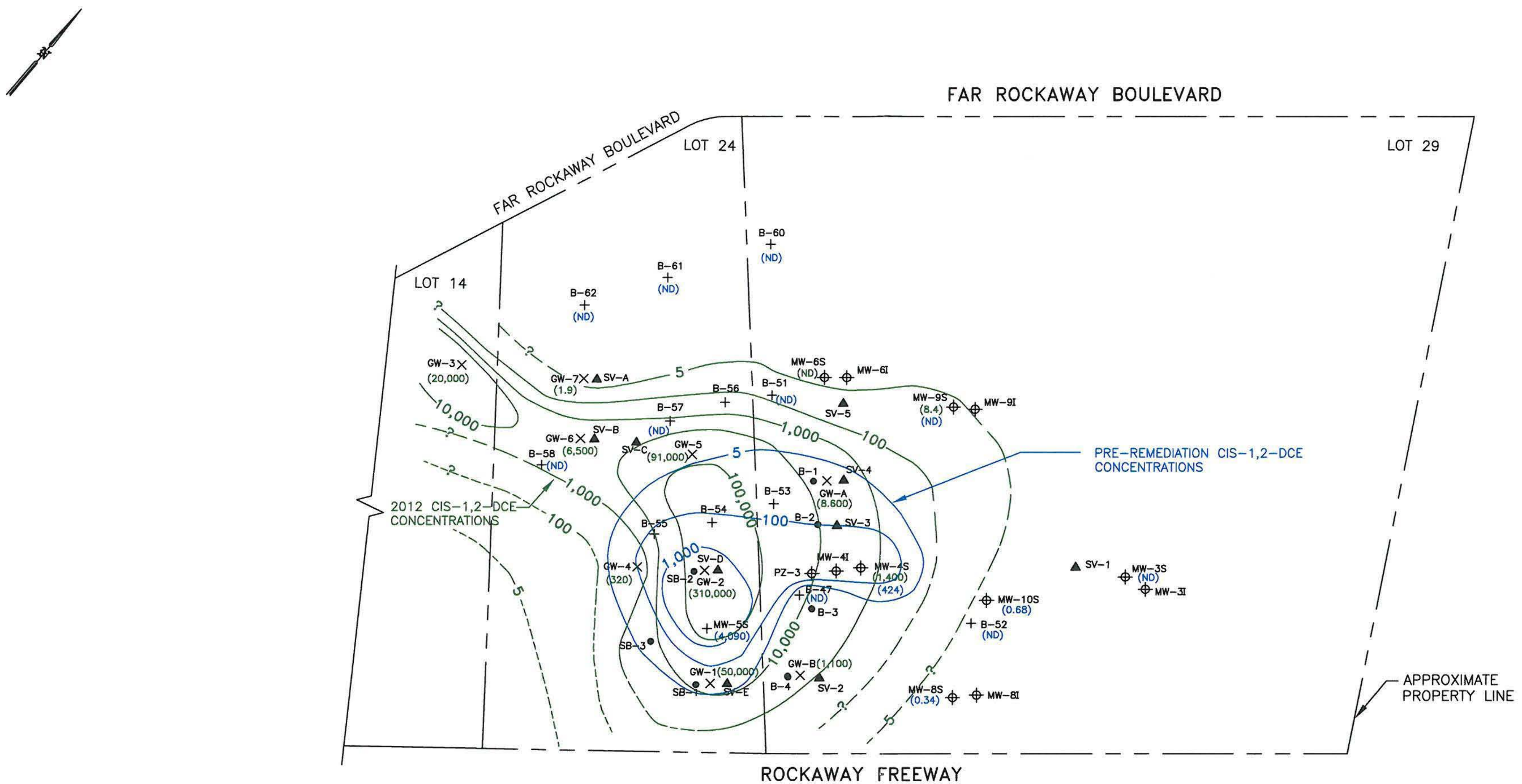
LEGEND:

MW-6S (8) (100)	MONITORING WELL TCE IN 2012 IN UG/L TCE IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED
(*)	ELEVATED DETECTION LIMIT

FPM GROUP

FIGURE 2
SHALLOW GROUNDWATER TCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:9/19/12



LEGEND:

MW-6S (8) (10)	MONITORING WELL CIS-1,2-DCE 2012 IN UG/L CIS-1,2-DCE IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED
(*)	ELEVATED DETECTION LIMIT

APPROXIMATE SCALE

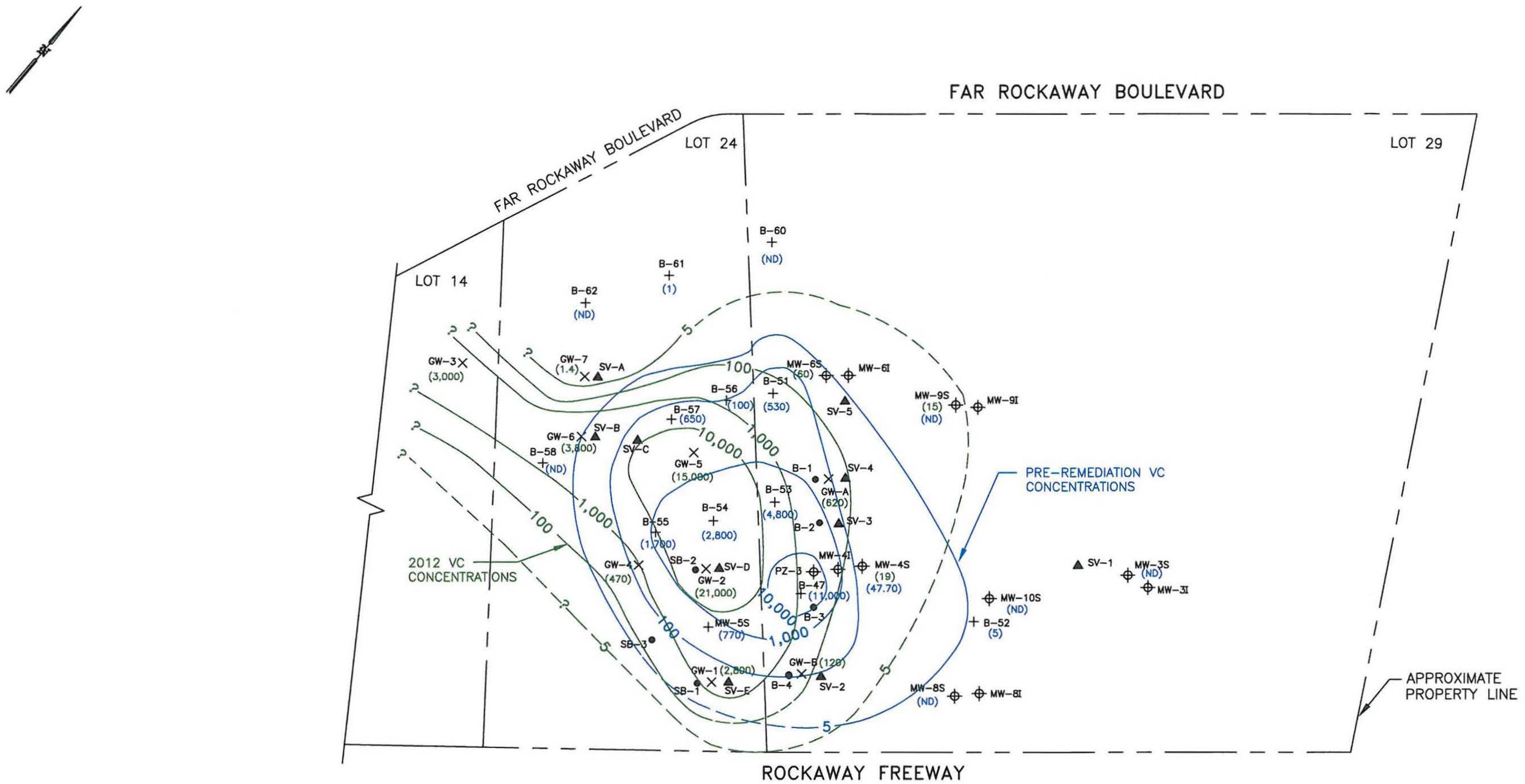
0' 40' 80'

REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 3
SHALLOW GROUNDWATER CIS-1,2-DCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

⌖ MW-6S (8) (10)	MONITORING WELL VC IN 2012 IN UG/L VC IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED

APPROXIMATE SCALE

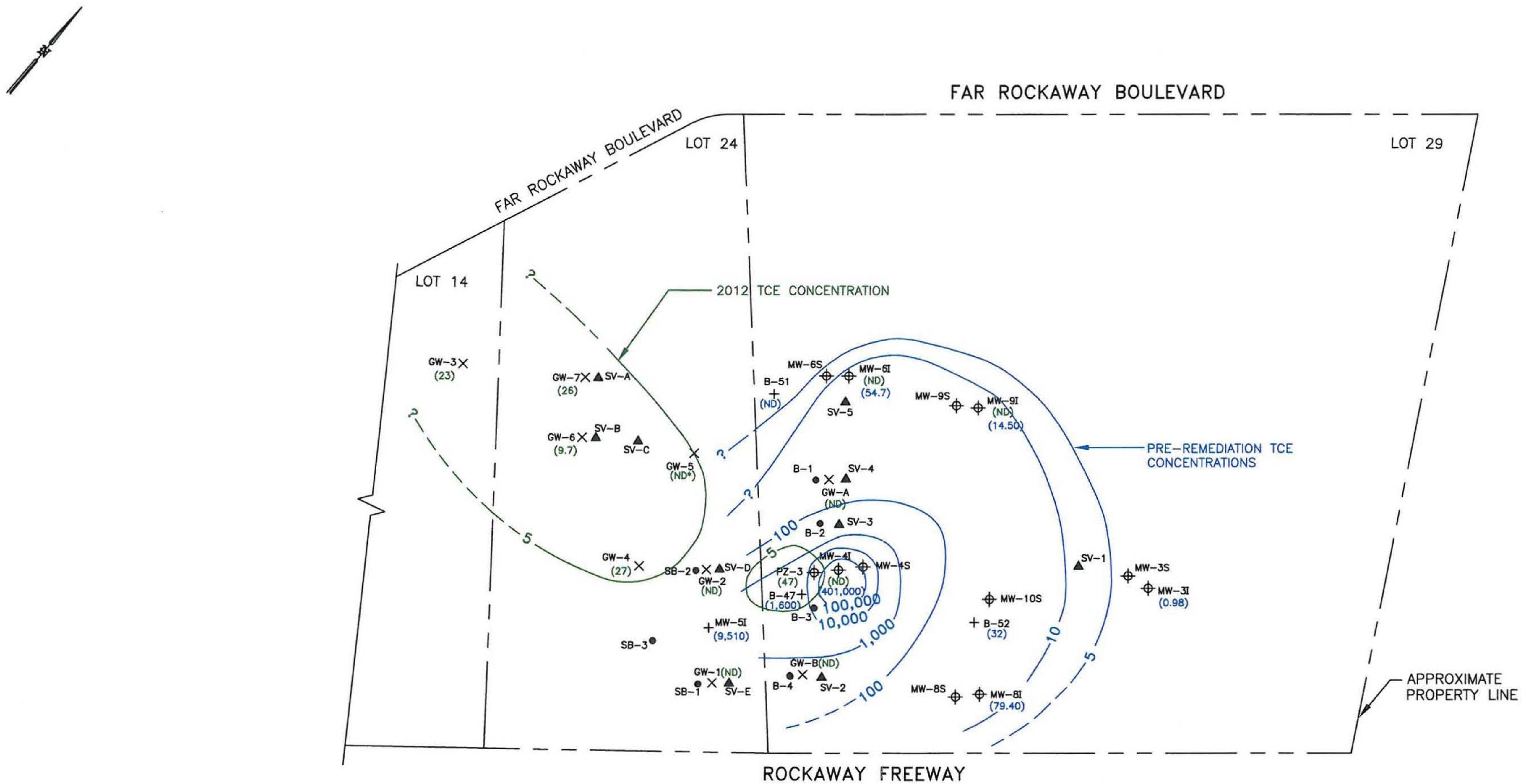
0' 40' 80'

REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 4
SHALLOW GROUNDWATER VC CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

MW-6I (8) (100)	MONITORING WELL TCE IN 2012 IN UG/L TCE IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ MW-5I	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED
(*)	ELEVATED DETECTION LIMIT

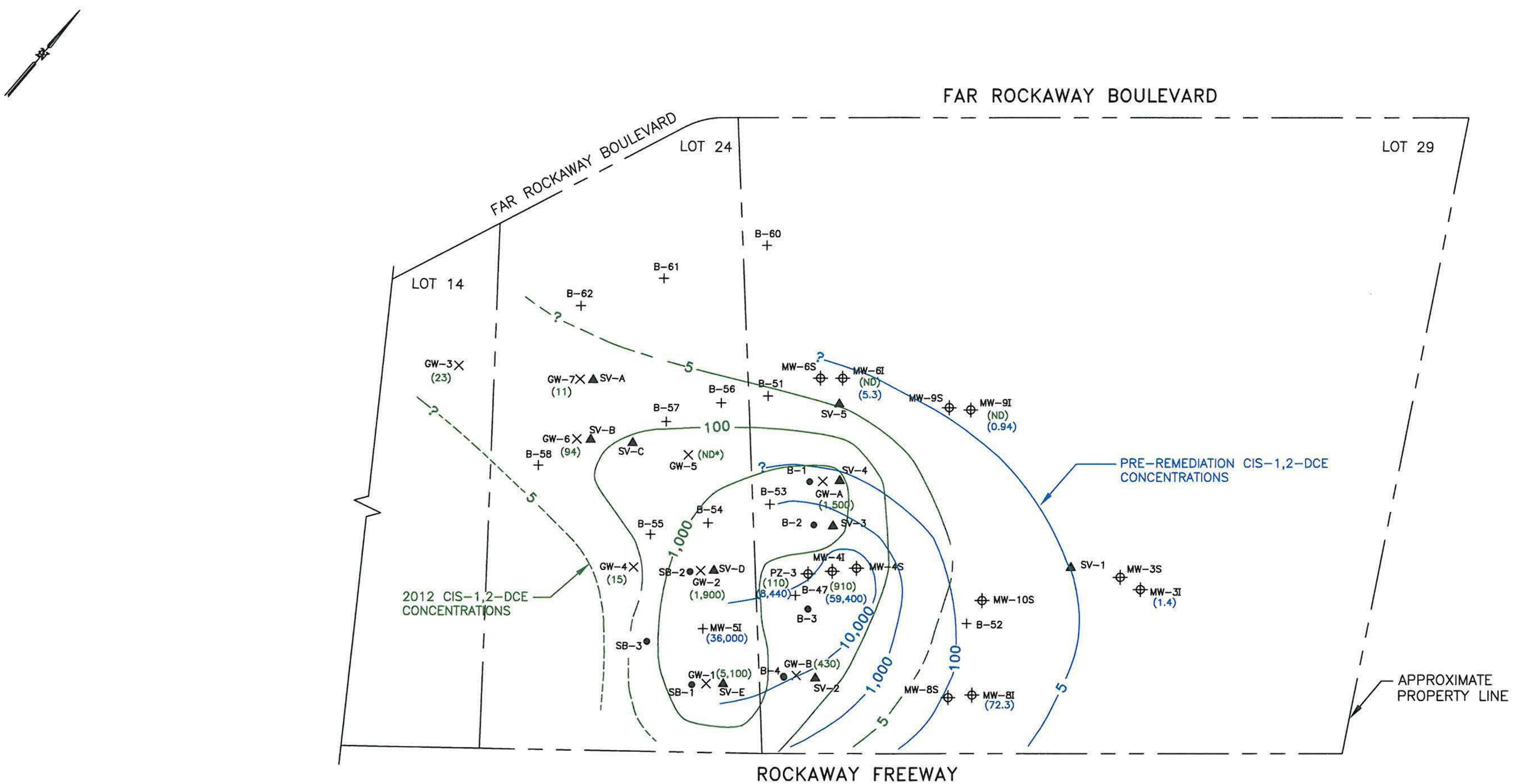
APPROXIMATE SCALE

0' 40' 80'

FPM GROUP

FIGURE 5
INTERMEDIATE GROUNDWATER TCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

MW-6S (8) (10)	MONITORING WELL CIS-1,2-DCE 2012 IN UG/L CIS-1,2-DCE IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED
(*)	ELEVATED DETECTION LIMIT

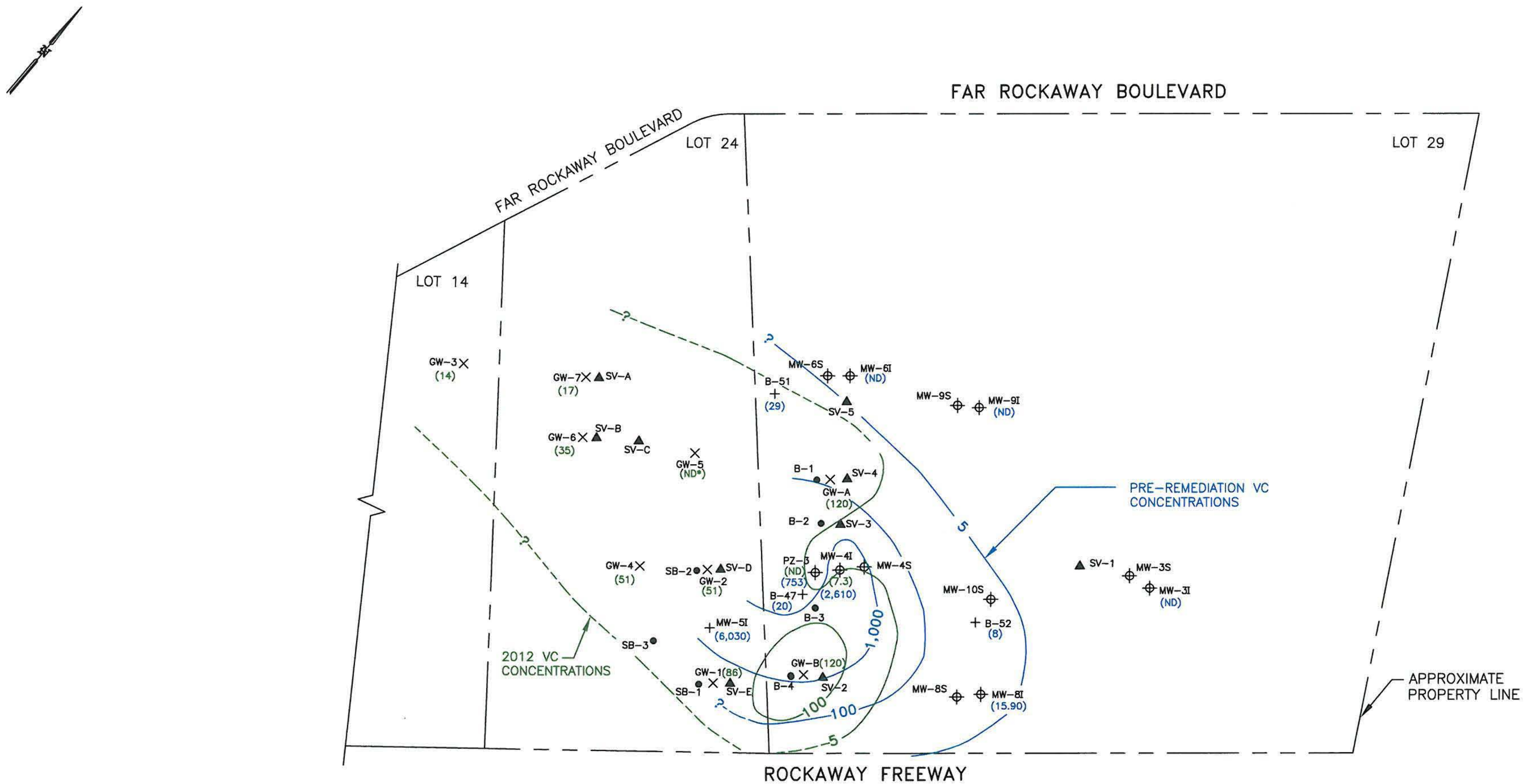
APPROXIMATE SCALE

0' 40' 80'

FPM GROUP

FIGURE 6
INTERMEDIATE GROUNDWATER
CIS-1,2-DCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

MW-6I (8) (100)	MONITORING WELL VC IN 2012 IN UG/L VC IN 2007/2008/2010 IN UG/L
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ MW-5I	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION
(ND)	NOT DETECTED
(*)	ELEVATED DETECTION LIMIT

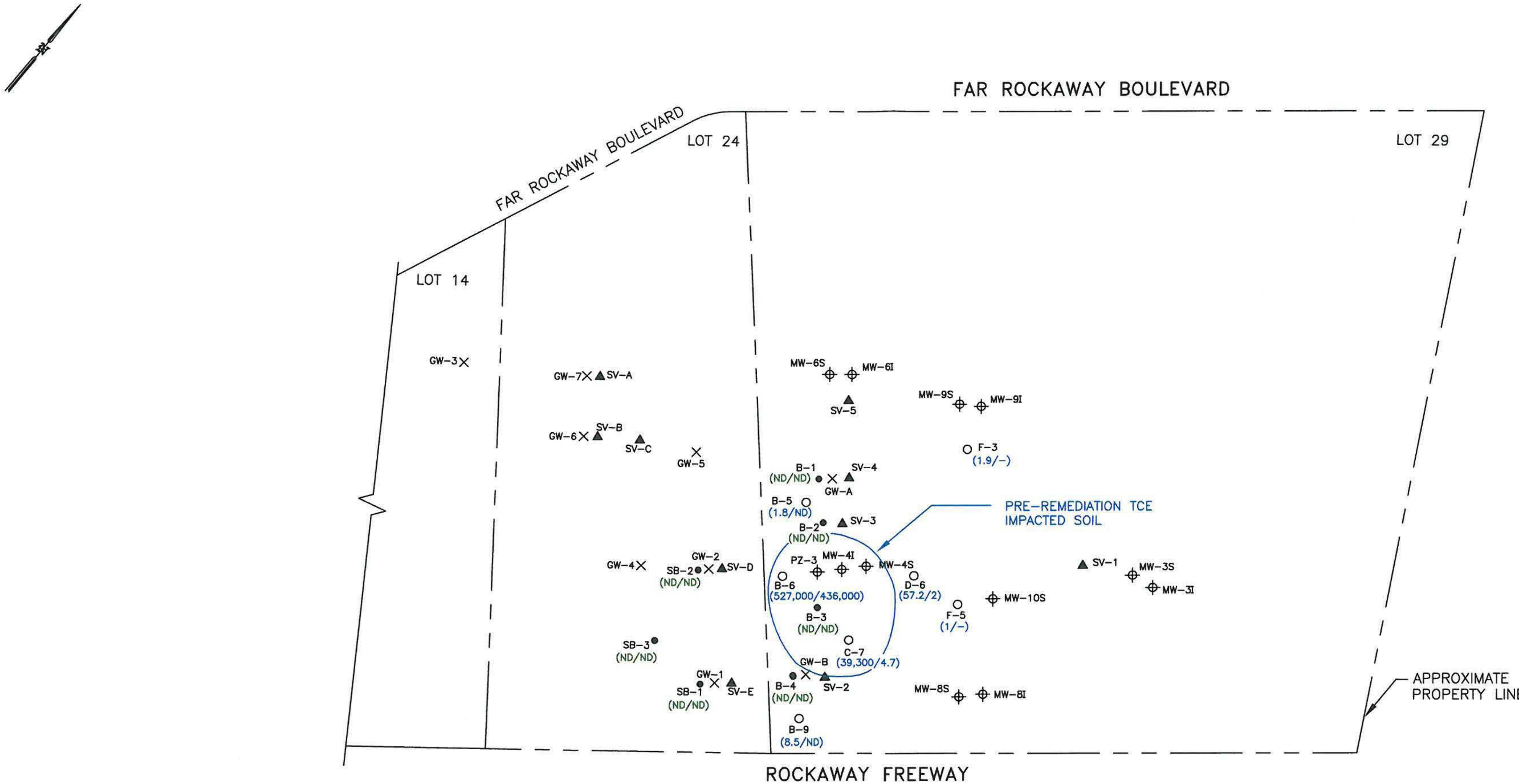
APPROXIMATE SCALE

0' 40' 80'

FPM GROUP

FIGURE 7
INTERMEDIATE GROUNDWATER VC CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

⌖ MW-6S	MONITORING WELL
× GW-A	GROUNDWATER SAMPLE LOCATION
● B-1	SOIL BORING LOCATION (2012)
○ B-5	SOIL BORING LOCATION (2010)
(10/10)	TCE IN SHALLOW SAND/SHALLOW CLAY IN 2012, IN UG/KG
(10/10)	TCE IN SHALLOW SAND/SHALLOW CLAY, IN 2007/2008/2010 IN UG/KG
▲ SV-1	SOIL VAPOR SAMPLE LOCATION

APPROXIMATE SCALE

0' 40' 80'

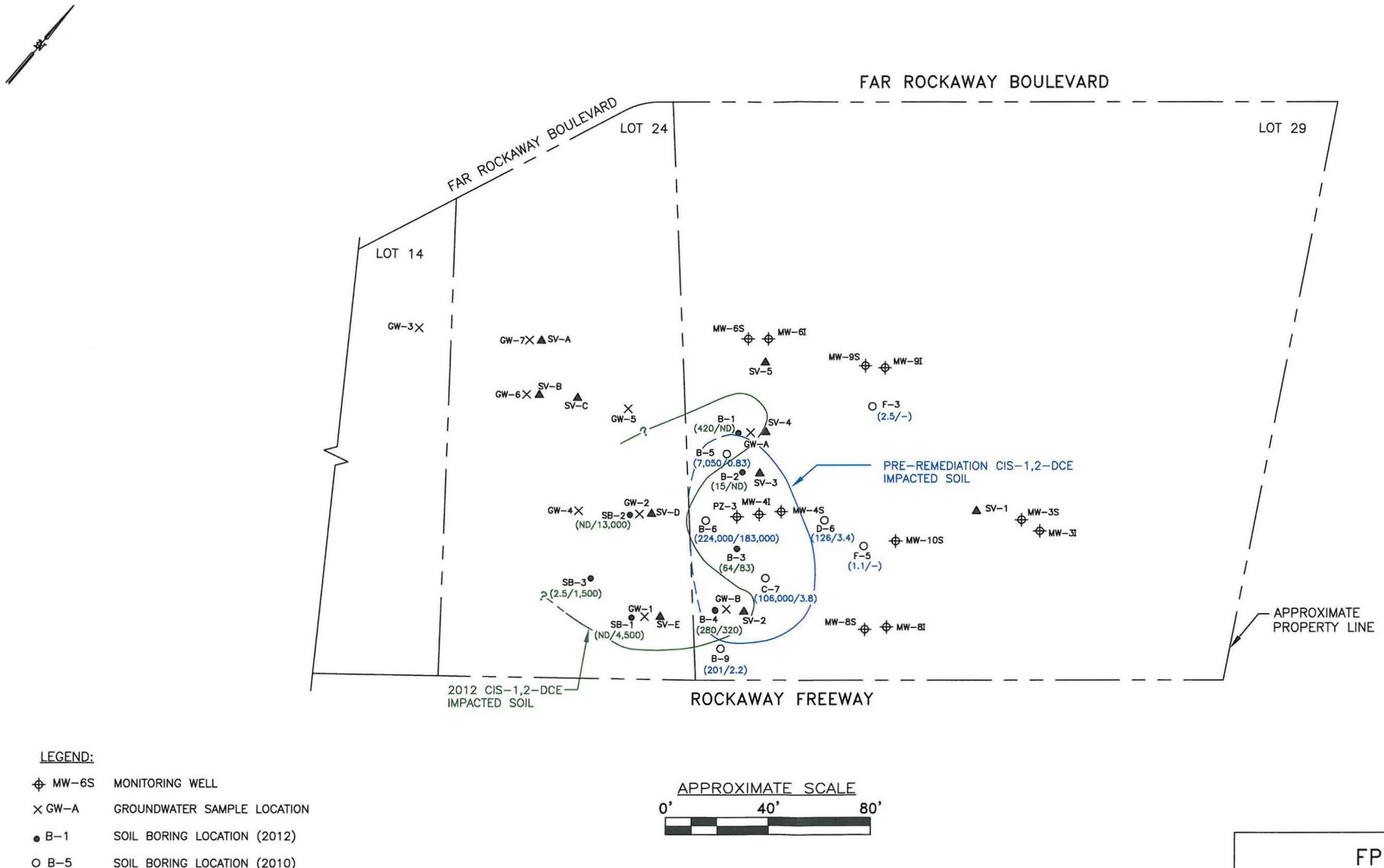
REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 8
SOIL TCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:9/19/12

H:\ALPROF\LOTS 14,24,29 (1087-12-01 (002)\SOIL TCE CONCENTRATIONS.dwg, 10/9/2012 1:18:19 PM, Color Minolta, 11x17



LEGEND:

- MW-6S MONITORING WELL
- GW-A GROUNDWATER SAMPLE LOCATION
- B-1 SOIL BORING LOCATION (2012)
- B-5 SOIL BORING LOCATION (2010)
- (10/10) CIS-1,2-DCE IN SHALLOW SAND/SHALLOW CLAY IN 2012, IN UG/KG
- (10/10) CIS-1,2-DCE IN SHALLOW SAND/SHALLOW CLAY, IN 2007/2008/2010 IN UG/KG
- SV-1 SOIL VAPOR SAMPLE LOCATION

REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 9
SOIL CIS-1,2-DCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:9/19/12

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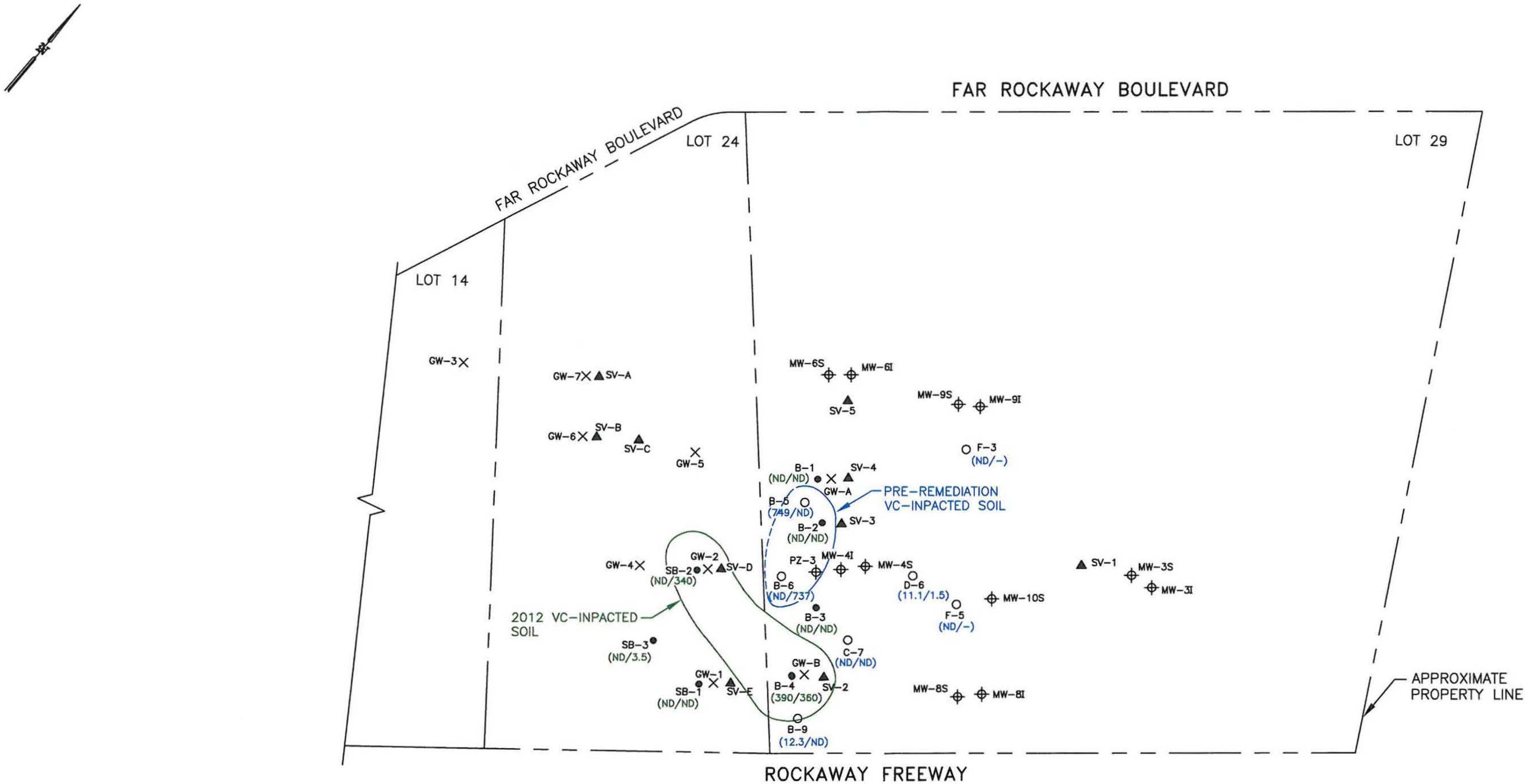


LEGEND:

MW-6S	MONITORING WELL
GW-A	GROUNDWATER SAMPLE LOCATION
B-1	SOIL BORING LOCATION (2012)
B-5	SOIL BORING LOCATION (2010)
(10/10)	VC IN SHALLOW SAND/SHALLOW CLAY IN 2012, IN UG/KG
(10/10)	VC IN SHALLOW SAND/SHALLOW CLAY, IN 2007/2008/2010 IN UG/KG
SV-1	SOIL VAPOR SAMPLE LOCATION

APPROXIMATE SCALE

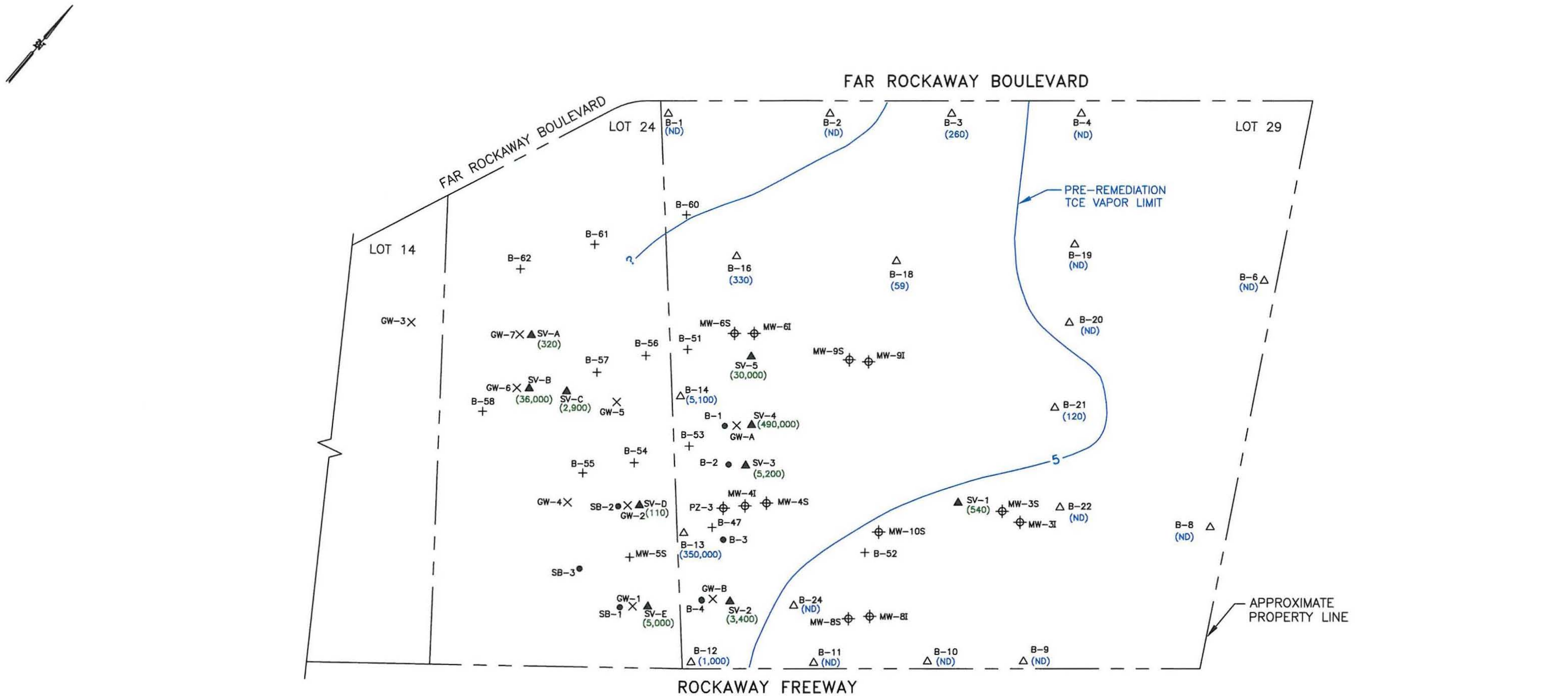
0' 40' 80'

REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 10
SOIL VC CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

MW-6S	MONITORING WELL
× GW-A	GROUNDWATER SAMPLE LOCATION (2012)
+ B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
● B-1	SOIL BORING LOCATION
▲ SV-1	SOIL VAPOR SAMPLE LOCATION (2012)
△ B-3	SOIL VAPOR SAMPLE LOCATION (2006)
(540)	TCE IN 2012 IN UG/M³
(1,000)	TCE IN 2006 IN UG/M³
(ND)	NOT DETECTED

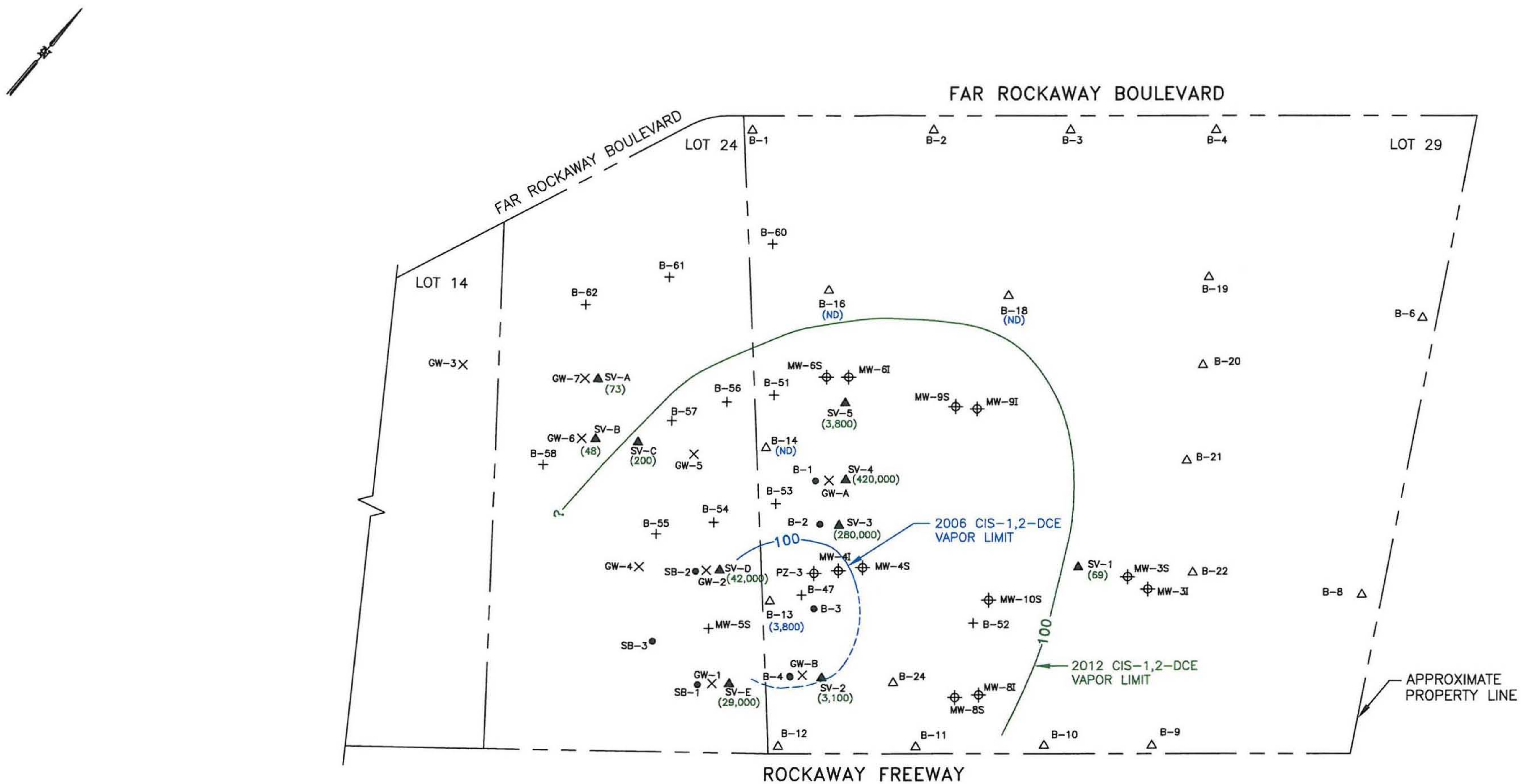
APPROXIMATE SCALE

0' 40' 80'

FPM GROUP

FIGURE 11
SOIL VAPOR TCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. Checked By:S.D. Date:9/19/12



LEGEND:

MW-6S	MONITORING WELL
GW-A	GROUNDWATER SAMPLE LOCATION (2012)
B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
B-1	SOIL BORING LOCATION
SV-1	SOIL VAPOR SAMPLE LOCATION (2012)
B-3	SOIL VAPOR SAMPLE LOCATION (2006)
(540)	CIS-1,2-DCE IN 2012 IN UG/M^3
(3,800)	CIS-1,2-DCE IN 2006 IN UG/M^3
(ND)	NOT DETECTED

APPROXIMATE SCALE

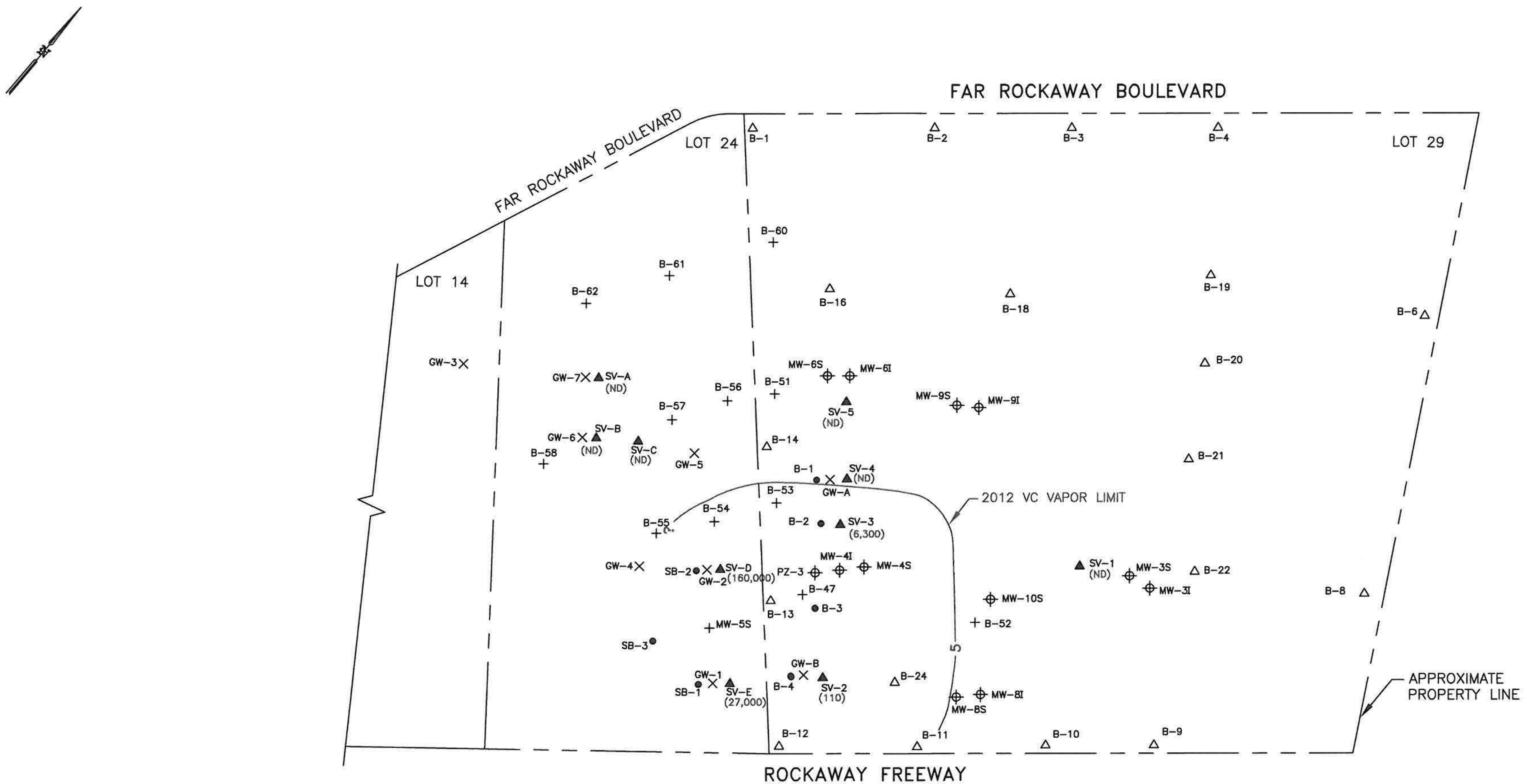
0' 40' 80'

REVISION DATE: 10/12/2012

FPM GROUP

FIGURE 12
SOIL VAPOR CIS-1,2-DCE CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:9/19/12



LEGEND:

MW-6S	MONITORING WELL
GW-A	GROUNDWATER SAMPLE LOCATION (2012)
B-61	GROUNDWATER SAMPLE LOCATION (2007/2008)
B-1	SOIL BORING LOCATION
SV-1	SOIL VAPOR SAMPLE LOCATION (2012)
B-3	SOIL VAPOR SAMPLE LOCATION (2006)
(540)	VC IN 2012 IN UG/M^3
(ND)	NOT DETECTED

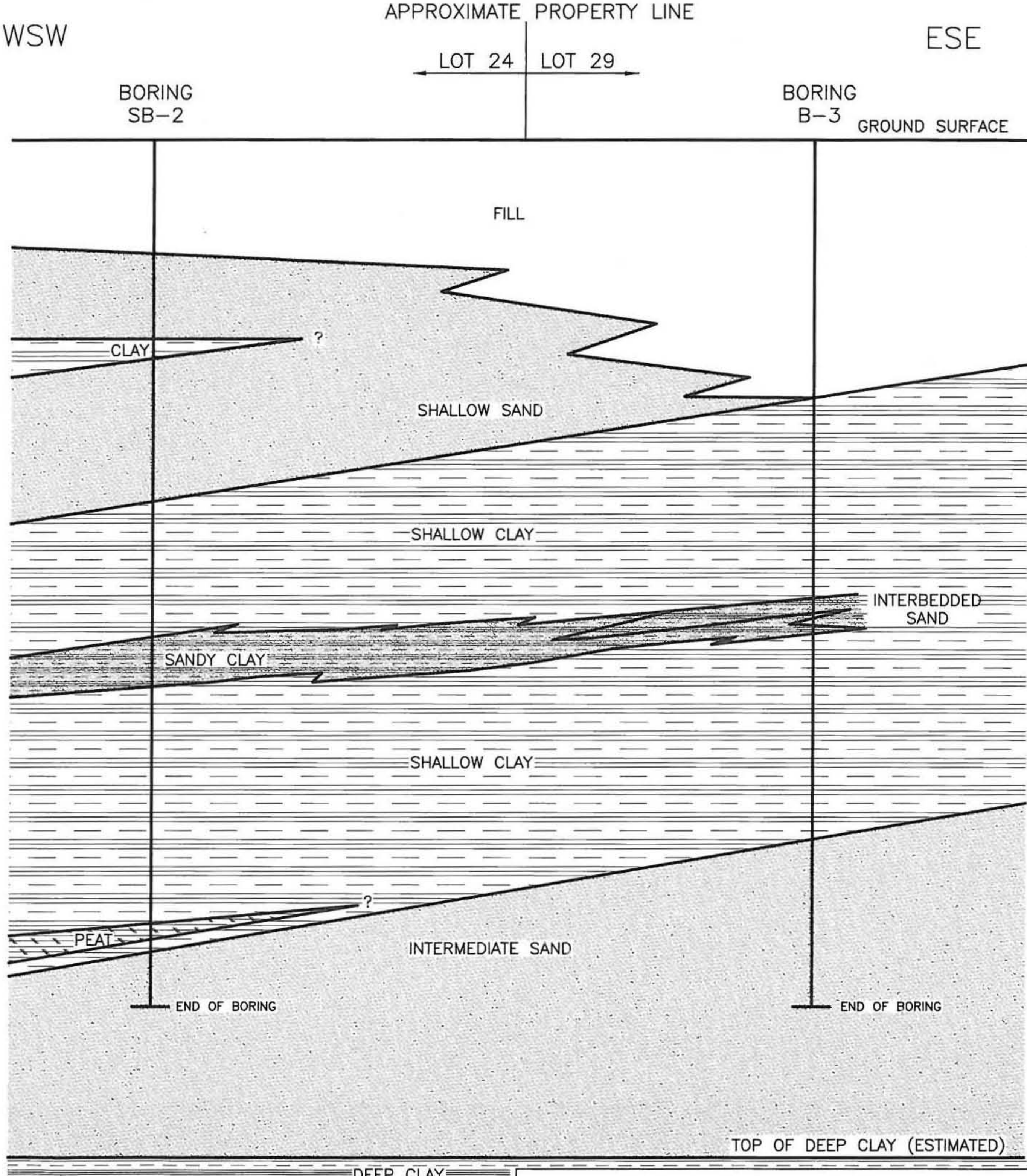
APPROXIMATE SCALE

0' 40' 80'

FPM GROUP

FIGURE 13
SOIL VAPOR VC CONCENTRATIONS
BLOCK 15950, LOTS 14, 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:9/19/12



APPROXIMATE SCALE:
VERTICAL: 1"=5'
HORIZONTAL; 1"=10'
VERTICAL EXAGGERATION = 2X

FPM GROUP

FIGURE 14
STRATIGRAPHIC CROSS-SECTION
BLOCK 15950, LOTS 24 and 29
FAR ROCKAWAY, NEW YORK

Drawn By:H.C.	Checked By:S.D.	Date:9/19/12

H:\ALPROF\LOTS 14.24.29 (1087-12-01 (002)\STRATIGRAPHIC CROSS-SECTION.dwg, 10/9/2012 2:10:37 PM, BW Minolta 8 1/2x11

TABLE 1
SOIL CHEMICAL ANALYTICAL DATA, AUGUST 7, 2012
BLOCK 15950 LOT 24, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Location	SB-1		SB-2		SB-3		6 NYCRR Part 375-6(a) Soil Cleanup Objectives For Unrestricted Use
Sampling Interval (feet below grade)	10-12	17-18	7.5-10	12.5-13.5	5-10	20-21	
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
1,1,1-Trichloroethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	680
1,1,2,2-Tetrachloroethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
1,1,2-Trichloroethane	4.4 U	6.0 U	4.5 U	5.5 U	4.4 U	6.1 U	-
1,1-Dichloroethane	4.4 U	6.0 U	4.5 U	5.5 U	4.4 U	6.1 U	270
1,1-Dichloroethene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	330
1,1-Dichloropropene	15 U	20 U	15 U	18 U	14 U	20 U	-
1,2,3-Trichlorobenzene	15 U	20 U	15 U	18 U	14 U	20 U	-
1,2,3-Trichloropropane	29 U	40 U	30 U	37 U	29 U	41 U	-
1,2,4,5-Tetramethylbenzene	12 U	16 U	12 U	15 U	12 U	16 U	-
1,2,4-Trichlorobenzene	15 U	20 U	15 U	18 U	14 U	20 U	-
1,2,4-Trimethylbenzene	15 U	20 U	15 U	18 U	14 U	20 U	3,600
1,2-Dibromo-3-chloropropane	15 U	20 U	15 U	18 U	14 U	20 U	-
1,2-Dibromoethane	12 U	16 U	12 U	15 U	12 U	16 U	-
1,2-Dichlorobenzene	15 U	20 U	15 U	18 U	14 U	20 U	1,100
1,2-Dichloroethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	20
1,2-Dichloropropane	10 U	14 U	10 U	13 U	10 U	14 U	-
1,3,5-Trimethylbenzene	15 U	20 U	15 U	18 U	14 U	20 U	8,400
1,3-Dichlorobenzene	15 U	20 U	15 U	18 U	14 U	20 U	2,400
1,3-Dichloropropane	15 U	20 U	15 U	18 U	14 U	20 U	-
1,4-Dichlorobenzene	15 U	20 U	15 U	18 U	14 U	20 U	1,800
1,4-Diethylbenzene	12 U	16 U	12 U	15 U	12 U	16 U	-
2,2-Dichloropropane	15 U	20 U	15 U	18 U	14 U	20 U	-
2-Butanone	29 U	**120**	30 U	37 U	29 U	**140**	120
2-Hexanone	29 U	5.2 J	30 U	37 U	29 U	41 U	-
4-Ethyltoluene	12 U	16 U	12 U	15 U	12 U	16 U	-
4-Methyl-2-pentanone	29 U	40 U	30 U	37 U	29 U	41 U	-
Acetone	24 J	**650**	35	**59**	29 U	**800**	50
Acrylonitrile	29 U	40 U	30 U	37 U	29 U	41 U	-
Benzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	60
Bromobenzene	15 U	20 U	15 U	18 U	14 U	20 U	-
Bromochloromethane	15 U	20 U	15 U	18 U	14 U	20 U	-
Bromodichloromethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
Bromoform	12 U	16 U	12 U	15 U	12 U	16 U	-
Bromomethane	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	-
Carbon disulfide	29 U	21 J	30 U	33 J	1.9 J	31 J	-
Carbon tetrachloride	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	760
Chlorobenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	1,100
Chloroethane	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	-
Chloroform	4.4 U	6.0 U	4.5 U	5.5 U	4.4 U	6.1 U	370
Chloromethane	15 U	20 U	15 U	18 U	14 U	20 U	-
cis-1,2-Dichloroethene	2.9 U	**4,500 D**	3.0 U	**13,000 D**	2.5 J	**1,500 D**	250
cis-1,3-Dichloropropene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
Dibromochloromethane	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
Dibromomethane	29 U	40 U	30 U	37 U	29 U	41 U	-
Dichlorodifluoromethane	29 U	40 U	30 U	37 U	29 U	41 U	-
Ethyl ether	15 U	20 U	15 U	18 U	14 U	20 U	-
Ethylbenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	1,000
Hexachlorobutadiene	15 U	20 U	15 U	18 U	14 U	20 U	-
Isopropylbenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	2,300
Methyl tert butyl ether	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	930
Methylene chloride	8.4 J	13 J	11 J	37 U	29 U	41 U	50
n-Butylbenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	12,000
n-Propylbenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	3,900
Naphthalene	15 U	20 U	15 U	18 U	14 U	20 U	12,000
o-Chlorotoluene	15 U	20 U	15 U	18 U	14 U	20 U	-
o-Xylene	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	260
p-Chlorotoluene	15 U	20 U	15 U	18 U	14 U	20 U	-
p-Isopropyltoluene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	10,000
p/m-Xylene	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	260
sec-Butylbenzene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	11,000
Styrene	5.9 U	8.1 U	6.0 U	7.4 U	5.8 U	8.2 U	-
tert-Butylbenzene	15 U	20 U	15 U	18 U	14 U	20 U	5,900
Tetrachloroethene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	1,300
Toluene	4.4 U	2.5 J	4.5 U	5.5 U	4.4 U	3.5 J	700
trans-1,2-Dichloroethene	4.4 U	48	4.5 U	88	4.4 U	55	190
trans-1,3-Dichloropropene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	-
trans-1,4-Dichloro-2-butene	15 U	20 U	15 U	18 U	14 U	20 U	-
Trichloroethene	2.9 U	4.0 U	3.0 U	3.7 U	2.9 U	4.1 U	470
Trichlorofluoromethane	15 U	20 U	15 U	18 U	14 U	20 U	-
Vinyl acetate	29 U	40 U	30 U	37 U	29 U	41 U	-
Vinyl chloride	5.9 U	8.1 U	6.0 U	**340**	5.8 U	3.5 J	20

Notes:

U = Not detected at the indicated reporting limit (RL).
Bold values exceed 6 NYCRR Part 375-6(a) Soil Cleanup Objectives.
- = No 6 NYCRR Part 375-6(a) Soil Cleanup Objective established.
ug/kg= micrograms per kilogram
J = Estimated value. The target analyte concentration is below the RL, but above the method detection limit (MDL).
D = Analyte concentration was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

TABLE 2
GROUNDWATER CHEMICAL ANALYTICAL DATA, AUGUST 7, 2012
BLOCK 15950 LOT 24 AND LOT 14, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Location	GW-1		GW-2		GW-3		GW-4		GW-5		GW-6		GW-7		NYSDEC Class GA Ambient Water Quality Standard
Sampling Interval (feet below grade)	13-17	25 - 29	15-19	28-30	15-19	27-29	15-19	27-29	15-19	27-29	15-19	27-29	15-19	27-29	
Volatile Organic Compounds (ug/l)															
1,1,1,2-Tetrachloroethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,1,1-Trichloroethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,1,2,2-Tetrachloroethane	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	5
1,1,2-Trichloroethane	1,500 U	150 U	7,500 U	60 U	600 U	1.5 U	15 U	1.5 U	3,800 U	300 U	150 U	6.0 U	3.0 U	1.5 U	1
1,1-Dichloroethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,1-Dichloroethene	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	5
1,1-Dichloropropene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,2,3-Trichlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,2,3-Trichloropropane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	0.4
1,2,4,5-Tetramethylbenzene	2,000 U	200 U	10,000 U	80 U	800 U	2.0 U	20 U	2.0 U	5,000 U	400 U	200 U	8.0 U	4.0 U	2.0 U	5
1,2,4-Trichlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,2,4-Trimethylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	2.4 J	2.5 U	5
1,2-Dibromo-3-chloropropane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	0.04
1,2-Dibromoethane	2,000 U	200 U	10,000 U	80 U	800 U	2.0 U	20 U	2.0 U	5,000 U	400 U	200 U	8.0 U	4.0 U	2.0 U	5
1,2-Dichlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	3
1,2-Dichloroethane	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	0.6
1,2-Dichloropropane	1,000 U	100 U	5,000 U	40 U	400 U	1.0 U	10 U	1.0 U	2,500 U	200 U	100 U	4.0 U	2.0 U	1.0 U	1
1,3,5-Trimethylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,3-Dichlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	3
1,3-Dichloropropane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
1,4-Dichlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	3
1,4-Diethylbenzene	2,000 U	200 U	10,000 U	80 U	800 U	2.0 U	20 U	2.0 U	5,000 U	400 U	200 U	8.0 U	4.0 U	2.0 U	-
2,2-Dichloropropane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
2-Butanone	5,000 U	500 U	25,000 U	200 U	2,000 U	1.8 J	50 U	1.7 J	12,000 U	1000 U	500 U	20 U	10 U	2.2 J	50
2-Hexanone	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	50
4-Ethyltoluene	2,000 U	200 U	10,000 U	80 U	800 U	2.0 U	20 U	2.0 U	5,000 U	400 U	200 U	8.0 U	4.0 U	2.0 U	-
4-Methyl-2-pentanone	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	50
Acetone	**1,400 J**	500 U	25,000 U	49 J	2,000 U	7.3	12 J	6.5	12,000 U	**320 J**	**100 J**	14 J	8.8 J	10	50
Acrylonitrile	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	5
Benzene	500 U	50 U	2,500 U	20 U	200 U	**11**	5.0 U	**4.1**	1,200 U	100 U	**51**	**8.0**	**32**	**11**	1
Bromobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Bromochloromethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Bromodichloromethane	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	50
Bromoform	2,000 U	200 U	10,000 U	80 U	800 U	2.0 U	20 U	2.0 U	5,000 U	400 U	200 U	8.0 U	4.0 U	2.0 U	50
Bromomethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Carbon disulfide	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	3.3 J	12,000 U	1000 U	500 U	20 U	10 U	1.0 J	50
Carbon tetrachloride	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	5
Chlorobenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Chloroethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Chloroform	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	7
Chloromethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
cis-1,2-Dichloroethene	**50,000**	**5,100**	**310,000**	**1,900**	**20,000**	**23**	**320**	**15**	**91,000**	500 U	**6,500**	**94**	1.9 J	**11**	5
cis-1,3-Dichloropropene	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	0.4
Dibromochloromethane	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	50
Dibromomethane	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	5
Dichlorodifluoromethane	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	5
Ethyl ether	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	-
Ethylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	0.81 J	25 U	2.5 U	6,200 U	500 U	250 U	10 U	1.4 J	0.85 J	5
Hexachlorobutadiene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	0.5
Isopropylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Methyl tert butyl ether	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	10
Methylene chloride	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
n-Butylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
n-Propylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Naphthalene	2,500 U	250 U	12,000 U	100 U	1,000 U	1.2 J	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	1.3 J	10
o-Chlorotoluene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
o-Xylene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
p-Chlorotoluene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
p-Isopropyltoluene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	2.0 J	2.5 U	5
p/m-Xylene	2,500 U	250 U	12,000 U	100 U	1,000 U	0.92 J	25 U	2.5 U	6,200 U	500 U	250 U	10 U	7.2	1.3 J	5
sec-Butylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Styrene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
tert-Butylbenzene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Tetrachloroethene	500 U	**43 J**	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	5
Toluene	2,500 U	250 U	12,000 U	100 U	1,000 U	**19**	25 U	**9.7**	6,200 U	500 U	250 U	**12**	**23**	**19**	5
trans-1,2-Dichloroethene	2,500 U	250 U	12,000 U	100 U	1,000 U	**12**	**47**	4.1	6,200 U	500 U	250 U	4.9 J	5.0 U	**8.3**	5
trans-1,3-Dichloropropene	500 U	50 U	2,500 U	20 U	200 U	0.5 U	5.0 U	0.5 U	1,200 U	100 U	50 U	2.0 U	1.0 U	0.5 U	0.4
trans-1,4-Dichloro-2-butene	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Trichloroethene	500 U	50 U	2,500 U	20 U	200 U	**23**	5.0 U	2.7	1,200 U	100 U	**120**	**9.7**	**70**	**26**	5
Trichlorofluoromethane	2,500 U	250 U	12,000 U	100 U	1,000 U	2.5 U	25 U	2.5 U	6,200 U	500 U	250 U	10 U	5.0 U	2.5 U	5
Vinyl acetate	5,000 U	500 U	25,000 U	200 U	2,000 U	5.0 U	50 U	5.0 U	12,000 U	1000 U	500 U	20 U	10 U	5.0 U	50
Vinyl chloride	**2,800**	**36 J**	**21,000**	**51**	**3,000**	**14**	**470**	**51**	**15,000**	200 U	**3,800**	**35**	1.4 J	**17**	2

Notes:

U = Not detected at the indicated reporting limit (RL).
J = Estimated value. The target analyte concentration is below the RL, but above the method detection limit (MDL).
Bold values exceed NYSDEC Class GA Ambient Water Quality Standards.

- = No NYSDEC Class GA Ambient Water Quality Standard established.
ug/l - micrograms per liter

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TABLE 3
SOIL VAPOR CHEMICAL ANALYTICAL DATA, AUGUST 7, 2012
BLOCK 15950 LOT 24, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Sample Name	SV-A	SV-B	SV-C	SV-D	SV-E
Volatile Organic Compounds (microgram per cubic meter)					
1,1,1-Trichloroethane	0.83 U	0.83 U	1	0.83 U	0.83 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
1,1-Dichloroethane	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1-Dichloroethene	0.60 U	0.60 U	0.60 U	0.60 U	690
1,2,4-Trichlorobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2,4-Trimethylbenzene	100	37	76	12	16
1,2-Dibromoethane	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,2-Dichloroethane	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
1,2-Dichloropropane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
1,3,5-Trimethylbenzene	31	15	22	0.75 U	8.0
1,3-butadiene	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,3-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,4-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,4-Dioxane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
2,2,4-trimethylpentane	37	20	9.5	31	18
4-ethyltoluene	45	19	33	0.75 U	9.5
Acetone	710	560	1,400	3,400	750
Allyl chloride	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U
Benzene	40	37	29	180	37
Benzyl chloride	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Bromomethane	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
Carbon disulfide	25	4.0	95	15	40
Carbon tetrachloride	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U
Chlorobenzene	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
Chloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Chloroform	0.74 U	48	30	0.74 U	5.9
Chloromethane	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
cis-1,2-Dichloroethene	73	48	200	42,000	29,000
cis-1,3-Dichloropropene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Cyclohexane	49	30	0.52 U	0.52 U	49
Dibromochloromethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Ethyl acetate	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
Ethylbenzene	94	42	59	29	38
Freon 11	31	3.2	9.9	0.86 U	1.2
Freon 113	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Freon 114	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Freon 12	0.75 U	2.4	0.75 U	0.75 U	0.75 U
Heptane	80	47	38	210	51
Hexachloro-1,3-butadiene	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Hexane	68	61	59	480	120
Isopropyl alcohol	0.37 U	0.37 U	0.37 U	190	0.37 U
m&p-Xylene	350	150	150	73	110
Methyl butyl ketone	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Methyl ethyl ketone	130	140	100	320	140
Methyl isobutyl ketone	10 J	1.2 U	1.2 U	1.2 U	8.2
Methyl tert-butyl ether	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
Methylene chloride	0.53 U	7.8	0.53 U	0.53 U	9.2
o-Xylene	120	42	65	18	29
Propylene	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Styrene	0.65 U	0.65 U	0.65 U	9.1	7.2
Tetrachloroethylene	3.2	100	9.7	1.0 U	2.1
Tetrahydrofuran	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Toluene	550	260	300	470	300
trans-1,2-Dichloroethene	0.60 U	14	0.60 U	2,800	900
trans-1,3-Dichloropropene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Trichloroethene	320	36,000	2,900	110	5,000
Vinyl acetate	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Vinyl Bromide	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Vinyl chloride	0.39 U	0.39 U	0.39 U	160,000	27,000

Notes:

U = Analyte not detected above indicated method detection limit (MDL).
J = Analyte detected at or below reporting limit (RL) but above the MDL.

SOIL CHEMICAL ANALYTICAL DATA, AUGUST 8, 2012
BLOCK 15950 LOT 29, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Location	B-1		B-2		B-3		B-4		6 NYCRR Part 375-6(a) Soil Cleanup Objectives For Unrestricted Use
Sampling Interval (feet below grade)	10-13	25-27	5-8	15-17	6-9	9-12	5-10	15-.5-17.5	
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
1,1,1-Trichloroethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	680
1,1,2,2-Tetrachloroethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
1,1,2-Trichloroethane	4.8 U	5.2 U	4.4 U	6.9 U	6.0 U	7.2 U	4.4 U	6.0 U	-
1,1-Dichloroethane	4.8 U	5.2 U	4.4 U	6.9 U	6.0 U	7.2 U	4.4 U	6.0 U	270
1,1-Dichloroethene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	330
1,1-Dichloropropene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
1,2,3-Trichlorobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
1,2,3-Trichloropropane	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	-
1,2,4,5-Tetramethylbenzene	13 U	14 U	18	18 U	16 U	19 U	12 U	1.0 J	-
1,2,4-Trichlorobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
1,2,4-Trimethylbenzene	16 U	17 U	7.9 J	23 U	20 U	24 U	14 U	13 J	3,600
1,2-Dibromo-3-chloropropane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
1,2-Dibromoethane	13 U	14 U	12 U	18 U	16 U	19 U	12 U	16 U	-
1,2-Dichlorobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	1,100
1,2-Dichloroethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	20
1,2-Dichloropropane	11 U	12 U	10 U	16 U	14 U	17 U	10 U	14 U	-
1,3,5-Trimethylbenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	2.8 J	8,400
1,3-Dichlorobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	2,400
1,3-Dichloropropane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
1,4-Dichlorobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	1,800
1,4-Diethylbenzene	13 U	14 U	12 U	18 U	16 U	19 U	12 U	1.6 J	-
2,2-Dichloropropane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
2-Butanone	82	**1,700 DE**	29 U	77	**700**	**790**	16 J	24 J	120
2-Hexanone	32 U	18 J	29 U	46 U	15 J	17 J	29 U	40 U	-
4-Ethyltoluene	13 U	14 U	2.7 J	18 U	16 U	19 U	0.69 J	4.4 J	-
4-Methyl-2-pentanone	32 U	34 J	29 U	46 U	14 J	17 J	29 U	40 U	-
Acetone	**190**	**7,200 DE**	22 J	**310**	**3,300 DE**	**3,600 DE**	**54**	**79**	50
Acrylonitrile	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	-
Benzene	4.6	4.3	2.9 U	4.6 U	5.4	6.8	3.5	5.1	60
Bromobenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Bromochloromethane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Bromodichloromethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
Bromoform	13 U	14 U	12 U	18 U	16 U	19 U	12 U	16 U	-
Bromomethane	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	7.9 U	-
Carbon disulfide	18 J	16 J	7.8 J	17 J	34 J	28 J	27 J	62	-
Carbon tetrachloride	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	760
Chlorobenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	1,100
Chloroethane	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	7.9 U	-
Chloroform	4.8 U	5.2 U	4.4 U	6.9 U	6.0 U	7.2 U	4.4 U	6.0 U	370
Chloromethane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
cis-1,2-Dichloroethene	**420**	3.5 U	15	4.6 U	64	83	**280**	**320**	250
cis-1,3-Dichloropropene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
Dibromochloromethane	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
Dibromomethane	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	-
Dichlorodifluoromethane	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	-
Ethyl ether	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Ethylbenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	1,000
Hexachlorobutadiene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Isopropylbenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	2,300
Methyl tert butyl ether	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	7.9 U	930
Methylene chloride	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	50
n-Butylbenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	12,000
n-Propylbenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	3,900
Naphthalene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	6.5 J	12,000
o-Chlorotoluene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
o-Xylene	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	7.9 U	260
p-Chlorotoluene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
p-Isopropyltoluene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	2.7 J	10,000
p/m-Xylene	7.2	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	4.3 J	260
sec-Butylbenzene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	11,000
Styrene	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	5.8 U	7.9 U	-
tert-Butylbenzene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	5,900
Tetrachloroethene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	1,300
Toluene	17	52	4.4 U	4.5 J	27	33	9.8	21	700
trans-1,2-Dichloroethene	7.8	5.2 U	4.4 U	6.9 U	6.0 U	7.2 U	2.8 J	3.6 J	190
trans-1,3-Dichloropropene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	-
trans-1,4-Dichloro-2-butene	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Trichloroethene	3.2 U	3.5 U	2.9 U	4.6 U	4.0 U	4.8 U	2.9 U	4.0 U	470
Trichlorofluoromethane	16 U	17 U	15 U	23 U	20 U	24 U	14 U	20 U	-
Vinyl acetate	32 U	35 U	29 U	46 U	40 U	48 U	29 U	40 U	-
Vinyl chloride	6.4 U	6.9 U	5.9 U	9.2 U	8.1 U	9.6 U	**390**	**360**	20

Notes:

U = Not detected at the indicated reporting limit (RL).

J = Estimated value. The target analyte concentration is below the RL, but above the method detection limit (MDL).

D = Analyte concentration was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

- = No 6 NYCRR Part 375-6(a) Soil Cleanup Objective established.

Bold values exceed 6 NYCRR Part 375-6(a) Soil Cleanup Objectives.

ug/kg= micrograms per kilogram

E = Estimated value; level exceeded the limits of calibration.

GROUNDWATER CHEMICAL ANALYTICAL DATA, AUGUST 8, 2012
BLOCK 15950 LOT 29, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Location	MW-6S	MW-6I	MW-9S	MW-9I	MW-4S	MW-4I	PZ-3	GW-A		GW-B		NYSDEC Class GA Ambient Water Quality Standard
Sampling Interval (feet below grade)	2-12	28.6-38.6	3-13	27-37	3-18	28-38	28-38	20-24	27-29	13-17	25-27	
Volatile Organic Compounds (ug/l)												
1,1,1,2-Tetrachloroethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,1,1-Trichloroethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,1,2,2-Tetrachloroethane	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	5
1,1,2-Trichloroethane	38 U	1.5 U	1.5 U	1.5 U	38 U	30 U	6.0 U	380 U	60 U	38 U	15 U	1
1,1-Dichloroethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,1-Dichloroethene	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	3.5	120 U	20 U	12 U	5.0 U	5
1,1-Dichloropropene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,2,3-Trichlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,2,3-Trichloropropane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	0.4
1,2,4,5-Tetramethylbenzene	50 U	2.0 U	1.9 J	2.0 U	50 U	40 U	8.0 U	500 U	80 U	50 U	20 U	5
1,2,4-Trichlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,2,4-Trimethylbenzene	62 U	2.5 U	2.0 J	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,2-Dibromo-3-chloropropane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	0.04
1,2-Dibromoethane	50 U	2.0 U	2.0 U	2.0 U	50 U	40 U	8.0 U	500 U	80 U	50 U	20 U	5
1,2-Dichlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	3
1,2-Dichloroethane	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	0.6
1,2-Dichloropropane	25 U	1.0 U	1.0 U	1.0 U	25 U	20 U	4.0 U	250 U	40 U	25 U	10 U	1
1,3,5-Trimethylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,3-Dichlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	3
1,3-Dichloropropane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
1,4-Dichlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	3
1,4-Diethylbenzene	50 U	2.0 U	2.0 U	2.0 U	50 U	40 U	8.0 U	500 U	80 U	50 U	20 U	-
2,2-Dichloropropane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
2-Butanone	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	50
2-Hexanone	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	50
4-Ethyltoluene	50 U	2.0 U	0.8 J	2.0 U	50 U	40 U	8.0 U	500 U	80 U	50 U	20 U	-
4-Methyl-2-pentanone	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	50
Acetone	120 U	1.3 J	4.0 J	2.1 J	120 U	100 U	6.6 J	1,200 U	200 U	38 J	50 U	50
Acrylonitrile	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	5
Benzene	12 U	0.8	**4.4**	**1.7**	12 U	**22**	**16**	120 U	20 U	12 U	**4.2 J**	1
Bromobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Bromochloromethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Bromodichloromethane	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	50
Bromoform	50 U	2.0 U	2.0 U	2.0 U	50 U	40 U	8.0 U	500 U	80 U	50 U	20 U	50
Bromomethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Carbon disulfide	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	50
Carbon tetrachloride	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	5
Chlorobenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Chloroethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Chloroform	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	7
Chloromethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
cis-1,2-Dichloroethene	62 U	2.5 U	**8.4**	2.5 U	**1,400**	**910**	**110**	**8,600**	**1,500**	**1,100**	**430**	5
cis-1,3-Dichloropropene	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	0.4
Dibromochloromethane	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	50
Dibromomethane	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	5
Dichlorodifluoromethane	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	5
Ethyl ether	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	-
Ethylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Hexachlorobutadiene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	0.5
Isopropylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Methyl tert butyl ether	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	10
Methylene chloride	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
n-Butylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
n-Propylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Naphthalene	62 U	2.5 U	1.1 J	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	10
o-Chlorotoluene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
o-Xylene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
p-Chlorotoluene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
p-Isopropyltoluene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
p/m-Xylene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
sec-Butylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Styrene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
tert-Butylbenzene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Tetrachloroethene	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	5
Toluene	62 U	1.5 J	2.4 J	1.8 J	62 U	50 U	**6.6 J**	620 U	100 U	**25 J**	**7.8 J**	5
trans-1,2-Dichloroethene	62 U	2.5 U	1.4 J	2.5 U	62 U	50 U	**5.2 J**	620 U	100 U	62 U	25 U	5
trans-1,3-Dichloropropene	12 U	[illegible]	0.5 U	0.5 U	12 U	10 U	2.0 U	120 U	20 U	12 U	5.0 U	0.4
trans-1,4-Dichloro-2-butene	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Trichloroethene	12 U	0.5 U	0.5 U	0.5 U	12 U	10 U	**47**	120 U	20 U	**8.0 J**	5.0 U	5
Trichlorofluoromethane	62 U	2.5 U	2.5 U	2.5 U	62 U	50 U	10 U	620 U	100 U	62 U	25 U	5
Vinyl acetate	120 U	5.0 U	5.0 U	5.0 U	120 U	100 U	20 U	1,200 U	200 U	120 U	50 U	50
Vinyl chloride	**60**	1.0	**15**	**4.4**	**19 J**	**7.3 J**	4.0 U	**620**	**120**	**120**	**120**	2

Notes:

U = Not detected at the indicated indicated reporting limit (RL).
J = Estimated value. The target analyte concentration is below the RL, but above the method detection limit (MDL?.
Bold values exceed NYSDEC Class GA Ambient Water Quality Standard.

- = No NYSDEC Class GA Ambient Water Quality Standard established.
D = Analyte concentration was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
ug/l = micrograms per liter

FPM

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SOIL CHEMICAL ANALYTICAL DATA, AUGUST 8, 2012
BLOCK 15950 LOT 29, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Location	B-2	6 NYCRR Part 375-6(a) Soil Cleanup Objectives For Unrestricted Use
Sampling Interval (feet below grade)	5-8	
Semivolatile Organic Compounds (ug/kg)		
1,2,4,5-Tetrachlorobenzene	970 U	-
1,2,4-Trichlorobenzene	970 U	-
1,2-Dichlorobenzene	970 U	-
1,3-Dichlorobenzene	970 U	-
1,4-Dichlorobenzene	970 U	-
2,4-Dinitrotoluene	970 U	-
2,6-Dinitrotoluene	970 U	-
2-Chloronaphthalene	970 U	-
2-Methylnaphthalene	1,200 U	-
2-Nitroaniline	970 U	-
3,3'-Dichlorobenzidine	970 U	-
3-Nitroaniline	970 U	-
4-Bromophenyl phenyl ether	970 U	-
4-Chloroaniline	970 U	-
4-Chlorophenyl phenyl ether	970 U	-
4-Nitroaniline	970 U	-
Acenaphthene	780 U	20,000
Acenaphthylene	780 U	100,000
Acetophenone	970 U	-
Anthracene	580 U	100,000
Benzo(a)anthracene	580 U	1,000
Benzo(a)pyrene	780 U	1,000
Benzo(b)fluoranthene	580 U	1,000
Benzo(ghi)perylene	780 U	100,000
Benzo(k)fluoranthene	580 U	800
Benzyl Alcohol	970 U	-
Biphenyl	2,200 U	-
Bis(2-chloroethoxy)methane	1,000 U	-
Bis(2-chloroethyl)ether	870 U	-
Bis(2-chloroisopropyl)ether	1,200 U	-
Bis(2-Ethylhexyl)phthalate	970 U	-
Butyl benzyl phthalate	970 U	-
Carbazole	970 U	-
Chrysene	580 U	1,000
Di-n-butylphthalate	970 U	-
Di-n-octylphthalate	970 U	-
Dibenzo(a,h)anthracene	580 U	330
Dibenzofuran	970 U	-
Diethyl phthalate	970 U	-
Dimethyl phthalate	970 U	-
Fluoranthene	580 U	100,000
Fluorene	970 U	30,000
Hexachlorobenzene	580 U	-
Hexachlorobutadiene	970 U	-
Hexachlorocyclopentadiene	2,800 U	-
Hexachloroethane	780 U	-
Indeno(1,2,3-cd)pyrene	780 U	500
Isophorone	870 U	-
n-Nitrosodi-n-propylamine	970 U	-
Naphthalene	970 U	12,000
Nitrobenzene	870 U	-
NitrosoDiPhenylAmine(NDPA)/DPA	780 U	-
Phenanthrene	580 U	100,000
Pyrene	580 U	100,000

Notes:

U = Not detected at the indicated reporting limit (RL).
- = No 6 NYCRR Part 375-6(a) soil cleanup objective established.

ug/kg = micrograms per kilogram

FPM

S:\Alprof\Lot 29 Investigation\lot 29 soil.xls

SOIL VAPOR CHEMICAL ANALYTICAL DATA, AUGUST 8, 2012
BLOCK 15950 LOT 29, FAR ROCKAWAY BOULEVARD, QUEENS, NY

Sample Name	SV-1	SV-2	SV-3	SV-4	SV-5
Volatile Organic Compounds (microgram per cubic meter)					
1,1,1-Trichloroethane	0.94	0.83 U	0.83 U	0.83 U	1.0
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	0.83 U	0.83 U	20,000	0.83 U	0.83 U
1,1-Dichloroethane	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1-Dichloroethene	0.60 U	29	0.60 U	950	0.60 U
1,2,4-Trichlorobenzene	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2,4-Trimethylbenzene	57	42	45	14	49
1,2-Dibromoethane	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,2-Dichloroethane	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
1,2-Dichloropropane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
1,3,5-Trimethylbenzene	23	15	17	6.1	14
1,3-butadiene	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,3-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,4-Dichlorobenzene	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
1,4-Dioxane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
2,2,4-trimethylpentane	93	9.3	0.71 U	17	16
4-ethyltoluene	31	17	23	6.3	15
Acetone	1,300	2,300	11,000	10,000	2,000
Allyl chloride	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U
Benzene	45	14	4,300	2,100	18
Benzyl chloride	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Bromomethane	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
Carbon disulfide	0.47 U	0.47 U	0.47 U	3,000 J	11
Carbon tetrachloride	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U
Chlorobenzene	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
Chloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Chloroform	6.4	7.9	0.74 U	320	270
Chloromethane	3.3	0.31 U	0.31 U	0.31 U	0.31 U
cis-1,2-Dichloroethene	69	3,100	280,000	420,000	3,800
cis-1,3-Dichloropropene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Cyclohexane	73	26	0.52 U	0.52 U	0.52 U
Dibromochloromethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Ethyl acetate	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
Ethylbenzene	210	36	93	31	36
Freon 11	19	1.5	0.86 U	1.5	7.7
Freon 113	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Freon 114	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Freon 12	2.9	1.3	0.75 U	0.75 U	3.2
Heptane	200	30	370	0.62 U	36
Hexachloro-1,3-butadiene	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Hexane	170	150	0.54 U	240	48
Isopropyl alcohol	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
m&p-Xylene	720	120	340	94	120
Methyl butyl ketone	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Methyl ethyl ketone	52	160	520	0.90 U	130
Methyl isobutyl ketone	1.2 U	4.0	1.2 U	8.7	8.0
Methyl tert-butyl ether	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
Methylene chloride	2.5	0.95	0.53 U	0.53 U	1.6
o-Xylene	230	44	79	30	44
Propylene	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Styrene	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U
Tetrachloroethylene	7.3	6.5	29	780	47
Tetrahydrofuran	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Toluene	820	220	3,600 J	270	320
trans-1,2-Dichloroethene	0.60 U	14	1,800	6,800	64
trans-1,3-Dichloropropene	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Trichloroethene	540	3,400	5,200 J	490,000	30,000
Vinyl acetate	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Vinyl Bromide	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Vinyl chloride	0.39 U	110	6,300	0.39 U	0.39 U

Notes:

U = Analyte not detected above indicated reporting limit (RL).
J = Analyte detected at or below RL but above the method detection limit (MDL).

CHURCH PROPERTY
ENVIRONMENTAL DATA

565-0208

ANSON ENVIRONMENTAL LTD.

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Soil and Groundwater Sampling
Block 15950
Far Rockaway Boulevard
Far Rockaway, New York

October 28, 2002

Prepared for

Remedy, LLC
95072 Highway 89
PO Box 1036
Afton, Wyoming 83110

"Your Environmental Partner"

PLAINTIFF'S EXHIBIT
F-G-D 6
11/8/11

Soil and Groundwater Sampling
Block 15950
Far Rockaway Boulevard,
Far Rockaway, Queens

Introduction

PMK Group, Inc. performed an environmental investigation at the Far Rockaway Boulevard, Block 15950, Lot 29 property located in Far Rockaway, Queens, New York. In their September 13, 2002 report, PMK identified soil contamination that exceeded the New York State Department of Environmental Conservation (DEC) standards listed in the Technical and Administrative Guidance Memorandum (TAGM) # 4046. PMK's recommendations included additional soil and groundwater sampling to identify the vertical and horizontal extent of contamination. The contaminated soil samples were collected between 6.5-11.0 feet below grade surface at the locations identified on the site diagram provided by PMK.

Anson Environmental Ltd. (AEL) contracted with Remedy LLC (Remedy) to conduct the recommended sampling to identify the vertical and horizontal of contamination in the soils on-site and the horizontal extent of contamination in the groundwater on-site. AEL chose sampling locations that were proximate to the PMK sampling locations and near the former location of the building.

Soil Sampling Investigation

Between the samplings in August by PMK and October by AEL, a contractor placed significant amounts of lumber and other debris on the site (see Photographs in Appendix 1). The owner of the lumber appears to be a contractor performing roadwork in the vicinity of the subject site.

On Thursday, October 3, 2002, AEL was on-site to conduct the soil and groundwater sampling. Soil boring locations were chosen based on PMK's previous sampling and the approximate former location of a building. The former location of the building was based on visual observation while on-site and on historical Sanborn fire insurance maps (Appendix 2).

Soil sampling was conducted utilizing a van-mounted Geoprobe with a four-foot long macro-core sampler that had clean dedicated acetate liners installed when each sample was collected. The macro-core was advanced to depths at different boring locations and all borings were advanced to a depth of at least eight feet below grade. Groundwater was encountered at a depth of approximately 7.5 feet below grade surface.

AEL field screened the samples using a calibrated Organic Vapor Monitor (OVM) model 580B. The data from this screening are included on the boring logs located in Appendix 3.

The table below identifies the depth at which samples were collected at each boring location (Figure 1), the field meter readings for total volatile organic compounds and which samples were selected for laboratory analysis. Samples submitted for laboratory analysis were analyzed using EPA method 8260.

Boring	Depths Sampled	Field Meter Reading in parts per million	Submitted for Laboratory Analysis	Comments
3B1	0-12 feet below grade	All samples zero ppm	No soil samples submitted to lab. Groundwater sampled submitted for analysis	Soils were not discolored and did not have unusual odors
3B2	0-12 feet below grade	All samples zero ppm	No samples submitted to lab	Soils were not discolored and did not have unusual odors
3B3	0-8 feet below grade	All samples zero ppm	3B3 6-7 feet submitted for analysis	Soils at 6-7 feet were discolored
3B4	0-8 feet below grade	All samples zero ppm	3B4 soil sample from 6-7 feet submitted for analysis and groundwater sample submitted for laboratory analysis	Soils at 6-7 feet had an unusual odor
3B5	0-8 feet below grade	All samples zero ppm	3B5 6-7 feet submitted for analysis	Soil at 6-7 feet were analyzed to determine the extent of contamination
3B6	0-8 feet below grade	Samples below 4 feet had elevated concentrations of volatile organic compounds. Field meter readings increased with depth	No samples were submitted for laboratory analysis	Soils at 6-8 feet were discolored and were dark brown in color
3B7	Only groundwater sample collected at 7.5-9 feet below grade		Groundwater sample submitted for analysis	
3B8	0-8 feet below grade	All samples zero ppm	3B8 7-8 feet submitted for analysis	Soils at 7-8 feet were slightly discolored and had an odor. Sample was used to define extent of contamination
3B9	0-8 feet below grade	Samples from 5-8 feet had elevated field meter readings and concentrations increased with depth	No samples submitted for analysis	Samples were discolored (black) from 6-8 feet below grade
3B10	0-8 feet below grade	Samples from 6-8 feet had elevated meter readings and increased with depth	No samples submitted for analysis	Samples from 6-8 feet had an odor
3B11	0-8 feet below grade	Samples from 6-8 feet had elevated meter readings and increased with depth	No samples submitted for analysis	Samples from 6-8 feet had an odor and were discolored (brown/black)

At three locations AEL collected water sample using the van-mounted Geoprobe and the water sampling probe. The probe was advanced to a depth of approximately 7-9 ft bgs at each location. Once at the chosen depth the probe was removed to expose the stainless steel screen to the groundwater. Water samples were collected through the stainless steel screen utilizing dedicated polyethylene tubing and a decontaminated stainless steel check valve.

Laboratory Information

Based on the readings from the OVM and visual observations AEL selected seven soil samples and three water samples for analysis by EcoTest Laboratories Inc., in North Babylon, NY. Samples were analyzed for volatile organic compounds utilizing EPA Method 8260.

Soil samples 3B2 6-7 feet bgs, 3B3 6-7 feet bgs and 3B8 7-8 feet bgs and groundwater sample 3B1 did not have volatile organic compounds above the method detection limit used by the laboratory. Therefore, none of these compounds were present in these samples.

The compounds identified above the laboratory method detection limits are summarized below and compared to either the NYSDEC TAGM # 4046 Recommended Soil Cleanup Objectives for soil samples or the New York State Department of Health (NYSDOH) Division of Water Technical and Operation Guidance Series (TOGS) 1.1.1 for groundwater samples. The actual laboratory analytical data sheets are attached in Appendix 4.

Summary of Detected Compounds
Far Rockaway Blvd, Queens, NY
Block 15950, Lot 29

Location	Material	Compound	Detection Level (ppb)	NYSDEC Rec Soil Cleanup Objective (ppb)	NYSDOH TOGS (ppb)
3B4	Water	c-1,2-Dichloroethene	46	**	5
		t-1,2-Dichloroethene	1	**	5
		Trichloroethylene	85	**	5
		Vinyl Chloride	4	**	2
3B6 7-8	Soil	124-Trimethylbenzene	14,000	3,300	**
		1245 Tetramethylbenzene	5,600	*	**
		135-Trimethylbenzene	4,600	200	**
		Ethyl Benzene	440	5,500	**
		Isopropylbenzene	240	2,300	**
		Xylene	1,870	1,200	**
		n-propylbenzene	670	3,700	**
		Napthalene (v)	1,600	13,000	**
		p-Ethyltoluene	3,000	*	**
		p-Isopropyltoluene	1,200	10,000	**
		sec-Butylbenzene	460	10,000	**
3B7	Water	124-Trimethylbenzene	96	**	5
		1245 Tetramethylbenzene	21	**	5
		135-Trimethylbenzene	27	**	5
		Benzene	3	**	1

		Ethyl Benzene	11	**	5
		Isopropylbenzene	3	**	5
		Xylene	**59**	**	5
		n-Propylbenzene	6	**	5
		Napthalene (v)	**90**	**	10
		p Diethylbenzene	44	**	*
		p-Ethyltoluene	34	**	*
		p-Isopropyltoluene	9	**	5
		sec-Butylbenzene	2	**	5
		Toluene	15	**	5
		Vinyl Chloride	14	**	2
3B9 7-8	Soil	124-Trimethylbenzene	**25,000**	3,300	**
		1245- Tetramethylbenzene	12,000	*	**
		135-Trimethylbenzene	**4,400**	200	**
		Ethyl Benzene	1,500	5,500	**
		Isopropylbenzene	930	2,300	**
		Xylene	**2,800**	1,200	**
		n-Propylbenzene	2,600	3,700	**
		Napthalene (v)	710	13,000	**
		p-Ethyltoluene	5,400	*	**
		p-Isopropyltoluene	1,800	10,000	**
		sec-Butylbenzene	1,800	10,000	**
3B10 7-8	Soil	124-Trimethylbenzene	1,500	3,300	**
		1245 tetramethylbenzene	2,500	*	**
		135-Trimethylbenzene	**290**	200	**
		n-Propylbenzene	220	3,700	**
		p-Ethyltoluene	380	*	**
		sec-Butylbenzene	180	10,000	**
3B11 7-8	Soil	124-Trimethylbenzene	**15,000**	3,300	**
		1245 Tetramethylbenzene	13,000	*	**
		135-Trimethylbenzene	**5,300**	200	**
		Ethyl Benzene	580	5,500	**
		Xylene	**2,160**	1,200	**
		n-Propylbenzene	930	3,700	**
		Napthalene (v)	9,600	13,000	**
		p-Ethyltoluene	4,600	*	**
		p-Isopropyltoluene	2,100	10,000	**
		sec-Butylbenzene	670	10,000	**

Conclusions and Recommendations

EDR, an independent database company, was used to search environmental databases to determine if there were recorded spills or illegal discharges either on the subject property or on other properties nearby. The search was made difficult because there is no specified street address for the site. The result of the search was that no spills or discharges were identified on the subject property (Appendix 5).

The historical Sanborn maps (Appendix 2) show that in 1951 the building on-site was utilized as a garage. AEL suspects that there may have been either a waste oil container on-site that leaked into the soils or a floor drain with a direct discharge to the soil. In either case, the groundwater was subsequently contaminated by discharges to the soil.

The NYSDEC Region II office has been contacted about this soil and groundwater contamination and a spill has been reported to that agency.

AEL recommends that the soil in the southern portion of the lot be excavated and disposed of off site. (Based on the laboratory data, the contaminated soil would most likely be classified as non-hazardous waste.) The excavation would occur by removing the top four feet of soil, which is not contaminated and stockpiling it for re-use as backfill. The contaminated soil in the 4-8 ft bgs range will be excavated, placed in containers and disposed of off site. AEL the approximate dimensions of the area with contaminated soils is 50 feet wide by 70 feet long and 4 feet deep (Figure 2). The contaminated soils will be identified both by screening them using an OVM and visually, as the contaminated soils are discolored.

Once the contaminated soils are excavated, ORC (oxygen-releasing compound) could be added to the bottom of the excavation where it can come into contact with the groundwater. This compound will enhance the natural attenuation of the remaining contamination through bioremediation. The clean soil that was stockpiled will be used to fill the excavation and thereby return the site to near its original grade.

Due to the elevated level of contaminants in the groundwater, the installation of monitoring wells may be required by the NYSDEC. Although the groundwater is not a potable water supply for the Queens County area, the agency may require ongoing monitoring to verify that the concentration of contaminants continues to decline.

A more detailed remediation plan can be developed by contacting the NYSDEC to determine the requirements of the cleanup activities.

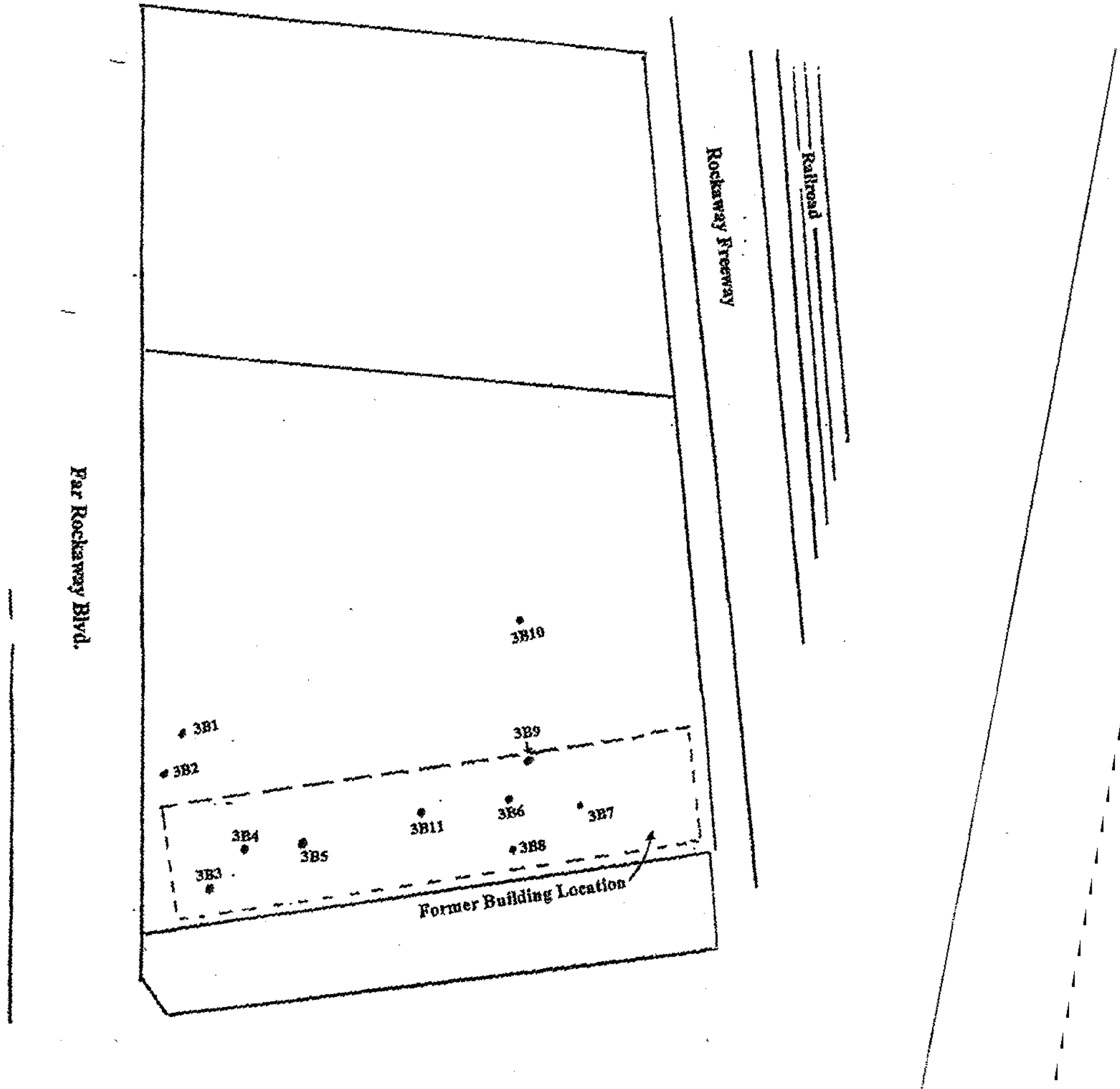

Figure 1
October 3, 2002 Sampling Locations by Anson Environmental Ltd.

Not to Scale

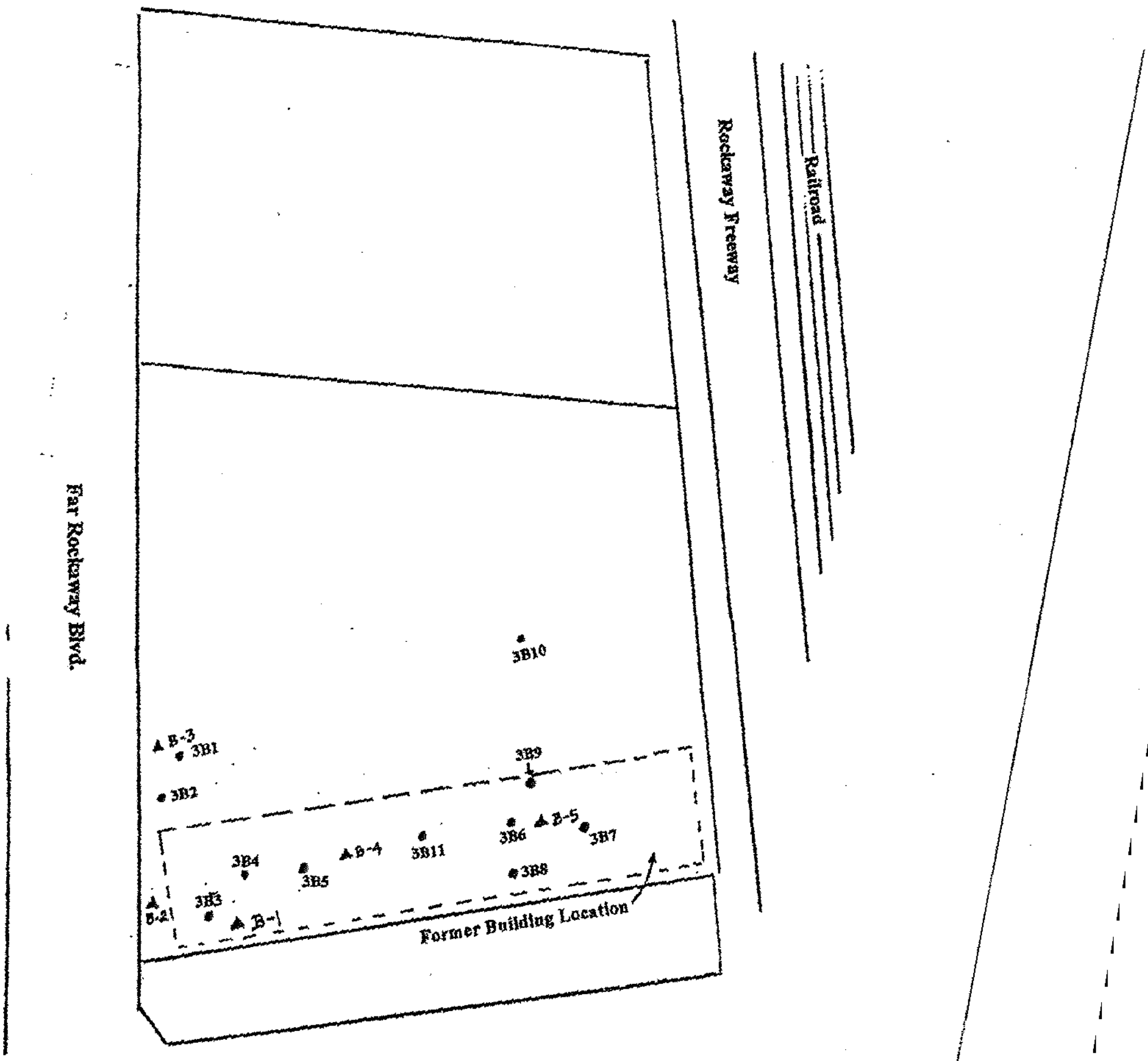

Figure 2
Sampling Locations by PMK and Anson Environmental

● Anson Environmental Locations
▲ PMK Locations

Not to Scale

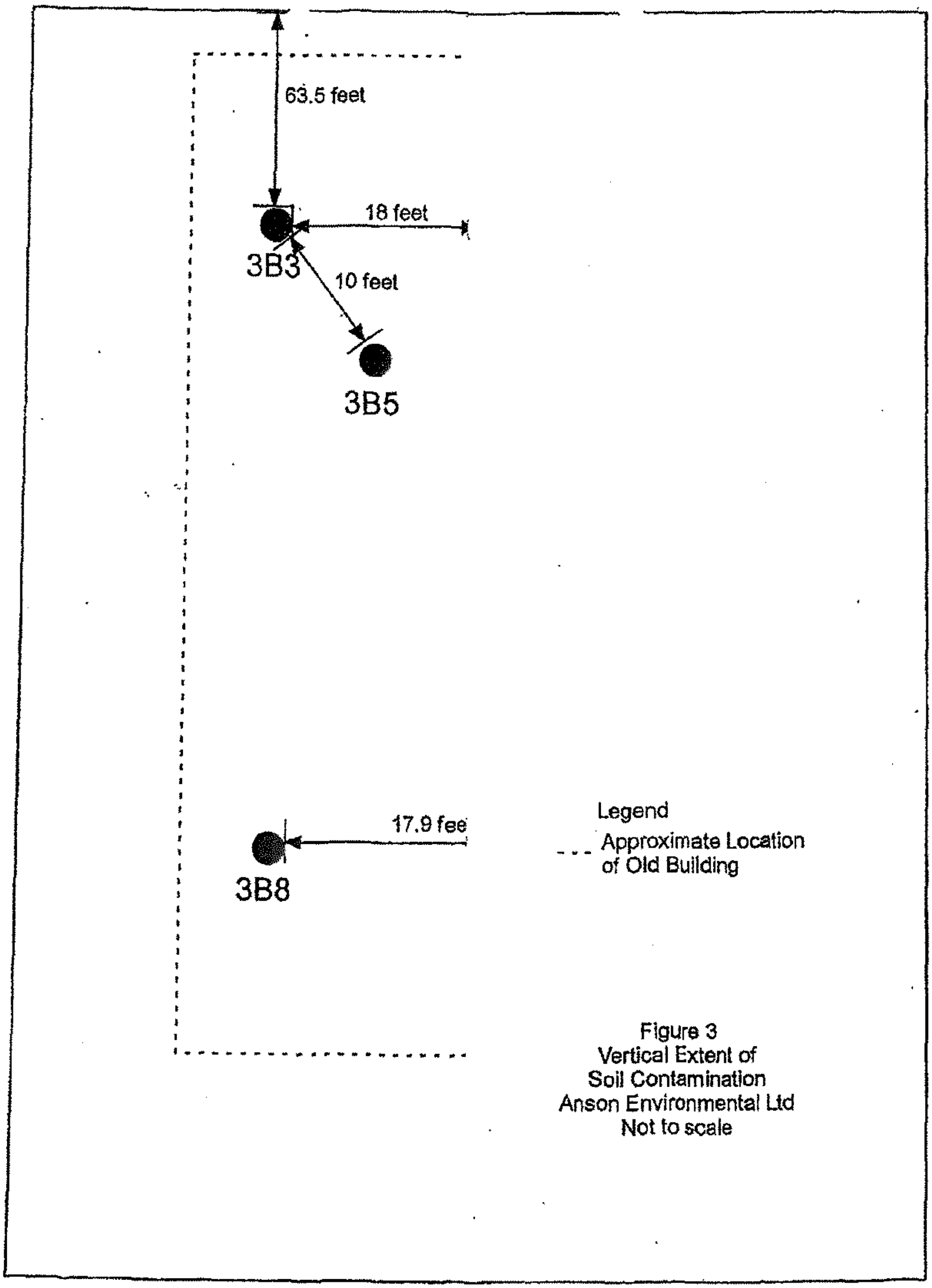

Figure 3
Vertical Extent of
Soil Contamination
Anson Environmental Ltd
Not to scale

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9.

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Soil Remediation Report

for

Vacant Property

at

Far Rockaway Boulevard
Far Rockaway, NY

Spill No. 02-07599

Date: February 10, 2005

Prepared by:

Anson Environmental Ltd.
771 New York Avenue
Huntington, NY 11743

Project No. 02194

"Your Environmental Partner"

Alprof 558

Soil Remediation Report
for
Vacant Property
at
Far Rockaway Boulevard
Far Rockaway, New York

Spill No. 02-07599

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4. Two underground storage tanks excavated from the Vacant Property
5. AB Oil Services vacuum truck operator removing floating product from excavation at Vacant Property
6. Track excavator operator installing test holes at southwest section of former building foundation

Appendices

Appendix 1	Laboratory Analytical Report for Soil Sample, Sample Date: May 27, 2004
Appendix 2	Laboratory Analytical Report for Greenish Colored Soil Sample, Sample Date: June 14, 2004
Appendix 3	Letter to NYSDEC Reporting Trichloroethene Contaminated Soils at Vacant Property, Date: June 16, 2004
Appendix 4	Laboratory Analytical Report for Soil Sample Collected from Stockpiled Petroleum Contaminated Soils, Sample Date: June 16, 2004
Appendix 5	Non-Hazardous Special Waste Manifests and Load Receipts for Petroleum Contaminated Soils Transported to Coplay Aggregate Quarry, Whitehall, PA, Transport Dates: June 15 through 19, 2004
Appendix 6	Non-Hazardous Manifests for Liquid Oil/Water Mixture Transported to: AB Oil Services, Bohemia, NY, Transport Dates: June 15 through 25, 2004
Appendix 7	Laboratory Analytical Report for Soil Samples Collected from Stockpiled Trichloroethene Contaminated Soils, Sample Date: October 20, 2004
Appendix 8	Hazardous Waste Manifests and Transporter Logs for Trichloroethene Contaminated Soils Transported to: CWM Chemical Service LLC Model City, NY, Transport Dates: November 16 through 19, 2004
Appendix 9	Non-Hazardous Special Waste Manifests and Load Receipts for Petroleum Contaminated Soils Transported to: Coplay Aggregates Quarry Model City, NY, Transport Dates: November 17 and 18, 2004

Soil Remediation Report
for
Vacant Property
at
Far Rockaway Boulevard
Far Rockaway, New York

Spill No. 02-07599

1.0 Introduction/Purpose

This Soil Remediation Report describes the contaminated soil excavation and disposal activities performed by Anson Environmental Ltd. (AEL) at the vacant property located at Far Rockaway Boulevard, Far Rockaway, New York during June through November 2004.

On March 31, 2003, AEL submitted to New York State Department of Environmental Conservation (NYSDEC) a Corrective Action Plan (CAP) to remediate a below grade petroleum spill in a portion of the vacant property (Figure 1). On April 25, 2003, NYSDEC approved the CAP with a future requirement that both soil and groundwater collected samples be analyzed for concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) using EPA Methods 8021 and 8270.

The CAP was based on soil and groundwater samples collected in August 2002 by the PMK Group, Inc. (PMK), Cranford, New Jersey when they found soil and groundwater contamination from VOCs that exceeded NYSDEC recommended soil cleanup objectives (RSCOs) and standards for groundwater.

During October 2002, based on the PMK findings, AEL performed additional soil and groundwater sampling to determine the horizontal and vertical extent of site contamination. AEL collected soil and groundwater samples by installing borings at approximately the same locations used by PMK (Figure 2). The laboratory analysis of the samples collected by AEL confirmed that on-site soil and groundwater is indeed contaminated. Based on the laboratory data, AEL contacted NYSDEC, Region 2 to alert them of the soil and groundwater conditions on-site. Subsequently, NYSDEC assigned Spill No. 02-07599 to the property.

The results of the October 2002 AEL soil and groundwater investigations are presented below in Sections 3.0. and 4.0 of the CAP.

The stated objective of the CAP was to remediate the on-site contaminated subsurface soils on the subject property. The remediation method described in the CAP required the excavation and disposal of the contaminated soil on-site to eliminate the source of the on-site groundwater contamination.

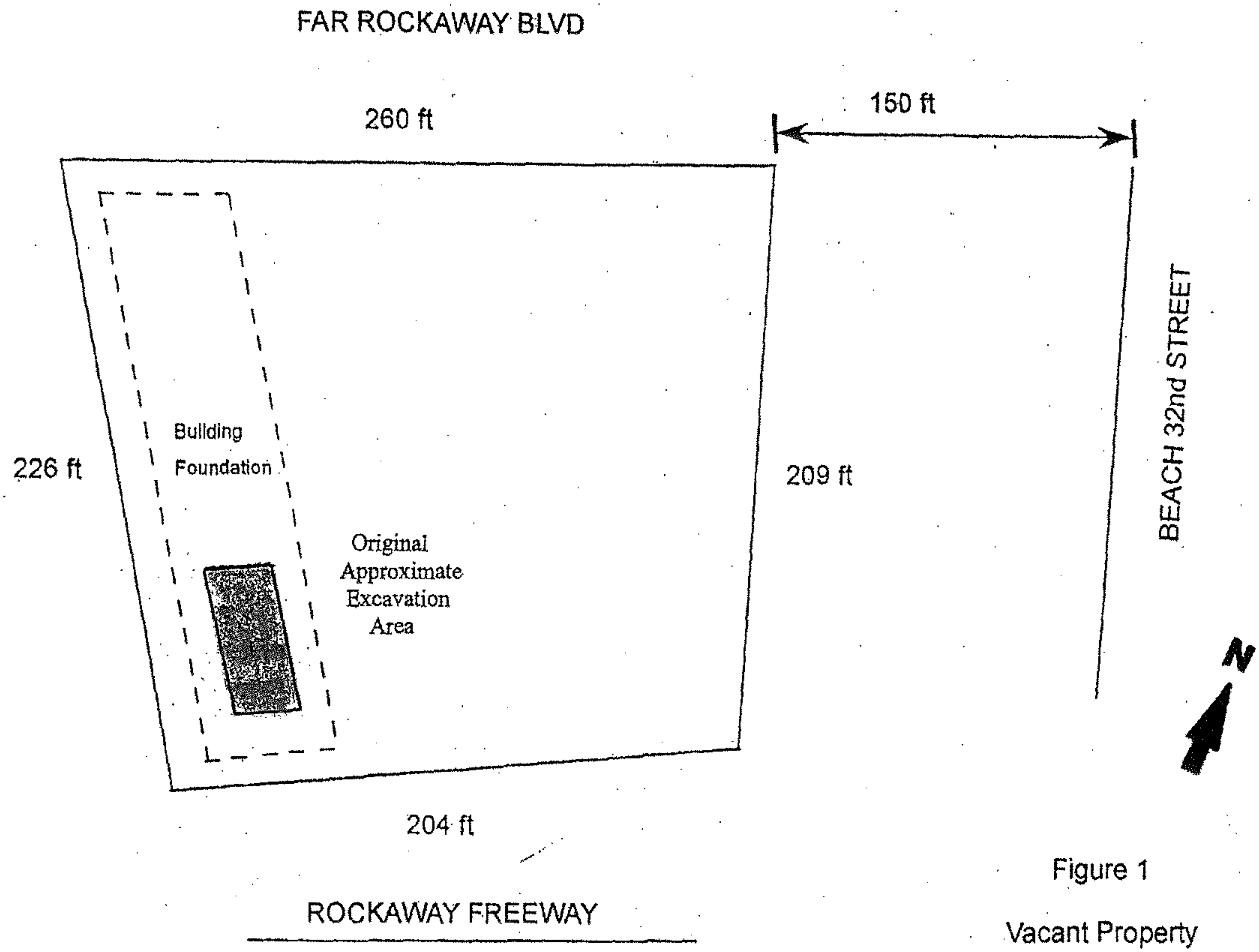

Figure 1

Vacant Property
at
Far Rockaway Blvd.
Far Rockaway, NY

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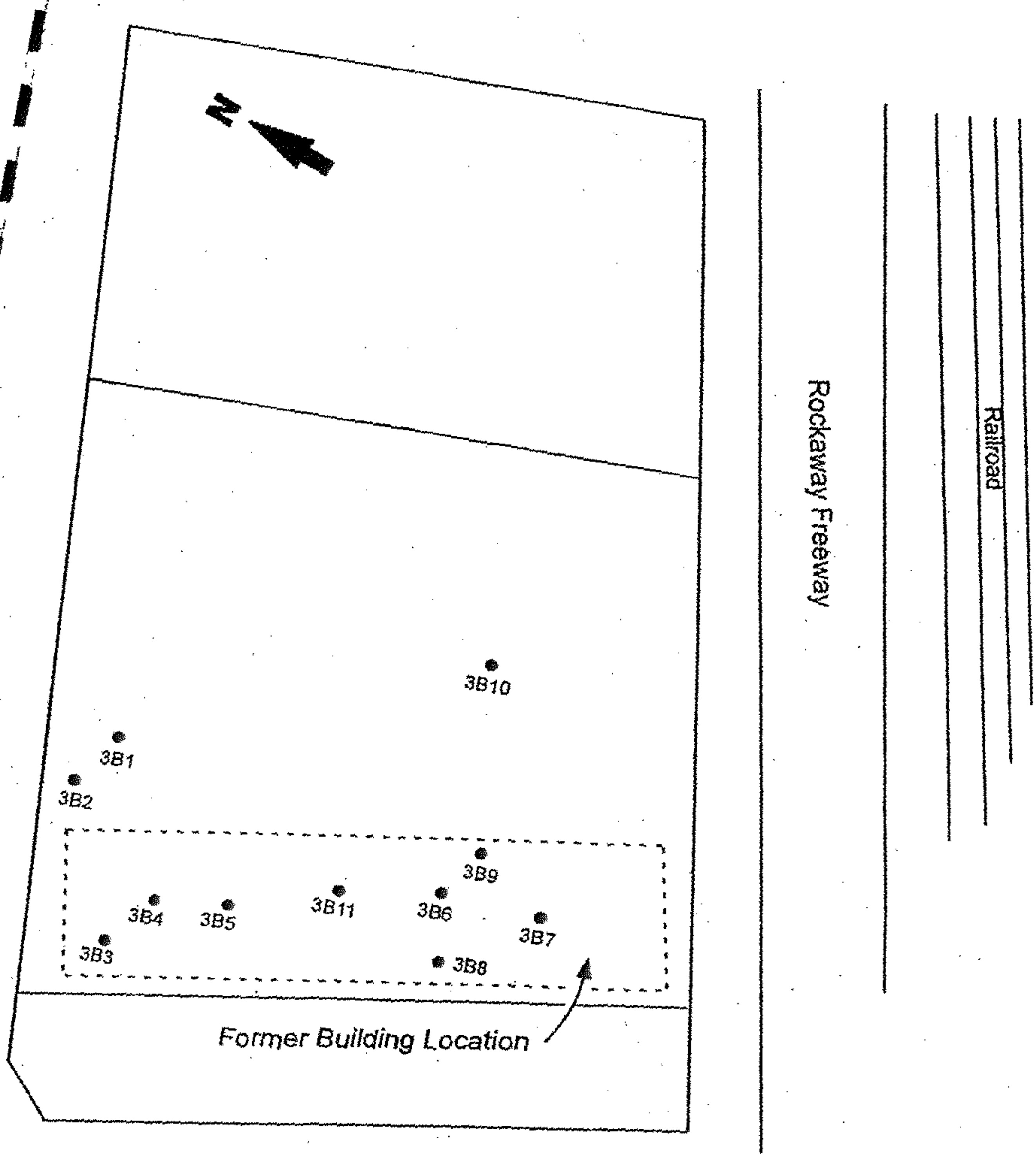


SCALE: NONE

Figure 2

October 3, 2002
Sampling Locations

by

Anson Environmental Ltd.

Alprof 564

In accordance with the CAP, the excavation of contaminated soils was followed by backfilling with clean soil. The CAP also stipulated that groundwater conditions on the vacant property should be monitored on a quarterly schedule after four monitoring wells are installed on-site.

2.0 Site Description

The subject property is located approximately 150-feet west of the intersection of Far Rockaway Boulevard and Beach 32nd Street, Far Rockaway, Queens County, New York (Figure 1).

The property is somewhat rectangular in shape and measures approximately 260-feet in the east/west direction at its northern boundary along Far Rockaway Boulevard (Figure 1). The property measures approximately 226-feet in the north/south direction along its western boundary and approximately 209-feet in the north/south direction along its eastern boundary. The southern boundary of the property is adjacent to the Rockaway Freeway and measures approximately 204-feet in the east/west direction. The approximate size of the property is 1.3 acres.

New York City tax roles designate the property as Block 15950, Lot 29 (Figure 3). The property is currently vacant and contains remnants of a building foundation that previously existed on the site. Some areas of the vacant property show evidence of illegal dumping. AEL investigations concerning the past uses of the former building on the vacant property revealed that it once was used as a plumbing supply and after that as a garage facility.

3.0 Excavation of Petroleum-Contaminated Soils

The soil and groundwater investigations performed by AEL in October 2002 indicated that the petroleum-contaminated soils on the vacant property were located approximately 4 to 8-feet below grade surface (bgs) and the soils from 0 to 4-feet bgs were not contaminated. The area of this underground spill was estimated to be 50-feet wide in the east/west direction and 70-feet in the north/south direction. AEL noted during their investigation that the contaminated soils were odorous and visually discolored.

On May 27, 2004, a hand auger was used to collect a soil sample below grade in the area where AEL expected to begin excavation activities. This sample was collected for laboratory analysis to characterize the soil for future acceptance at a disposal facility. A copy of the laboratory report for the collected sample is presented in Appendix 1.

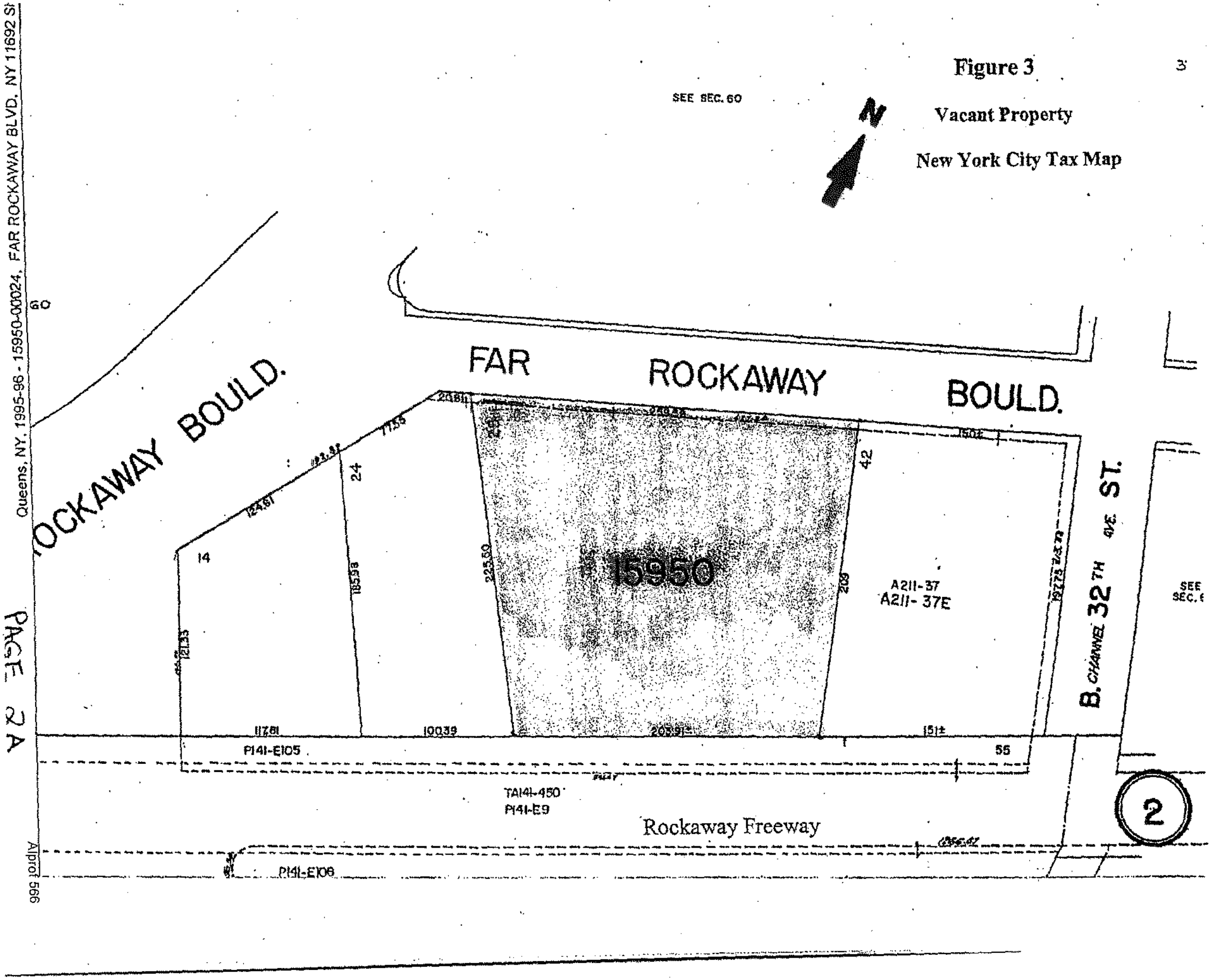
3.1 Excavation Activities During June 2004

On June 14, 2004, based on the aforementioned information and using a large track excavator, AEL began the excavation activity near the center of the spill area. Excavated soils were separated into those that were discolored and emitted petroleum type odors, and those that were visually clean soils and emitted no odor. The discolored and petroleum-contaminated soils were stockpiled on plastic awaiting proper disposal off-site. This method was followed for most of the first day of the excavation activity. Later in the day, in an attempt to define the perimeter of the petroleum contamination it was decided to install test excavations using the track excavator. One test excavation located at the southwest corner of the foundation of the building that was

Figure 3

Vacant Property

New York City Tax Map



formerly erected on the property revealed a pocket of greenish colored soil that had a strong solvent odor. This greenish colored soil was separated from all other excavated soils and stockpiled on plastic. A sample of the greenish colored soil was collected for laboratory analysis by Long Island Analytical Laboratories, Inc., Holbrook, New York using EPA Method 8260. The laboratory data revealed that the sample contained elevated concentrations of trichloroethene, 13,804 ppm (parts per million) and probably other solvents. The elevated concentration of trichloroethene caused the laboratory measurement equipment to reduce sensitivity to compounds with lesser concentrations. A copy of the complete laboratory report for the collected sample is presented in Appendix 2. On June 16th, immediately after the laboratory report revealed to AEL that an elevated concentration of trichloroethene was present in the collected soil sample, AEL notified NYSDEC Region 2 Spill Manager, Mr. Timothy DeMeo, of the soil condition by Fax and U.S. Mail (Appendix 3).

A sample was also collected from the stockpiled petroleum-contaminated soils and delivered to Long Island Analytical Laboratories where it was analyzed for disposal purposes using EPA Methods 8260. A copy of the laboratory analytical report for this sample is presented in Appendix 4.

A barrier fence was installed around the area at the southwest corner of the former building location where the soil contaminated with trichloroethene was discovered. This area would be further excavated at a later date.

Excavation activities continued near the center of the underground petroleum spill area. This activity continued through the month of June 2004. As the excavation area expanded and groundwater was exposed, floating petroleum product appeared on the groundwater surface (Photo 3). On most days a vacuum truck from AB Oil Services, Bohemia, New York was on-site to pump off the floating product (Photo 4). Eventually the excavated area extended to the southern former building foundation that is located approximately 45-feet north of the curb running east/west along the north side of Rockaway Freeway (Figure 4).

On June 18th two underground storage tanks (USTs) were discovered inside and adjacent to the foundation of the former building at the vacant property. One capacity of one UST was estimated at 1500 gallons and the smaller UST 300 gallons. Both USTs were excavated and upon inspection appeared not to be leaking (Photo 5). Subsequently, the USTs were transported off-site for disposal.

As the excavation of the petroleum-contaminated soils continued disposal trucks arrived on-site and transported the soils to a landfill at Coplay Aggregates Quarry, Whitehall, Pennsylvania. By June 29, 2004, approximately 1350 tons of petroleum-contaminated soil was transported off-site for disposal at Coplay Aggregates Quarry. A copy of the Non-Hazardous Waste Manifest and the associated disposal facility weight receipt for each disposal truck is presented in Appendix 5.

During June 2004, AB Oil Services transported off-site to their facility for disposal 12,430 gallons of an oil and water mixture that was pumped off the groundwater exposed during the excavation activity. The Non-Hazardous Waste Manifests and load volume history for this off-site transport is presented in Appendix 6. AB Oil Services is a permitted waste handling facility.

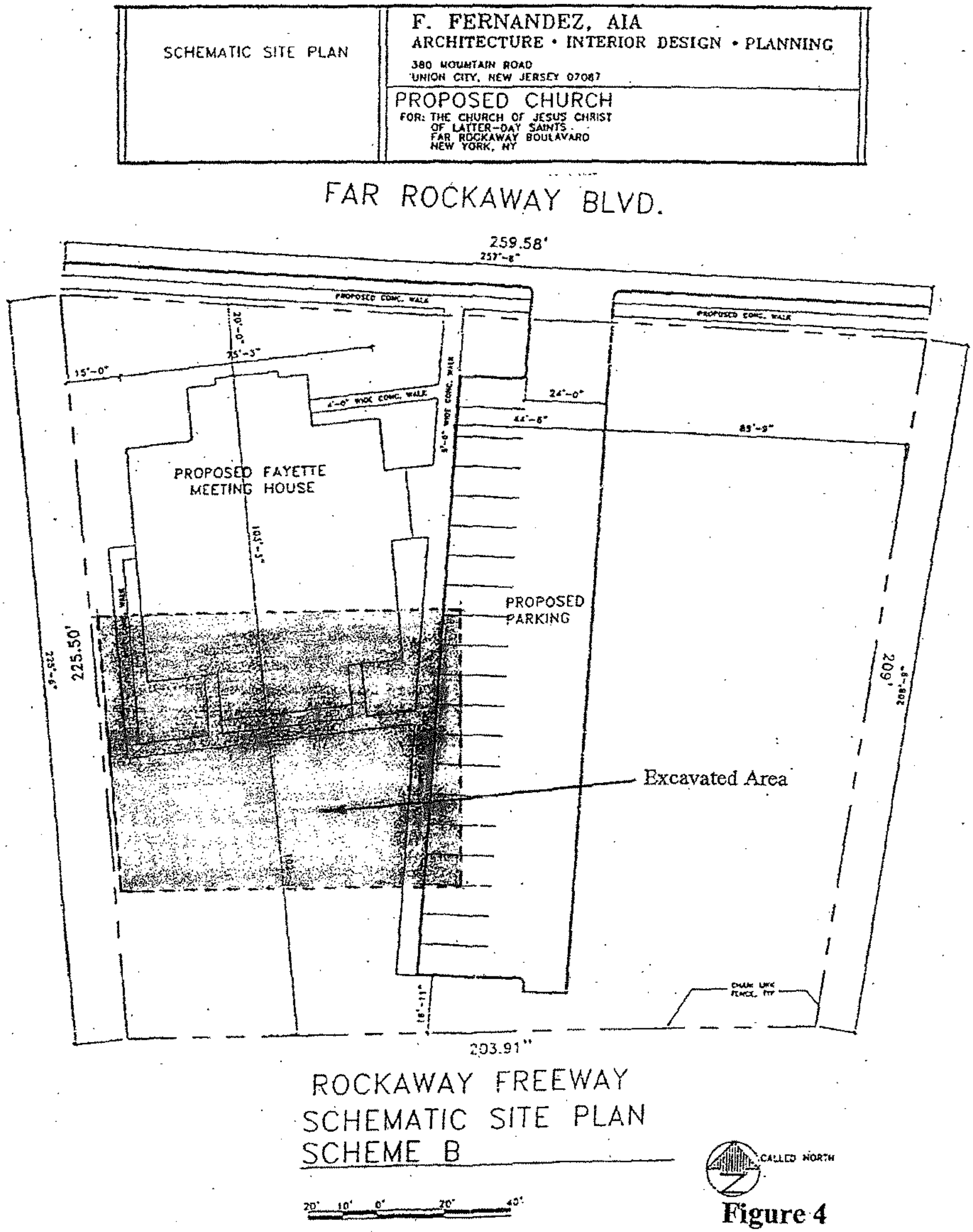


Figure 4

Extent of Excavation at Vacant Property October 2004

Excavation and disposal activities were suspended during July, August and September 2004 while disposal facilities were contacted that could possibly accept the soils contaminated with trichloroethene.

3.2 Excavation Activities During October 2004

On October 20, 2004, to define the extent of the soils contaminated with trichloroethene and using a track excavator, test holes were installed approximately 10-feet from the southwest corner of the former building foundation on the vacant land (Photo 6). These test holes were advanced to the groundwater interface and revealed no evidence that the trichloroethene contamination extended onto the property to the west of the subject vacant property. Work continued throughout the day excavating additional trichloroethene-contaminated soils from the area within and just outside the southwest area of the building foundation.

During the day petroleum-contaminated soils were also excavated at contiguous areas where the greenish colored soils met petroleum-contaminated soils. The newly excavated trichloroethene-contaminated soils and the petroleum-contaminated soils were stockpiled on separate plastic areas for later disposal.

By the end of the day the southwest area of the foundation was backfilled to grade level with clean recycled concrete aggregate. Based on the test hole excavations that defined the limits of the contaminated areas visually and the successful excavation of those contaminated soils encountered during the excavation activity, no additional excavation activities were planned.

Samples were collected from the newly excavated stockpiled trichloroethene-contaminated soils in anticipation of transporting the soils to a disposal facility. The collected samples were delivered to American Analytical Laboratories, Farmingdale, New York where they were analyzed for concentrations of VOCs using EPA Method 8260. A copy of the laboratory analytical report is presented in Appendix 7.

3.3 Excavated Soils Transported for Disposal During November 2004

On November 15, 2004, AEL returned to the vacant property with a track excavator and began loading the trichloroethene-contaminated soils into disposal trucks for transport to the landfill at CMW Chemical Services, Inc., Model City, New York. This effort was continued on November 16 and 17, 2004 as these contaminated soils were transported off-site as hazardous waste by a total of 16 disposal trucks. A copy of the Hazardous Waste Manifest and Transporter Log for each disposal truck is presented if Appendix 8. The total recorded weight of the soils contaminated with trichloroethene transported to Model City in November is 418.31 tons.

On November 17 and 18, 2004, disposal trucks were also on-site to transport off-site the remaining non-hazardous waste containing petroleum-contaminated soils. These soils were transported to Coplay Aggregates Quarry, Whitehall, PA. A copy of the Non-Hazardous Waste Manifests and associated disposal site receipt for each disposal truck is presented in Appendix 9.

The total recorded weight of the non-hazardous petroleum-contaminated soils transported for disposal in November is recorded as 341.46 tons.

4.0 Conclusions and Recommendations

Based on the excavation activities performed at the vacant property, it appears that hazardous wastes and petroleum products have been discharged directly into the subsurface during past business operations at the site. Most of these discharges have occurred at the southwest quadrant of the vacant property.

The following is a listing of the total non-hazardous waste petroleum-contaminated soils removed from the site for disposal:

Dates	Quantity	Disposal Facility
6/15 to 6/29/2004	13,541 tons	Coplay Aggregates Quarry Whitehall, PA
11/17 and 11/18/2004	341 tons	Coplay Aggregates Quarry, Whitehall, PA
	Total = 13,882 tons	

The following is a listing of the total non-hazardous waste oil/water mixture removed from the site for disposal:

Dates	Quantity	Disposal Facility
6/15 to 6/25/2004	12,430 gallons	AB Oil Service, Bohemia, NY

The following is a listing of the total hazardous waste trichloroethene-contaminated soils removed from the site for disposal:

Dates	Quantity	Disposal Facility
11/16 to 11/19/2004	418 tons	CWM Chemical Services, Model City, NY

AEL believes that most of the contaminated soils on the vacant property have been removed and disposed of properly. Remaining contaminated soils can be expected to decompose by natural attenuation. The removal of the contaminated soils has reduced the sources of contamination that impact the quality of the groundwater on-site. However, it is recommended that the ongoing quality of the groundwater be determined by sampling the groundwater on a quarter year schedule.

To implement groundwater sampling it is recommended that monitoring wells be installed at the four corners of the vacant property. Groundwater samples collected from these monitoring wells shall be submitted to a New York State approved laboratory where they will be analyzed for concentrations of volatile organic compounds and semi-volatile organic compounds using EPA Methods 8260, 8021 and 8270.

The owner of the vacant property, Council of Bishop, Church of Jesus Christ and the Latter-Day Saints, is planning to construct a church building on the vacant property in the spring of 2005. To prevent possible destruction of the groundwater monitoring wells during construction activities, AEL recommends that the wells be installed after the building is erected.

ANSON ENVIRONMENTAL

Corrective Action Plan Addendum Preliminary Report

for

Soil and Groundwater Investigation

Location:

Spill # 0207599
Vacant Property
Beach 32nd Street and Far Rockaway Boulevard
Far Rockaway, New York

Date: July 5, 2006

Report Prepared for:

Mr. Christopher Magee
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support, 11th Floor
625 Broadway
Albany, New York 12233-7020

Prepared by:

Anson Environmental Ltd.
771 New York Avenue
Huntington, New York 11743

Project No. 02194

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Figures

Appendices

1.0 Introduction

This Anson Environmental Ltd. (AEL) preliminary report describes the Corrective Action Plan (CAP) Addendum activities performed at the Vacant Property located at Far Rockaway Boulevard and Beach 32nd Street, Far Rockaway, New York. The work described herein was performed in accordance with the CAP Addendum for the site dated October 6, 2005. This site is assigned Spill No. 0207599 by New York State Department of Environmental Conservation (NYSDEC).

The CAP Addendum required the installation of three groundwater monitoring wells, groundwater sampling within an area on the site where contaminated soils were excavated in 2004, soil and groundwater sampling around the perimeter of that area, and soil vapor sampling at on-site locations outside of the excavated area. After the samples were collected they were delivered to Severn Trent Laboratories (STL), Shelton, Connecticut for analysis using analytical methods prescribed in the CAP Addendum. This report contains summaries and copies of the STL analytical reports.

2.0 Groundwater Monitoring Wells

On February 22, 2006, three groundwater monitoring wells were installed at the site by the AEL drilling contractor Land, Air and Water Environmental Services (LAWES), Center Moriches, New York. The locations of the three wells at the site are indicated in Figure 1.

LAWES used a drill rig equipped with hollow stem augers to install three groundwater monitoring wells to a nominal depth of 16-feet below grade. The wells were installed with Schedule 40, 4-inch diameter, flush joint PVC pipe with 10-feet of #20 slot screen. The wells were gravel packed from one-foot below the screen to two-feet above the screen with #2 gravel pack. A fine sand seal of Morie #00 sand was installed above the gravel pack and flexible bentonite seal was emplaced above the sand seal. Each well was grouted from the bentonite seal to grade level with a neat cement/bentonite grout. Each well was finished above grade with a locking cap and a locking metal standpipe.

On March 7, 2006, AEL field technicians developed each of the three groundwater monitoring wells.

On March 16, 2006, an AEL engineer was on-site to assist a State licensed surveyor in locating the three monitoring wells. AEL also recorded the depth to water (DTW), depth to bottom (DTB) in each well, and the height of each standpipe that surrounds each well. The following Table 1 lists the recorded DTW, DTB, and standpipe height above grade for each well.

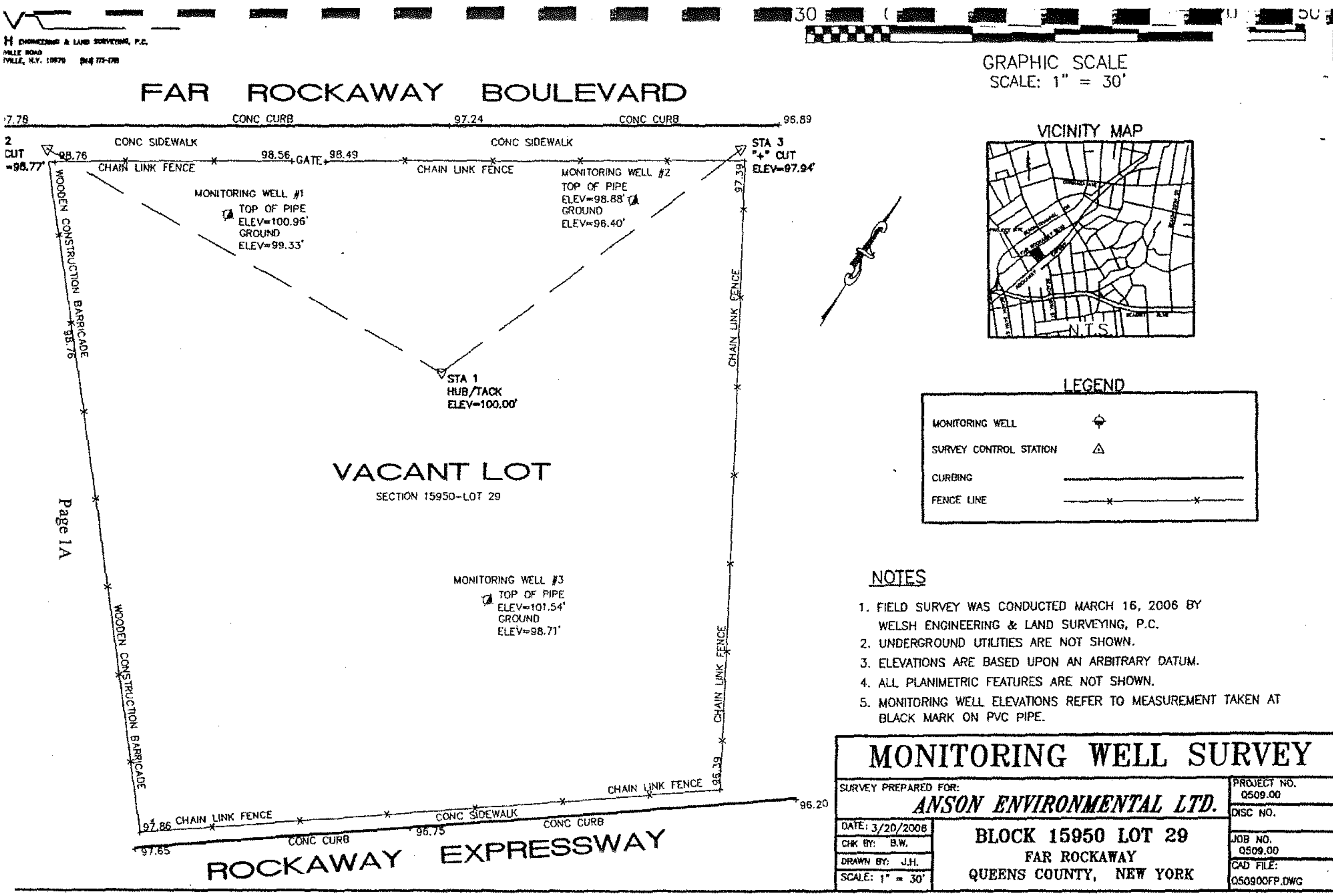

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Figure 1

Table 1
Groundwater Monitoring Well Measurements
Date: March 16, 2006
Time: 1200

Monitoring Well No.	DTW (feet)	DTB (feet)	Standpipe Height (feet)
MW#1	9.44	17.3	2.0
MW#2	7.58	13.5	2.9
MW#3	9.22	14.4	3.2

On March 22, 2006, AEL returned to the site to collect water samples from each groundwater monitoring well. The samples were delivered to EcoTest Laboratories, North Babylon, New York, where they were analyzed for concentrations of volatile organic compounds (VOCs) and semi-VOCs (SVOCs) using EPA Methods 8260 and 8270. The laboratory analytical report indicates that no VOCs or SVOCs were detected above the laboratory reporting limit (LRL). A copy of the laboratory report is presented in Appendix 1.

2.1 Groundwater Flow

During the installation and sampling of the groundwater monitoring wells in 2006, and later during soil and groundwater sampling, AEL recorded the DTW inside the monitoring wells on five different days. The recorded DTWs are listed in Table 2.

Table 2
Measured Depth to Groundwater in Monitoring Wells

Monitoring Well	MW#1 (feet)	MW#2 (feet)	MW#3 (feet)	Notes
3/16/06	9.44	7.58	9.22	3.5 hours after high tide at JFK
3/22/06	9.52	7.71	9.22	2.5 hours after high tide at JFK
5/10/06	9.29	7.42	9.12	High tide at JFK
5/18/06	8.91	6.05	8.30	Low tide at JFK
5/31/06	9.03	6.53	8.81	Low tide at JFK

The derived direction of groundwater flow for the monitoring well measurements recorded on May 10th and May 18th are plotted in Figures 2 and 3 respectively. The groundwater flow plots for the other listed dates are not presented herein; however, the flow for those dates are all within the range of Figures 2 and 3.

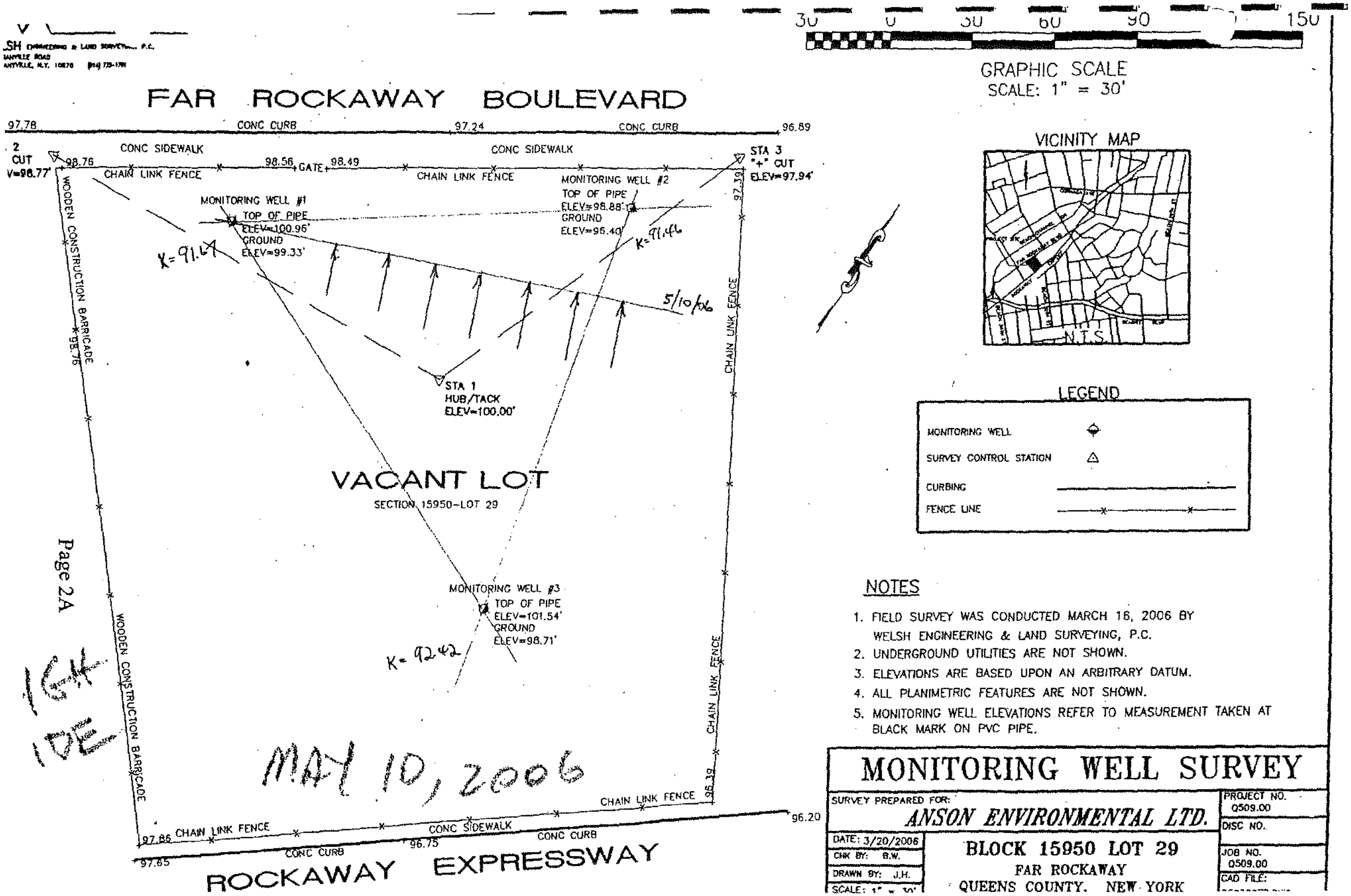

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Figure 2

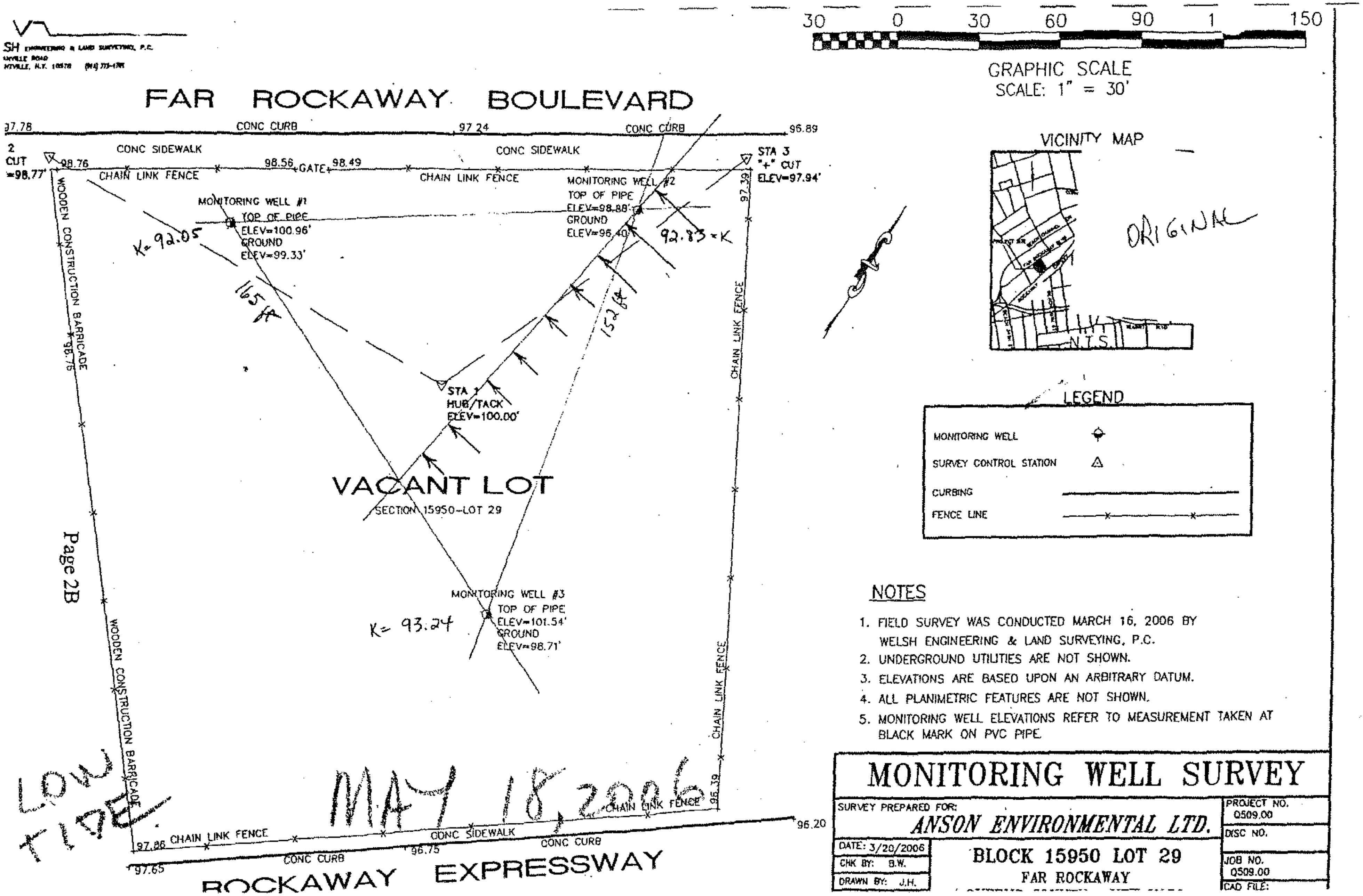

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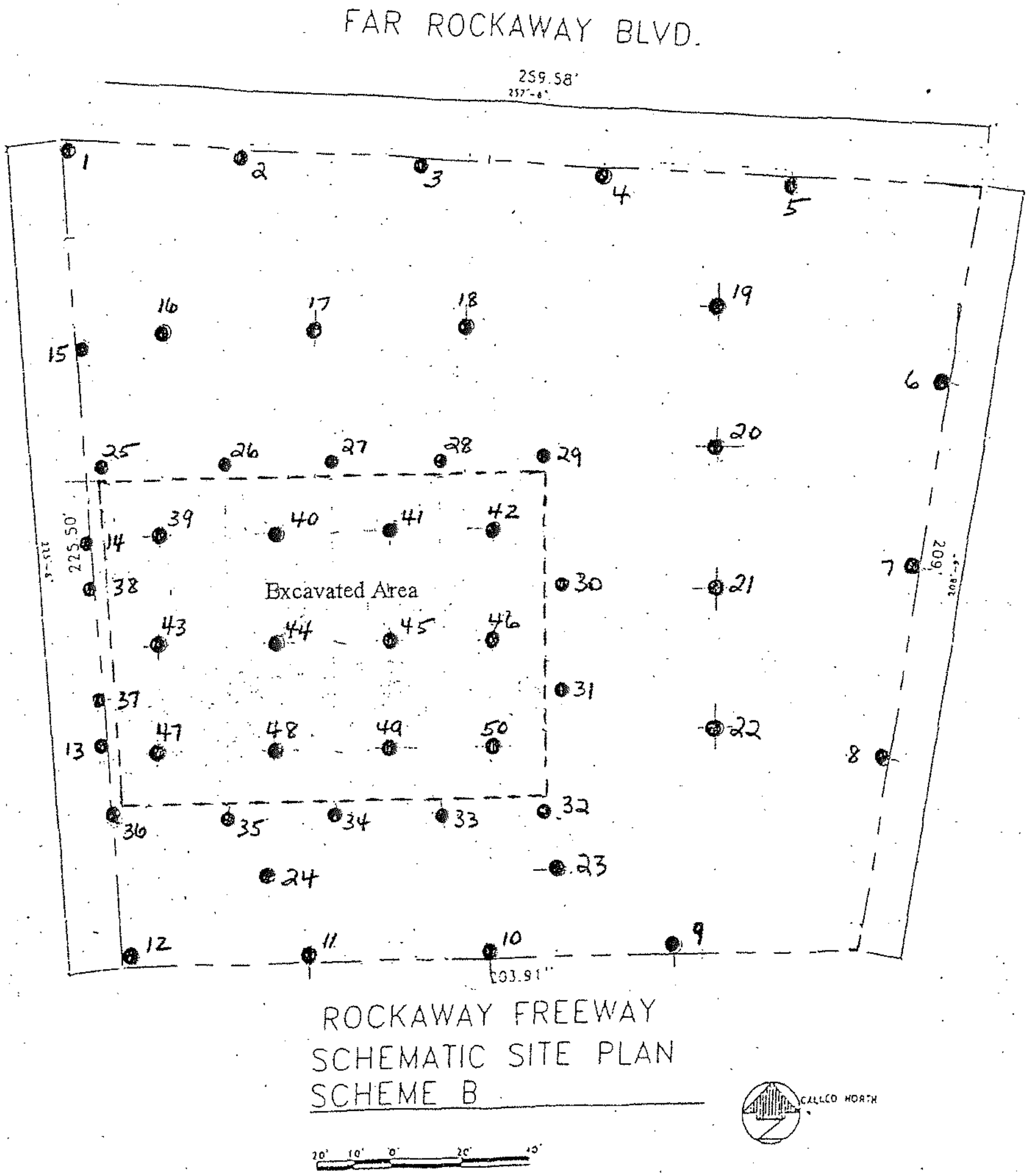
Figure 3

Location Nos. 1 thru 24 = Soil Gas Samples

Location Nos. 25 thru 50 = Soil and Groundwater Samples



Soil Vapor, Soil and Groundwater Locations

Figure 4

Table 4
Semi-Volatile Organic Compounds Detected in Collected Soil Samples
Sample Date: May 10, 2006

Detected Compound	**B25** (ug/Kg)	**B26** (ug/Kg)	**B27** (ug/Kg)	**B28** (ug/Kg)	**B29** (ug/Kg)	**B30** (ug/Kg)	**B31** (ug/Kg)
Naphthalene	**	**	**	**	**	**	120
Acenapthylene	**	100	**	**	**	69	60
Phenanthrene	**	630	**	**	190	400	270
Anthracene	**	170	**	**	**	130	95
Fluoranthene	**	1200	**	**	310	550	360
Pyrene	**	1200	**	**	290	560	400
Benzo (a) anthracene	**	730	**	**	190	400	280
Chrysene	**	770	**	**	250	420	320
Benzo (b) fluoranthene	**	530	**	**	300	400	280
Benzo (k) fluoranthene	**	650	**	**	**	160	120
Benzo (a) pyrene	**	760	**	**	170	330	260
Indeno 1,2,3,-cd) pyrene	**	540	**	**	99	170	140
Dibenzo (a,h) anthrecene	**	200	**	**	**	63	51
Benzo (ghi) perylene	**	600	**	**	110	210	220

Detected Compound	**B32** (ug/Kg)	**B33** (ug/Kg)	**B34** (ug/Kg)	**B35** (ug/Kg)	**B36** (ug/Kg)	**B37** (ug/Kg)	**B38** (ug/Kg)
Naphthalene	**	**	**	**	**	360	**
Acenapthylene	**	**	140	130	74	**	**
Acenaphthene	**	**	140	160	65	460	**
Fluorene	**	**	140	140	**	300	**
Phenanthrene	100	100	1500	1200	450	110	**
Anthracene	**	**	420	370	180	**	**
Fluoranthene	260	160	1700	1800	1200	**	**
Pyrene	310	230	2,000	1300	980	**	**
Benzo (a) anthracene	140	150	1300	1,000	710	**	**
Chrysene	180	150	1300	1,000	780	**	**
Benzo (b) fluoranthene	180	140	1400	1100	860	**	**
Benzo (k) fluoranthene	90	56	360	360	270	**	**
Benzo (a) pyrene	140	110	1100	790	660	**	**
Indeno 1,2,3,-cd) pyrene	110	83	750	490	370	**	**
Dibenzo (a,h) anthrecene	**	**	270	150	140	**	**
Benzo (ghi) perylene	160	120	760	500	330	**	**

** = not detected

3.2 Groundwater Samples

Groundwater samples were collected at 26 boring locations inside and around the perimeter of the excavated and backfilled area at locations 25 through 50. Using a low flow peristaltic pump equipped with dedicated tubing, groundwater samples were collected from locations 25 through 42 on May 10th and from locations 43 through 50 on May 18th. The collected groundwater samples were delivered to STL where they were analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs) using EPA Methods 8260 and 8270. A summary of the VOCs that STL reported above the method detection limit (MDL) is listed in Table 5. A summary of the SVOCs that STL reported above the MDL is listed in Table 6. A copy of the complete laboratory analytical report is presented in Appendix 3.

Table 5
Volatile Organic Compounds Detected in Collected Groundwater Samples
Sample Dates: May 10 and 18, 2006

Detected Compound	B25 (ug/L)	B26 (ug/L)	B27 (ug/L)	B28 (ug/L)	B29 (ug/L)	B30 (ug/L)	B31 (ug/L)
Vinyl Chloride	180	**	**	**	**	**	**
1,1-Dichloroethene	65	**	**	**	**	**	**
Acetone	120	3.7	11	2.9	2.6	2.3	2.9
Methylene Chloride	30	**	**	**	**	**	**
Trichloroethene	2100	6.4	1.2	**	**	**	**
Tetrachloroethene	**	**	0.89	**	**	**	**

** = not detected

Table 5 - Continued
Volatile Organic Compounds Detected in Collected Groundwater Samples
Sample Dates: May 10 and 18, 2006

Detected Compound	B32 (ug/L)	B33 (ug/L)	B34 (ug/L)	B35 (ug/L)	B36 (ug/L)	B37 (ug/L)	B38 (ug/L)
Vinyl Chloride	**	**	0.83	**	140	**	100
1,1-Dichloroethene	**	**	**	**	24	**	**
Acetone	**	1.8	2.9	9.7	56	**	92
Trans-1,2-Dichloroethene	**	**	**	0.93	**	**	**
Methylene Chloride	2.1	**	**	**	7.3	1,000	25
Trichloroethene	**	**	1.1	19	690	10,000	1900
Tetrachloroethene	**	**	**	0.73	21	**	**
Toluene	**	**	1.4	**	**	**	**
Ethylbenzene	**	**	1.1	**	**	**	**
Isopropylbenzene	**	**	1.8	**	**	**	**
n-Propylbenzene	**	**	2.5	**	**	**	**
1,3,5-Trimethylbenzene	**	**	1.5	**	**	**	**
Xylenes (total)	**	**	7.7	**	**	**	**
1,2,4-Trimethylbenzene	**	**	4.7	**	**	**	**
n-Butylbenzene	**	**	0.59	**	**	**	**

Detected Compound	B39 (ug/L)	B40 (ug/L)	B41 (ug/L)	B42 (ug/L)	B43 (ug/L)	B44 (ug/L)
Vinyl Chloride	8.9	**	**	**	21	**
Acetone	18	9.6	2.8	**	27	18
Methylene Chloride	2.6	**	**	**	1.8	
Benzene	**	1.3	0.59	**	**	0.48
Trichloroethene	310	1.3	11	**	510	3.1
4-Methyl-2-pentanone	**	**	**	**	**	1.1
Toluene	**	1.7	0.44	**	**	0.44
Tetrachloroethene	**	**	1.0	**	**	**
Ethylbenzene	**	16	**	**	**	6.3
Isopropylbenzene	**	2.2	**	**	**	1.4
n-Propylbenzene	**	4.0	**	**	**	3.1
1,3,5-Trimethylbenzene	**	9.1	**	**	**	12
Xylenes (total)	**	32	**	**	13	19
1,2,4-Trimethylbenzene	**	62	0.85	**	14	54
sec-Butylbenzene	**	**	**	**	**	0.92
p-Isopropyltoluene	**	1.1	**	**	**	**

** = not detected

Table 5 - Continued
Volatile Organic Compounds Detected in Collected Groundwater Samples
Sample Dates: May 10 and 18, 2006

Detected Compound	B45 (ug/L)	B46 (ug/L)	B47 (ug/L)	B48 (ug/L)	B49 (ug/L)	B50 (ug/L)
Vinyl Chloride	**	**	660	1.9	**	**
Acetone	17	2.4	**	22	3.2	1.6
Methylene Chloride	**	**	**	1.2	**	**
2-Butanone (MEK)	**	**	**	250	**	**
Trichloroethene	**	**	36,000	120	**	1.4
Tetrachloroethene	**	**	150	**	**	**
Ethylbenzene	**	**	**	2.7	**	**
Isopropylbenzene	**	**	**	1.7	**	**
n-Propylbenzene	**	**	**	2.9	**	**
1,3,5-Trimethylbenzene	**	**	**	5.8	**	**
Xylenes (total)	**	**	**	7.3	**	**
1,2,4-Trimethylbenzene	**	**	**	23	**	**

** = not detected

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Table 6
Semi-Volatile Organic Compounds Detected in Collected Groundwater Samples
Sample Dates: May 10 and 18, 2006

Detected Compound	**B25** (ug/L)	**B26** (ug/L)	**B27** (ug/L)	**B28** (ug/L)	**B29** (ug/L)	**B30** (ug/L)	**B31** (ug/L)
Phenanthrene	2	**	**	**	3	**	**
Fluoranthene	2	**	**	**	3	**	**
Pyrene	1	**	**	**	2	**	**
Chrysene	**	**	**	**	1	**	**

Detected Compound	**B32** (ug/L)	**B33** (ug/L)	**B34** (ug/L)	**B35** (ug/L)	**B36** (ug/L)	**B37** (ug/L)	**B38** (ug/L)
Naphthalene	**	**	**	**	**	2	7
Acenaphthene	**	**	**	**	**	**	2
Fluorene	**	**	**	**	**	**	2
Fluoranthene	3	**	**	**	**	**	**
Pyrene	2	**	**	**	**	**	**
Benzo (a) anthracene	2	**	**	**	**	**	**
Chrysene	2	**	**	**	**	**	**
Benzo (b) fluoranthene	2	**	**	**	**	**	**
Benzo (a) pyrene	2	**	**	**	**	**	**
Indeno)1,2,3-cd) pyrene	2	**	**	**	**	**	**
Benzo (ghi) perylene	2	**	**	**	**	**	**

** = not detected

Table 6 - Continued
Semi-Volatile Organic Compounds Detected in Collected Groundwater Samples
Sample Dates: May 10 and 18, 2006

Detected Compound	B39 (ug/L)	B40 (ug/L)	B41 (ug/L)	B42 (ug/L)	B43 (ug/L)	B44 (ug/L)
Benzoic acid	**	**	**	**	11	**
Naphthalene	4	5	4	**	7	35
Acenaphthene	**	7	4	**	2	14
Fluorene	**	6	4	**	2	13
Phenanthrene	**	9	12	**	0.7	22
Anthracene	**	2	3	**	**	5
Fluoranthene	**	**	5	**	**	5
Pyrene	**	1	8	**	**	8
Benzo (a) anthracene	**	**	4	**	**	3
Chrysene	**	**	4	**	**	5
Benzo (a) pyrene	**	**	3	**	**	**
Indeno (1,2,3-cd) pyrene	**	**	3	**	**	**
Benzo (ghi) perylene	**	**	3	**	**	2

Detected Compound	B45 (ug/L)	B46 (ug/L)	B47 (ug/L)	B48 (ug/L)	B49 (ug/L)	B50 (ug/L)
Naphthalene	**	**	61	19	**	**
Acenaphthene	**	**	7	40	0.9	**
Fluorene	**	**	8	36	0.9	**
Phenanthrene	0.9	0.8	19	91	1	**
Anthracene	**	**	4	20	**	**
Fluoranthene	2	2	6	14	1	**
Pyrene	1	1	6	38	1	**
Benzo (a) anthracene	**	**	4	10	**	**
Chrysene	1	1	5	20	**	**
Benzo (a) pyrene	**	1	3	6	**	**
Indeno (1,2,3-cd) pyrene	**	**	3	**	**	**
Benzo (ghi) perylene	**	**	4	7	**	**

** = not detected

3.3 Soil Vapor Sampling

The CAP Addendum described the technique for collecting soil vapor samples at 24 boring locations around the perimeter of the site and at locations within the site perimeter at boring locations 1 through 24 (Figure 4). Adverse soil conditions and canister equipment problems prevented the collection of vapor samples at five of the 24 locations. The vapor sampling was accomplished using a vehicle mounted Geoprobe unit equipped with the Post-Run Tubing (PRT) System as described in the CAP Addendum dated October 6, 2005. During the vapor sampling the Geoprobe operator was instructed to place the PRT approximately one-foot above the groundwater table. The vapor samples were collected in six-liter Summa vacuum canisters with a flow rate les than 0.2 liters per minute. The collected soil vapor samples were delivered to STL where they were analyzed for VOCs using EPA Method TO-15. A summary of the compounds that STL reported above the method detection limit (MDL) is listed in Table 7. A copy of the complete laboratory analytical report is presented in Appendix 4.

Table 7
Target Compounds Detected in Collected Soil Vapor Samples
Sample Dates: May 18 and 31, 2006

Detected Compounds	B1 (ug/m^3)	B2 (ug/m^3)	B3 (ug/m^3)	B4 (ug/m^3)	B5 (ug/m^3)	B6 (ug/m^3)
Trichlorofluoromethane	**	**	210	130	No	**
2,2,4-Trimethylpentane	1800	8400	9300	10,000	Sample	18,000
Trichloroethene	**	**	260	**		**
Toluene	33	64	72	87		120
Tetrachloroethene	43	**	120	120		160
1,2,4-Trimethylbenzene	28	**	**	**		**

Detected Compounds	B7 (ug/m^3)	B8 (ug/m^3)	B9 (ug/m^3)	B10 (ug/m^3)	B11 (ug/m^3)	B12 (ug/m^3)
Acetone	No	520	**	**	**	**
2,2,4-Trimethylpentane	Sample	6500	6500	5600	840	11,000
Trichloroethene		**	**	**	**	1,000
Toluene		72	53	57	**	**
Tetrachloroethene		110	**	**	**	**
Xylene (m,p)		87	**	**	**	**
Xylene (total)		91	**	**	**	**

** = not detected

Table 7 - Continued
Target Compounds Detected in Collected Soil Vapor Samples
Sample Dates: May 18 and 31, 2006

Detected Compounds	B13 (ug/m^3)	B14 (ug/m^3)	B15 (ug/m^3)	B16 (ug/m^3)	B17 (ug/m^3)	B18 (ug/m^3)
Acetone	24,000	**	No	**	No	**
Isopropyl Alcohol	150,000	**	Sample	**	Sample	**
Carbon Disulfide	13,000	**		**		**
n-Hexane	5600	**		**		**
1,2-Dichloroethene (total)	3800	**		**		**
cis-1,2-Dichloroethene	3800	**		**		**
Cyclohexane	8300	**		**		**
2,2,4-Trimethylpentane	11,000	14,000		9300		7,000
Trichloroethene	350,000	5100		330		59
Toluene	3,000	87		83		64
Tetrachloroethene	**	**		120		**

Detected Compounds	B19 (ug/m^3)	B20 (ug/m^3)	B21 (ug/m^3)	B22 (ug/m^3)	B23 (ug/m^3)	B24 (ug/m^3)
Trichlorofluoromethane	480	**	**	**	No	**
Acetone	**	**	**	**	Sample	450
Isopropyl Alcohol	**	1200	**	1100		1300
Carbon Disulfide	**	150	**	120		120
n-Hexane	**	2,000	**	**		**
Methyl Ethyl Ketone	**	77	**	**		**
Cyclohexane	**	110	89	**		19
2,2,4-Trimethylpentane	7,000	5600	11,000	5600		3800
n-Heptane	**	1,000	**	**		**
Trichloroethene	**	**	120	**		**
Metyl Isobutyl Ketone	**	380	**	**		**
Toluene	60	57	**	57		29

** = not detected

4.0 Summary

Three groundwater monitoring wells were installed on-site during late February 2006. In March 2006, after a State licensed surveyor located the wells, groundwater samples were collected for laboratory analysis. The results of that analysis reported no detectable concentrations of VOCs or SVOCs in the submitted samples.

During the soil and groundwater sampling activities at the site in March and May 2006, depth to groundwater measurements were recorded on five different days. Based on those measurements and the monitoring well survey information, the direction of groundwater flow on the site property ranges from approximately 83 degrees West of North at low tide in Jamaica Bay northwest of the site to 23 degrees West of North at high tide.

The concentrations of VOCs detected in the collected soil samples do not exceed the NYSDEC Soil Cleanup Objectives as described in the Technical and Administrative Guidance Memorandum (TAGM) #4046 dated January 24, 1994.

The concentrations of SVOCs detected in the collected soil samples do not exceed the NYSDEC Recommended Soil Cleanup Objectives as described in the Technical and Administrative Guidance Memorandum (TAGM) #4046 dated January 24, 1994.

The concentrations of VOCs in the groundwater below the western half of the excavated and backfilled area exceed the TAGM #4046 groundwater standards. The most significant detected contaminant is Trichloroethene (TCE) that was detected in concentrations ranging from 36,000 ug/L at B47 to 6.4 ug/L at B26. The Groundwater Standard for TCE is 5 ug/L.

The concentrations of SVOCs in the groundwater below the excavated and backfilled area exceed the TAGM #4046 groundwater standards at 10 of the 26 sampled locations. The most significant detected contaminant is Chrysene that was detected in concentrations ranging from 20 ug/L at B48 to 1 ug/L at B29. The Groundwater Standard for Chrysene is 0.002 ug/L.

The soil and groundwater analytical summary reports are presented in the appendices for this report. The laboratory delivered large amounts of quality analysis and control data with these summaries and they will be stored in the AEL project file.

ANSON
ENVIRONMENTAL

Corrective Action Plan Addendum Preliminary Report

for

On-Site Multilevel Groundwater Investigation

and

Off-Site Groundwater Investigation

Location:

Spill # 0207599
Vacant Property
Beach 32nd Street and Far Rockaway Boulevard
Far Rockaway, New York

Date: March 14, 2007

Report Prepared for:

Mr. Christopher Magee
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support, 11th Floor
625 Broadway
Albany, New York 12233-7020

Prepared by:

Anson Environmental Ltd.
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1.0 Introduction
This Anson Environmental Ltd. (AEL) preliminary report describes the Corrective Action Plan (CAP) Addendum activities performed at the Vacant Property located at Far Rockaway Boulevard and Beach 32nd Street, Far Rockaway, New York. The work described herein was performed in accordance with the CAP Addendum Work Plan for the site dated October 26, 2006. This site is assigned Spill No. 0207599 by New York State Department of Environmental Conservation (NYSDEC).

In the CAP Addendum Preliminary Report dated July 5, 2006, AEL submitted the results of the Phase 1 and Phase 2 activities described in the CAP Addendum Work Plan dated October 6, 2005. Phase 1 of the work plan required the installation of three on-site groundwater monitoring wells. Phase 2 of the work plan required the collection of numerous groundwater samples at the excavated area on-site and the performance of a soil gas survey on-site.

At the October 4, 2006, meeting in Albany with NYSDEC, AEL and LDS the results of the aforementioned Phase 1 and Phase 2 activities were discussed. Based on the CAP Addendum Preliminary Report results, it is likely that a groundwater contamination plume starting in the vicinity of the southwest corner of the subject site has moved off-site to the properties located toward the west and northwest. The most significant compound present in the contamination plume is trichloroethene (TCE). At the conclusion of the meeting AEL was directed to proceed with an on-site and off-site groundwater investigation to characterize the vertical and horizontal extent of the contamination plume containing TCE.

As a result of the aforementioned meeting, a new "CAP Addendum Off-Site Groundwater Investigation Work Plan" dated October 26, 2006 was approved by NYSDEC. This new groundwater investigation work plan describes the activities AEL will perform to characterize the vertical and horizontal profile of the contamination plume. Both NYSDEC and AEL agreed that the groundwater investigation will be performed in two phases. In Phase 1 groundwater samples will be collected at multilevel depths at three on-site/off-site locations. After the laboratory analytical results from the Phase 1 sampling are reviewed, the Phase 2 off-site groundwater investigation will begin, based on NYSDEC and AEL joint conclusions concerning the Phase 1 results. The Phase 2 groundwater sampling will be performed off-site at fifteen locations downgradient of the spill on the subject property.

2.0 Phase 1 – Multilevel Groundwater Sampling
The multilevel groundwater sampling was completed on November 28-29, 2006. Multilevel groundwater samples were collected at three locations on the LDS vacant property. These locations were chosen by the NYSDEC project manager. One multilevel groundwater sampling location was at the assumed source of the trichloroethene contamination, designated B47 on Figure 1. The second multilevel sampling location, designated B51, was located along the western boundary of the LDS vacant property and approximately 75-feet northwest of B47. The third multilevel sampling location, designated B52, was located approximately 46-feet east of B47.

Using a vehicle mounted Geoprobe equipped with a Screen Point 15 (SP15) groundwater sampler (Appendix 3), groundwater samples were generally collected at each of the three locations at five discrete depths below grade; namely: 10, 20, 30, 45 and 60-feet. The collected groundwater samples were delivered to EcoTest Laboratories, North Babylon, NY where they were analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs) using EPA Methods 8260 and 8270. Copies of the laboratory analytical reports for the collected groundwater samples are presented in Appendix 1. A listing of the concentrations of compounds detected in the samples for each location and depth is summarized in the following Tables 1 through 5. The most significant compounds detected include vinyl chloride and trichloroethene.

Table 1

Concentrations of Compounds Detected in Multilevel Groundwater Samples Collected at 10-feet bgs

Sample Date: November 28-29, 2006

Detected Compound	B47 (ug/L)	B51 (ug/L)	B52 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	11,000	530	5	2
Trichloroethene	950,000	2,500	**	5
1,1 Dichloroethene	**	22	**	5
t-1,2 Dichloroethene	**	9	1	5
Benzene	**	0.9	**	0.7
Tetrachloroethene	**	2	**	5
Toluene	**	1	**	5
Ethyl Benzene	**	2	**	5
124-Trimethybenzene	**	1	**	5
o Xylene	**	5	**	5
Xylene	**	5	**	5
Naphthalene	16,000	**	**	10
Fluorene	4,600	**	**	50
Phenanthrene	14,000	**	**	50

** = not detected

Table 2

Concentrations of Compounds Detected in Multilevel Groundwater Samples Collected at 20-feet bgs

Sample Date: November 28-29, 2006

Detected Compound	B47 (ug/L)	B51 (ug/L)	B52 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	Note 1	**	4	2
Trichloroethene		**	**	5
Carbon Disulfide		**	1	5
t-1,2 Dichloroethene		**	1	5
124-Trimethybenzene		4	**	5
o Xylene		2	**	5
m + p Xylene		3	**	5
Xylene		5	**	5
Naphthalene		2	**	10

Note 1: Soil conditions at 10-feet bgs prevented groundwater sampling

** = not detected

Table 3

Concentrations of Compounds Detected in Multilevel Groundwater Samples Collected at 30-feet bgs

Sample Date: November 28-29, 2006

Detected Compound	B47 (ug/L)	B51 (ug/L)	B52 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	20	29	8	2
Trichloroethene	120	**	25	5

** = not detected

Table 4

Concentrations of Compounds Detected in Multilevel Groundwater Samples Collected at 45-feet bgs

Sample Date: November 28-29, 2006

Detected Compound	B47 (ug/L)	B51 (ug/L)	B52 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	18	**	11	2
Trichloroethene	1600	**	32	5
Acetone	**	**	12	50
Carbon Disulfide	**	**	1	5
1,1 Dichloroethene	1	**	**	5
t-1,2 Dichloroethene	6	**	1	5
Benzene	0.7	**	**	0.7
Tetrachloroethene	5	**	**	5

** = not detected

Table 5

Concentrations of Compounds Detected in Multilevel Groundwater Samples Collected at 60-feet bgs

Sample Date: November 28-29, 2006

Detected Compound	B47 (ug/L)	B51 (ug/L)	B52 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	10	Note 2	26	2
Trichloroethene	370		1200	5
1,1 Dichloroethene	**		3	5
t-1,2 Dichloroethene	2		1	5
Tetrachloroethene	**		3	5
124-Trimethybenzene	**		1	5
Naphthalene	**		1	10
Phenanthrene	**		1	50

Note 2: Soil conditions at 60-feet bgs prevented groundwater sampling

** = not detected

1

3.0 Phase 2 – Off-Site Groundwater Sampling
On January 24, 2007, in accordance with the CAP Addendum Work Plan dated October 26, 2006, AEL began collecting groundwater samples at fifteen (15) specific boring locations at approximately 10-feet below grade surface. This Phase 2 groundwater collection activity was completed on January 25th.

Using a vehicle mounted Geoprobe equipped with a Screen Point 15 (SP15) groundwater sampler (Appendix 3), groundwater samples were generally collected at each of the 15 locations at approximately 10-feet below grade surface. The collected groundwater samples were subsequently delivered to EcoTest Laboratories, North Babylon, NY where they were analyzed for volatile and semi-volatile organic compounds using EPA Methods 8260 and 8270. Copies of the laboratory analytical reports for the collected groundwater samples are presented in Appendix 2. A listing of the concentrations of compounds detected in the samples for each location is summarized in Table 6. The most significant compounds detected include vinyl chloride, trichloroethene and t-1, 2 Dichloroethene.

Two sampling locations are along the western boundary of the LDS vacant property, eight are on the adjoining property west of the LDS vacant property, and five are located along the western side of Beach Channel Drive (Figure 1).

According to the laboratory analytical reports, the five groundwater samples collected along the western side of Beach Channel Drive (B63 through B67) contained concentrations of carbon disulfide and MTBE that are below NYSDEC groundwater standards (5 micrograms per liter). Carbon disulfide is a compound used to produce pesticides, and MTBE is a gasoline additive that is no longer used in New York State.

The three groundwater samples collected in the area adjacent to the northern boundary of the adjoining property west of the LDS property (B60, B61 and B62) contained no concentrations of VOCs or SVOCs that exceed NYSDEC standards for groundwater (Table 6).

The groundwater sample collected at approximately the center of the property located west of the LDS property (B58) also contained no concentrations of VOCs or SVOCs that exceed NYSDEC standards for groundwater (Table 6).

The two groundwater sampling locations along the western boundary of the LDS property (B59 and B53) contain concentrations of VOCs or SVOCs that exceed NYSDEC standards for groundwater (Table 6). The most significant detected compound is vinyl chloride. Vinyl chloride is a breakdown product of many organic compounds and is an indicator that decomposition of the original source contaminants is occurring.

The remaining four groundwater samples collected on the property west of the LDS property (B54 through B57) also contain concentrations of VOCs or SVOCs that exceed NYSDEC standards for groundwater (Table 6). And again, the most significant detected compound is vinyl chloride.

4.0 Conclusion
The Phase 1 multilevel groundwater sampling activity determined that elevated concentrations of Vinyl Chloride and Trichloroethene are present in the groundwater at B47, 10-feet below grade surface, the assumed center of the contamination plume. This contamination plume is influenced by the groundwater flow on the site. The direction of groundwater at the site is influenced by tidal changes in the nearby water body, Norton Basin.

The Phase 2 groundwater sampling activity that was performed at 15 on-site/off-site locations determined that the contamination plume extends onto the property located west of the LDS site. Based on the groundwater samples collected at approximately 10-feet below grade surface along the western side of Beach Channel Drive, and the groundwater samples collected along the northern section of the property located west of the LDS site, the contamination plume has not moved past Beach Channel Drive.

Table 6

LDS Vacant Property

Compounds Detected in Off-Site Groundwater Samples

Sample Date: January 24 - 25, 2007

Detected Compound	B53 (ug/L)	B54 (ug/L)	B55 (ug/L)	B56 (ug/L)	B57 (ug/L)	B58 (ug/L)	B59 (ug/L)	B60 (ug/L)	B61 (ug/L)	B62 (ug/L)	NYSDEC Groundwater Standard (ug/L)
Vinyl Chloride	**4800**	**2800**	**1700**	**100**	**650**	**	**19**	**	1	**	2
Methylene Chloride	**20**	**	**	**	**	**	**	**	**	**	5
1,1 Dichloroethene	**73**	**280**	**610**	**9**	**	**	2	**	**	**	5
t-1,2 Dichloroethene	**97**	**1200**	**	**13**	**540**	**	3	1	**	**	5
Trichloroethene	**650**	**	**	**48**	**	**	**	**	**	**	5
124 Trimethylbenzene	**39**	**	**	**	**	**	4	**	**	**	5
Xylenes	**22**	**	**	**	**	**	**6**	**	**	**	5
Naphthalene	**20**	**	**	**	**	**	**	**	**	**	10
Acenaphthene	2.2	**	**	**	**	**	**	**	**	**	20
Fluorene	1.7	**	**	**	**	**	**	**	**	**	50
Benzene	**	**	**35**	**3.5**	**35**	**	**	**	**	**	0.7
Carbon Disulfide	**	**	**	**	**	1	**	**	**	**	5

** = not detected

BOLD concentrations exceed NYSDEC groundwater standard

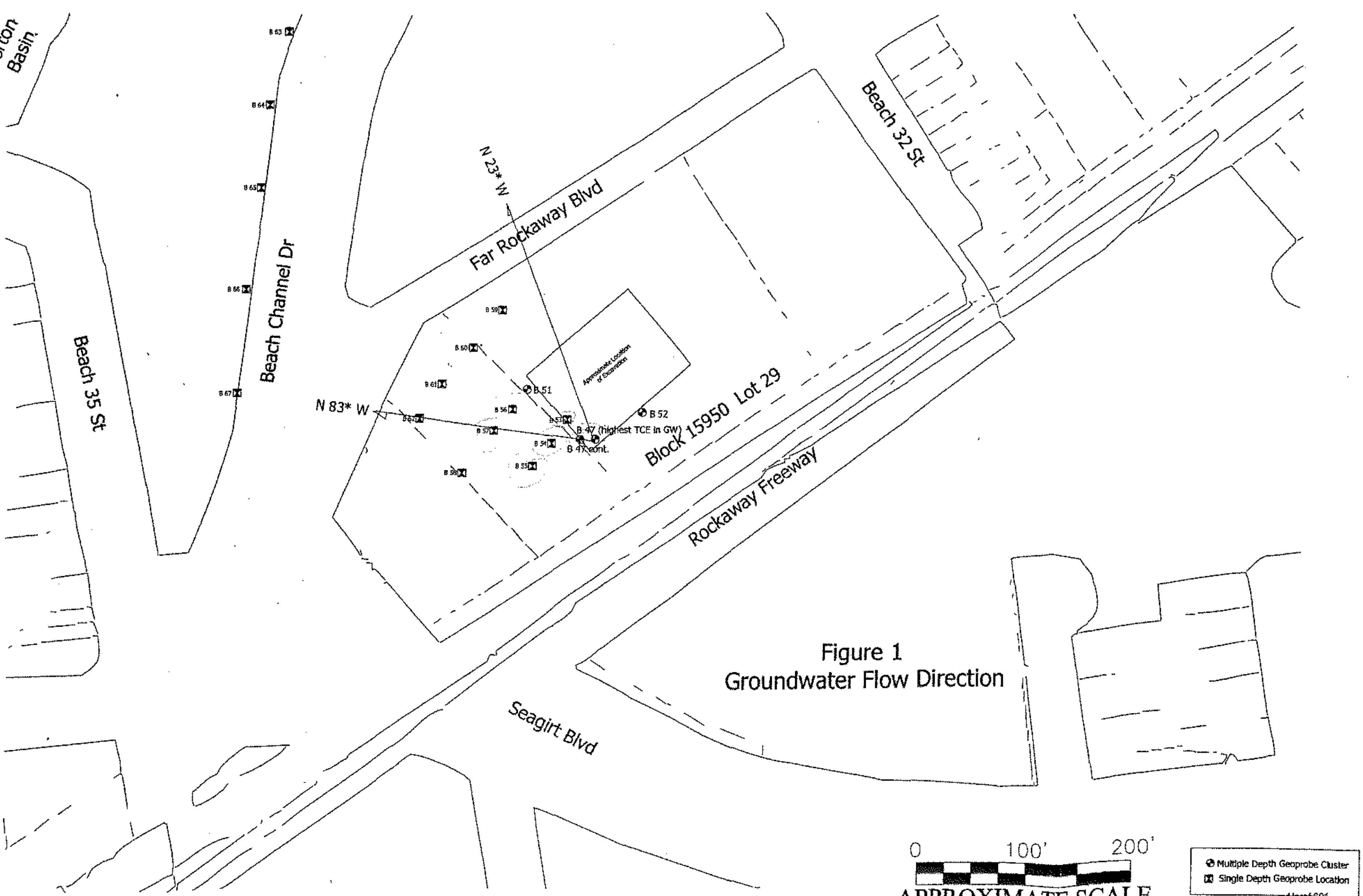

Figure 1
Groundwater Flow Direction

PAGE 1A

TRC

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May 22, 2009

New York State Department of Environmental Conservation
Division of Environmental Remediation, Bureau of Technical Support
625 Broadway, 11th Floor
Albany, New York 12233-7020

Attn: Mr. Christopher Magee

Re: *Test Pit and Soil Boring Investigation Results*
CPB Edgemere Site (SP# 02-07599)
3229 Far Rockaway Boulevard (Block 15950, Lot 29)
Edgemere, Queens, New York
TRC Job No. 159807

Dear Mr. Magee:

TRC has prepared the following letter report to summarize the test pit and soil boring investigation program completed at the CPB Edgemere site (Site) between March 10 and May 7, 2009.

1.0 INTRODUCTION

Following the observation of petroleum hydrocarbons in the subsurface soils of the Site during due diligence activities in 2002, remedial investigation activities were initiated. In 2004, two former underground storage tank (USTs) and petroleum -impacted soils were excavated and removed from the Site. In 2008, TRC conducted additional environmental investigations at the Site, including soil borings and monitoring wells. During these activities, TRC observed petroleum hydrocarbons in the shallow hydrogeologic zone. The observation of petroleum hydrocarbons was unexpected, based on the documented 2004 remedial excavation that was undertaken to remove the petroleum hydrocarbon impact. General fluctuations in ground water elevations in the shallow zone may influence the observations of petroleum product in the wells.

The presence of the petroleum hydrocarbons may render the current remedial plan, primarily designed to address chlorinated solvent impacts, potentially inefficient or ineffective and therefore, may necessitate the development of a more comprehensive remedial strategy that concurrently addresses both petroleum and chlorinated solvent impacts in the southwestern

EXHIBIT N-37 1-12-12 P

portion of the Site. Therefore, TRC conducted additional investigation activities in 2009 to further evaluate and possibly removed the petroleum hydrocarbon impact.

This letter reviews the site background, summarized recent investigation activities, presents an evaluation of the known petroleum hydrocarbon and chlorinated solvent impacts at the Site, and proposed future actions to address these conditions.

2.0 BACKGROUND

The 1.3-acre Site is located between Far Rockaway Boulevard and the Rockaway Freeway (near Beach 32nd Street) in Edgemere, New York. Figure 1 provides a Site Location Map and Figure 2 presents the Site Plan. The Site is located approximately 450 feet south west of the Norton Basin of the Jamaica Bay and approximately 2,200 feet (0.4 miles) north of the Atlantic Ocean. The property is currently vacant and has been designated on local tax maps as Block 15990, Lot 29. A review of historic Sanborn Maps and available literature indicate that a water body known as Norton's Creek extended from Norton Basin through the western portion of the Site, and was reported by the New York Times to be filled in 1906.

Geology

The overburden material encountered at the Site has been divided into three distinct geologic zones (shallow, intermediate and deep) which are described below.

Shallow Zone
The shallow zone is approximately 20 feet thick and consists of layers of artificial fill materials (including brown fine to coarse sand with varying amounts of debris), and native or dredged soils (brown and gray sands with minor gravels) from the surface to depths ranging from 8 to 20 feet below grade. Below the artificial fill and sand layers, organic silty clay (1-4 feet thick) with interbedded sand lenses are found at the base of the shallow zone, at depths ranging from approximately 11 and 20 feet below grade. The depth, composition and thickness of the clay layer vary greatly.

The depth to water in the shallow zone is approximately 6 to 11 feet below grade, occurring within the artificial fill or the sand. Ground water flows primarily to the northwest, toward Jamaica Bay under relatively flat horizontal hydraulic gradients with an average of approximately 0.003 feet/foot (ft/ft). No tidal influence has been observed in shallow zone monitoring wells.

Intermediate Zone
The intermediate zone consists of two lithologic units. A light brown-green coarse to fine sand with gravel and varying amounts of silt and clay is encountered at a depth of approximately 20 feet below grade. The silt and clay content increases with depth at 30 feet below grade. A second clay unit (about 17 feet thick) occurs at a depth of approximately 37 feet below grade and consists of dark grey soft clay with interbedded sand or silt laminations and trace shell fragments.

Ground water in the intermediate zone principally occurs within the sand. Ground water flows primarily to the west under very small horizontal hydraulic gradients with an average of approximately 0.0007 ft/ft. Ground water levels within this zone are influenced by tidal fluctuations of nearby surface water bodies with corresponding fluctuations that range form approximately 0.1 to 0.3 feet. Tidal fluctuations do not cause gradient reversals but impart a relative deviation/shift in a northwesterly or southwesterly direction to the flow.

The vertical ground water flow potential between the shallow and intermediate zones across the shallow silty clay is predominantly downward with temporary localized changes due to tidal fluctuations and precipitation.

Deep Zone
The lower clay layer serves as an aquitard separating the intermediate and deep zones and appears to act as a confining/semi-confining unit to both zones. This clay layer appears to be continuous and consistent throughout the investigation area. A brown-gray, fine to medium sand occurs underneath the second clay unit at a depth of approximately 54 feet below grade and is greater than 40 feet thick.

Site Operational History

A review of Sanborn fire insurance (Sanborn) maps depicting the Site in 1933, 1951, and 1981 and historical aerial photography indicates that a linear building structure was formerly located on the Site, along the western property boundary. The building's use was reported on the 1933 Sanborn map as a plumbing supply house, and on the 1951 Sanborn map used as a garage. Both Sanborn maps depict two gasoline tanks in the northern portion of the building. The building was not present on the 1981 Sanborn map, and no additional Sanborn maps depicting the Site between 1933 and 1981 are available. Available on-line historic aerial photographs depict the building in 1954 and 1966.

Environmental Investigation History
In 2002, environmental site investigation activities conducted at the Site revealed evidence of a petroleum release, and the New York State Department of Environmental Conservation (NYSDEC) subsequently assigned Spill Number 02-07599 to the property.

To address the petroleum impacts, Anson Environmental, Ltd. (Anson) of Huntington, New York conducted a soil excavation program at the Site between June and November 2004. During the soil excavation activities, two fuel oil underground storage tanks (USTs), 300 and 1,500 gallons in capacity, were uncovered and removed. Anson reported that 13,882 tons of petroleum-impacted soil and 12,430 gallons of oil and water were removed for off-Site disposal. The final extent of excavation was reported to be approximately 11,000 square feet in area, and 8 feet below grade. During these excavation activities, an area of soil (green in color) was also discovered, which was later found to contain elevated concentrations of chlorinated volatile organic compounds (CVOCs). This area was also excavated and 418 tons of contaminated soil was reportedly removed for off-site disposal. No discussions were reported about the occurrence or observations of petroleum hydrocarbon free product in the area of the CVOC remedial excavation.

In preparation of a remedial pilot study to estimate the feasibility of chemical oxidation to address ground water CVOC impacts, TRC conducted additional environmental investigations at the Site in 2008, which included the installation of monitoring wells and soil borings. In association with these activities, TRC observed petroleum hydrocarbon impacts in the organic clay, initially as localized residual impacts in the shallow zone. However, at later time (March 2009), petroleum accumulations were observed in shallow monitoring well PZ-2 and intermediate monitoring well MW-4i in thicknesses of up to 2.12 feet and 0.15 feet, respectively. The observation of petroleum hydrocarbons at the Site warranted additional investigation. These activities are summarized in the following section.

3.0 INVESTIGATION TECHNICAL OVERVIEW

The following subsections provide a technical overview of the remedial investigation activities completed between March and May 2009 at the Site.

March 2009 Test Pit Program

On March 9-10, 2009, TRC completed an exploratory test pit excavation program designed to evaluate the extent of the free product observed at PZ-2, and to remove free product and impacted soil. During this program, an excavation contractor (Brookside Environmental Inc. of Huntsville, NY [Brookside]) completed three test pits (TP's -1, -2, and -3), to the west, north, and east of PZ-2, respectively. As required by the State law, at least 3 days prior to initiation of intrusive activities, Brookside requested an underground utility mark-out from the New York State one-call service (e.g., DigSafe). Test pits TP-1 through TP-3 generally extended to the west, north, and east of well PZ-2 until no visible evidence of petroleum impacts or product was observed along the sidewalls of the excavations. To mitigate potential cross contamination between the shallow and intermediate zones, the excavations were terminated at the top of the clay layer at approximately 9.5 feet below grade. The test pit locations are depicted on Figure 2.

During test pit excavation activities, TRC screened soils removed from the test pits using visual and olfactory observations, and a photo-ionization detector (PID), and directed Brookside to stockpile soils exhibiting evidence of petroleum impacts. TRC additionally logged each test pit for lithology, presence or absence of evidence of petroleum impacts, sensory observations, PID measurements, and presence of ground water, and photographed the materials encountered during the test pit excavation activities. All field observations and measurements were documented by TRC in a field notebook.

During excavation of TP's -1 through -3, petroleum impacted soil and LNAPL were encountered warranting removal in the vicinity of PZ-2 and adjacent monitoring wells near the ground water table. An estimated 80 tons of petroleum-impacted soils were removed from the excavation, staged on plastic sheeting, and covered by plastic sheeting for future off-site disposal. Following the completion of excavation activities, and prior to test pit backfilling, approximately 445 gallons of petroleum hydrocarbons and water were removed from test pit TP-2 by a vacuum truck operated by Enviro-Waste Oil Recovery LLC of Mahopac, NY (Enviro-Waste). Following fluid removal, each test pit was backfilled with excavated soils that did not exhibit field evidence of petroleum impacts, and with imported clean fill. Attachment 1 provides test pit excavation logs, and Attachment 2 presents photos of the test pit locations. Table 1 provides a summary of sample collection locations, analytical parameters, and rationale for sample collection.

April 2009 Test Pit Program

Based on the findings of the March 2009 test pit program, TRC initiated a second test pit excavation program in April 2009 to delineate the petroleum hydrocarbons near areas of concern identified in historic documents (e.g., former gasoline tanks, Anson excavation area, etc.). Prior to conducting this program, Brookside requested an underground utility mark-out from DigSafe, as required. Under TRC's oversight, Brookside completed ten test pits (TP's -4, through -13) at varying locations at the Site. To mitigate potential cross contamination between the shallow and intermediate zones, the excavations were terminated at the top of the clay layer (where encountered). The locations of test pits TP-4 through TP-13 are depicted on Figure 2.

During test pit excavation activities, TRC screened soils removed from the test pits using visual and olfactory observations, and a photo-ionization detector (PID), and directed Brookside to stockpile soils exhibiting evidence of petroleum impacts. TRC additionally logged each test pit for lithology, presence or absence of evidence of petroleum impacts, sensory observations, PID measurements, and presence of ground water, and photographed the materials encountered during the test pit excavation activities. Based on sensory observations and PID measurements, TRC selected soil samples bias toward suspected contamination, collected these samples with dedicated, disposable sampling equipment, and submitted them for analysis under laboratory chain-of-custody procedures to Accutest Laboratories of Dayton, New Jersey (Accutest) for analysis of total petroleum hydrocarbons (TPHC), volatile organic compounds (VOCs), and base-neutral organic compounds (BNs). An isolated area of green and blue discolored soil was observed in the south east corner of TP-7, and towards the north of TP-12. This soil did not possess any odors or elevated PID readings. All field observations, measurements, and sample collection information were documented by TRC in a field notebook.

During April 2009 test pit excavation activities, petroleum-impacted soil and floating petroleum hydrocarbons were encountered at test pit TP-5 in association with a former building foundation wall (grade beam). An estimated 20 tons petroleum-impacted soils were removed from the excavation, staged on plastic sheeting, and covered by plastic sheeting for future off-site disposal. Following the completion of excavation activities, and prior to test pit backfilling, approximately 1830 gallons of petroleum hydrocarbons and water were removed from test pit TP-5 by a vacuum truck operated by Enviro-Waste. Following fluid removal, each test pit was backfilled with excavated soils that did not exhibit field evidence of petroleum impacts, and with imported clean fill. Attachment 1 provides test pit excavation logs, and Attachment 2 presents photos of the test pit locations.

During the April 2009 test pit program, samples of the floating petroleum hydrocarbons (product) were collected for laboratory analysis from shallow zone monitoring well PZ-2 and intermediate zone well MW-4i. These samples were submitted to Accutest Laboratories for analysis of product type and volatile organic compounds (VOCs). Table 1 provides a summary of the soil and product sample collection locations, analytical parameters, and rationale for sample collection.

Following receipt of analytical results from Accutest, product samples from wells PZ-2 and MW-4i were sent to Torkelson Geochemistry, Inc, (Torkelson) for additional product type and forensic analysis.

May 2009 Soil Boring Program

On May 4th, 6th, and 7th, 2009, TRC completed a supplemental soil boring program to delineate the vertical and areal extent of petroleum hydrocarbons within and below the shallow zone. As required by the State law, an underground utility mark-out was requested prior to conducting intrusive activities. Under TRC oversight, a drilling subcontractor (Zebra Environmental Corp. of Lynbrook, New York [Zebra]) completed 25 soil borings (SB's -1, through -25) to depths ranging from 15 to 40 feet using the direct push (Geoprobe®) drilling method. Soil borings were generally located on a 25-foot grid pattern, with additional borings located in the vicinity of the MW-4 well cluster. The soil boring locations are depicted on Figure 2.

During soil boring activities, TRC screened soil boring cuttings using visual and olfactory observations, and a photo-ionization detector (PID). TRC additionally logged each soil boring for lithology, presence or absence of evidence of petroleum impacts, sensory observations, PID measurements, and presence of ground water, and photographed the materials encountered during the soil boring activities. Based on sensory observations and PID measurements, TRC selected soil samples bias toward suspected contamination, collected these samples with dedicated, disposable sampling equipment, and submitted them for analysis under laboratory chain-of-custody procedures to Accutest for analysis of VOCs. All field observations, measurements, and sample collection information were documented by TRC in a field notebook.

At four soil boring locations (SB-5, SB-11, SB-18, and SB-21), ground water samples were collected from the direct-push boreholes from the upper portion and lower portion of the intermediate zone sands for analysis of VOCs. To collect these samples, decontaminated drilling rods containing a 4-foot length of decontaminated stainless steel screen were advanced through the soil borehole to the base of the targeted ground water sample interval. The drill rods were then pulled 4 feet upward, exposing the screen inside to the formation. Through this screen, the borehole was purged to remove excessive sediment and sampled for VOC analysis using dedicated, disposable tubing and a decontaminated stainless steel foot check valve. Following sample collection, the screen and drill rods were removed and decontaminated for future use. Finally, all of the borings that penetrated the first clay unit were grouted using a Portland cement and bentonite mixture, to minimize the potential for vertical contaminant migration.

Attachment 1 provides soil boring logs, and Attachment 2 presents selected photos from the soil boring program. Table 1 provides a summary of sample collection locations, analytical parameters, and rationale for sample collection.

4.0 INVESTIGATION FINDINGS

The following subsections provide a summary of the findings of the remedial investigation activities completed between March and May 2009 at the Site.

Lithology

In test pits TP-1, TP-2, TP-3, TP-5, TP-6, TP-7, and TP-8, the artificial fill material consisted of brown sand with large concrete blocks, concrete aggregate, bricks, and timbers from the ground surface to depths of up to 9.5 feet below grade. Similar fill material was encountered at depths greater than 5 feet below grade in borings SB-6, SB-7, SB-9, SB-10, SB-11, SB-12, SB-13, SB-14, SB-15, SB-16, SB-17, SB-18, SB-19, SB-22, SB-23, and SB-24.

Below the fill materials and sands (as described in the geology section above), clay or organic materials (peat, roots, etc.) were encountered in all soil borings at depths ranging from 10 to 26 feet below grade. Clay/organic thicknesses varied from a 0.5-foot thick layer of peat (at SB-3) to an apparent thickness of 3.5 feet boring SB-13. Despite encountering clay in each boring, the range of depths and thicknesses of the clay encountered indicate that the organic clay is discontinuous, with intervening sand lenses. As such, stratigraphic correlation between the observed clay lenses indicates that gaps are present between the shallow zone sand and intermediate zone sand, which would account for the presence of some contaminants (CVOCs and petroleum) within the intermediate zone.

Free and Residual Petroleum

Field evidence of mobile (free-phase) and non-mobile (residual-phase) petroleum hydrocarbons encountered in several locations are summarized on the following table:

Test Pit/Boring Location	Free or Residual Product Depth (feet)	Observations:
TP-3	9.5	Staining, Odor, Free-Phase Product On Ground Water Table
TP-5	9.5-13	Staining, Odor, Free-Phase Product On and Below Ground Water Table
TP-6	8-10	Odor, Residual Petroleum-Like Globules
TP-8	8-8.5	Free-Phase Product on Ground Water Table
TP-13	10-10.5	Odor, Residual Petroleum-Like Globules
SB-7	N/A	Petroleum-Like Sheen Within Macrocore Sleeve From 10-15 ft Core
SB-9	8-16.5	Sheen, Odor, Residual Product Globules Product On and Below Ground Water Table
SB-10	6.5-7	Odor, Residual Petroleum-Like Globules
SB-11	7-12	Sheen, Odor, Residual Product Globules Product On and Below Ground Water Table
SB-12	6-13.5	Sheen, Odor, Residual Product Globules Product On and Below Ground Water Table
SB-14	6-13	Sheen, Odor, Free-Phase Product On and Below Ground Water Table
SB-15	6	Petroleum-Like Staining
SB-16	6.25-7	Sheen
SB-17	6.5	Sheen
SB-18	6-7	Petroleum-Like Sheen and Odor
SB-19	6.5	Free-Phase Product On Ground Water Table
SB-22	8.5-12	Petroleum-Like Sheen and Odor
SB-23	10-11	Odor, Free-Phase Product Below Ground Water Table

To further characterize the petroleum hydrocarbons, samples were submitted for total petroleum hydrocarbon (TPHC) analysis. A total of 10 soil samples from test pits TP-4 through TP-13 were analyzed for TPHC. TPHC analytical results ranged from less than 1 milligram per kilogram (mg/kg) (samples TP-4 9.5-10 and TP-11 11.5-12) to 17,900 mg/kg (sample TP-5 10-10.5). The TPHC analytical results are summarized in Table II, and on Figure 3. Figure 3 also summarizes the estimated extent of free and residual petroleum present, based on soil analytical results and field evidence of petroleum impacts, as summarized above. As shown on Figure 3, the estimated extent of free and residual petroleum generally lies within the boundaries of the 2004 Anson excavation area, and spans an area of approximately 100 feet by 100 feet.

Product Analysis Results
Product samples collected from PZ-2 and MW-4 on April 28, 2009 were submitted to Accutest for product identification. Accutest reported that both samples match gas chromatograph patterns for weathered number (No.) 6 fuel oil and for weathered heavier petroleum products (such as hydraulic oil). Each sample was also analyzed for the presence of the principal CVOC found at the Site, trichloroethene (TCE). The sample from well PZ-2, screening the shallow zone, contained TCE in a concentration of 123 milligrams per liter (mg/L). The sample from well MW-4i, screening the intermediate zone, contained TCE in a concentration of 23,500 mg/L (approximately 2.35% by mass).

Following analysis by Accutest, product samples were sent to Torkelson for additional analyses. Final analytical results from Torkelson are not currently available. Upon receipt, these laboratory results will be submitted to the NYSDEC under separate cover.

VOC and BN Soil Results

A total of 22 soil samples were analyzed for VOCs. Tetrachloroethene (PCE), TCE, trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride (VC), and 1,1-dichloroethene (1,1-DCE) were detected in one or more soil sample in excess of the New York State Department of Environmental Conservation (NYSDEC) Restricted Use Soil Cleanup Objective (RUSCO). TCE, the principal contaminant of concern for the Site, was detected in ten soil samples in excess of the NYSDEC RUSCO, in concentrations ranging from 1.42 mg/kg to 6,990 mg/kg. TCE results in excess of 100 mg/kg were detected in samples SB-13 10-10.5 (659 mg/kg), SB-13 11-11.5 (996 mg/kg), SB-17 8.5-9 (201 mg/kg), SB-17 15-15.5 (889 mg/kg), SB-20 12-12.5 (1,980 mg/kg), and SB-14 32-32.5 (6,990 mg/kg). Observations from the SB-14 32-32.5 sample indicated a strong solvent odor and highly elevated PID readings. Soil VOC samples results are summarized on Figure 4, and in Table 2.

A total of 11 soil samples were analyzed for BNs. Concentrations of a total of seven BN compounds from sample TP-5 9-9.5 and one BN compound from sample TP-5 10-10.5 exceeded the NYSDEC RUSCO for their respective compound. These compounds are likely attributed to the presence of petroleum within the soil sample. Soil BN sample results are summarized in Table 2.

Chlorinated VOC Ground Water Results
A total of 8 hydropunch ground water samples (plus one duplicate sample) were collected from 4 soil borings (SB-5, SB-11, SB-18, and SB-21). At each boring location, one sample was collected from near the base of the intermediate zone and one sample was collected from near the top of the intermediate zone, and was analyzed for VOCs to evaluate the relative width of the

CVOC plume. In these samples, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and VC were detected in only 2 samples (SB-11 GW 25-27 and SB-5 GW 23-27) above the NYSDEC's Ground Water Quality Standards (GWQS). As shown on Figure 2, soil borings SB-11 and SB-5 are located approximately and 25 and 55 feet northwest of the MW-4 well cluster, respectively. Trans-1,2-DCE was additionally detected in sample SB-11 GW 25-27 in concentrations above the NYSDEC's GWQS. Additionally, total xylenes, a VOC related to petroleum products, was detected in sample SB-5 GW 23-27 at a concentration that exceeds the NYSCEC's GWQS. Hydropunch sample locations are shown on Figure 2. Ground water analytical results are provided in Table 3. Additional lab results are pending from contingent samples and will be presented when they are available.

5.0 CONCLUSIONS

Based on the March-May 2009 investigation activities and previous investigations, the following conclusions are provided:

- Analytical results for samples collected from the shallow clay lenses indicate that CVOC impact to the first clay unit covers a greater area than previously recognized;
- Despite the completion of the 2004 remedial excavation, an area of more than 1,000 square yards of free and residual petroleum impacts is present at and below the ground water table, around the MW-4 well cluster (the area of the Site that requires ground water CVOC remediation);
- Despite encountering clay in each boring, the range of depths and thicknesses of the clay encountered indicate that the organic clay is discontinuous, with intervening sand lenses. As such, stratigraphic correlation between the observed clay lenses indicates that gaps are present between the shallow zone sand and intermediate zone sand, which would account for the presence of some contaminants (CVOCs and petroleum) within the intermediate zone;
- The concentrations of TCE measured in soil sample SB-14 32.5-33 (e.g. 32-33 feet below grade) and the product sample collected from MW-4i indicate that a TCE source area is present in the vicinity of MW-4i in the intermediate zone; and
- Product sample analytical results indicate a relationship between petroleum hydrocarbons encountered in the shallow and intermediate zones, and a relationship between the petroleum and TCE impacts in the intermediate zone.

- While hydropunch ground water samples suggest that ground water impacts to the intermediate ground water zone are restricted to the vicinity of the MW-4i location (the area planned for ground water remediation for CVOCs), soil analytical results from the first clay unit from a number of locations, especially soil boring SB-20, suggest that CVOC impacts to the first clay may require remediation as a CVOC source;

6.0 REMEDIAL ALTERNATIVES ANALYSIS

TRC and the Client (CPB) are currently evaluating alternative remedial options to address the expanded area of contamination. Based on the results of this investigation, the potential treatment area has expanded beyond the scope of the previously proposed remedial options. Additionally, the petroleum product area is larger than previously anticipated, which alters the remedial goals and objectives, and will require a different treatment plan.

Based on the information provided in this report, additional time is required to develop and evaluate proposed remedial alternatives with our client in the next two weeks. TRC will submit a revised project schedule to the NYSDEC under separate cover, providing the revised remedial plan for the Site.

If you have any questions or need additional information, please call.

Very truly yours,

TRC ENVIRONMENTAL CORPORATION

Howard Nichols, P.E.
Project Manager

Nidal Rabah, PhD., P.E.
Vice President

Enclosures:
Figure 1 – Site Location Map
Figure 2 – Site Plan with TRC Test Pit and Soil Boring Locations
Figure 3 – Approximate Extent of Free and Residual Product

Table 1 – Sample Summary Table
Table 2 – Soil Analytical Results Summary
Table 3 – Hydropunch Ground Water Sample Results Summary

Attachment 1 – Test Pit and Soil Boring Logs
Attachment 2 – Selected Test Pit and Soil Boring Photographs

IN-SITU THERMAL TREATMENT (ISTT) REMEDIAL ACTION REPORT

CPB – Property
Block 15950, Lot 29
Edgemere, New York

Prepared For:

Corporation of the Presiding Bishop of The
Church of Jesus Christ of Latter Day Saints, a Utah Corporation Sole
50 E. North Temple St.
Salt Lake City, Utah 84150

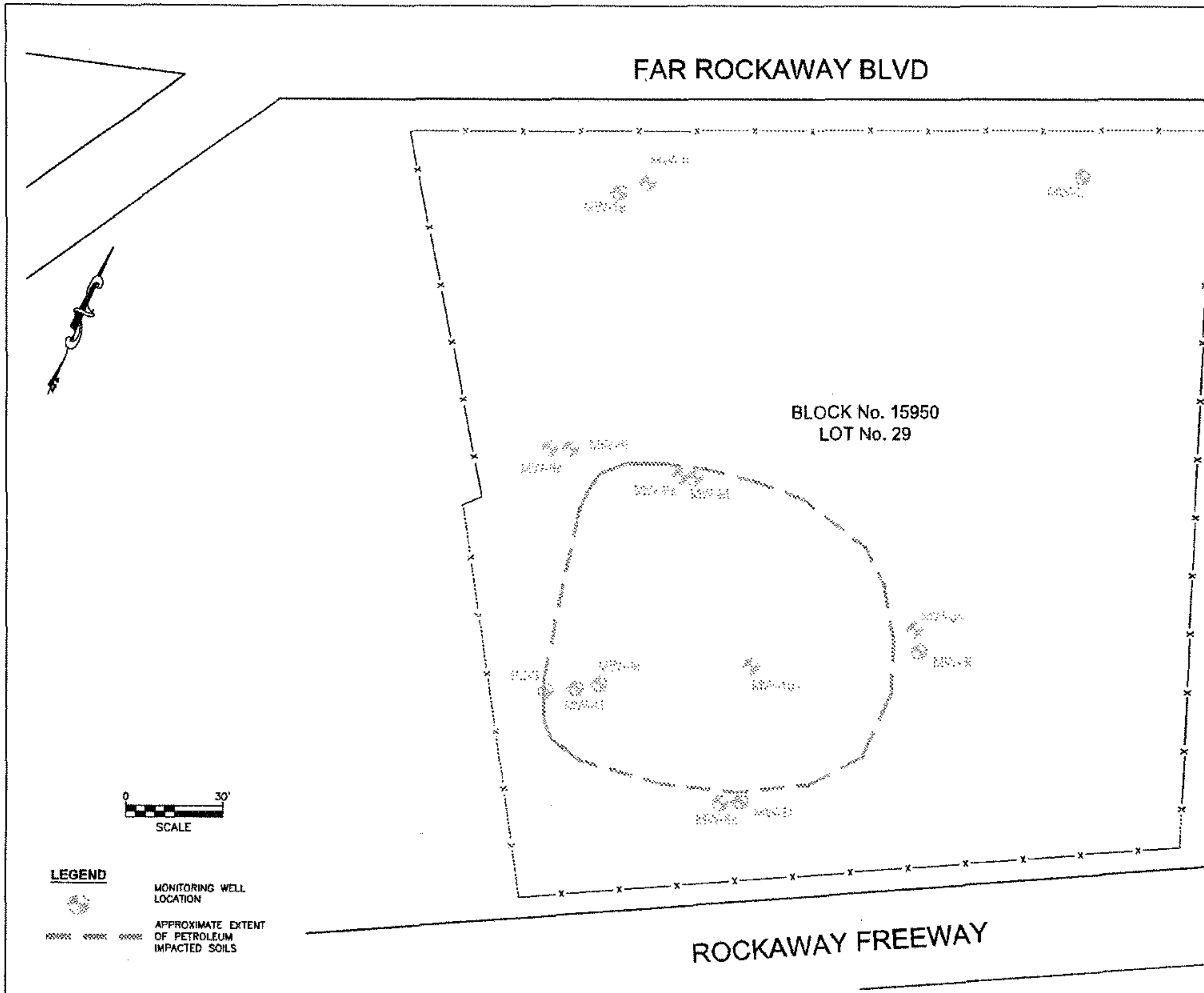
Prepared by:

TRC Environmental Corporation
57 East Willow St.
Millburn, NJ 07041

TRC Job Number: 174788

August 2012

LDS00096950



FILE: M:\CAD FILES\VISION PROJECTS\174788\FINAL REPORT\FIGURE 2 - SITE PLAN.DWG, DATE: 01/19/2012 03:50:36PM

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

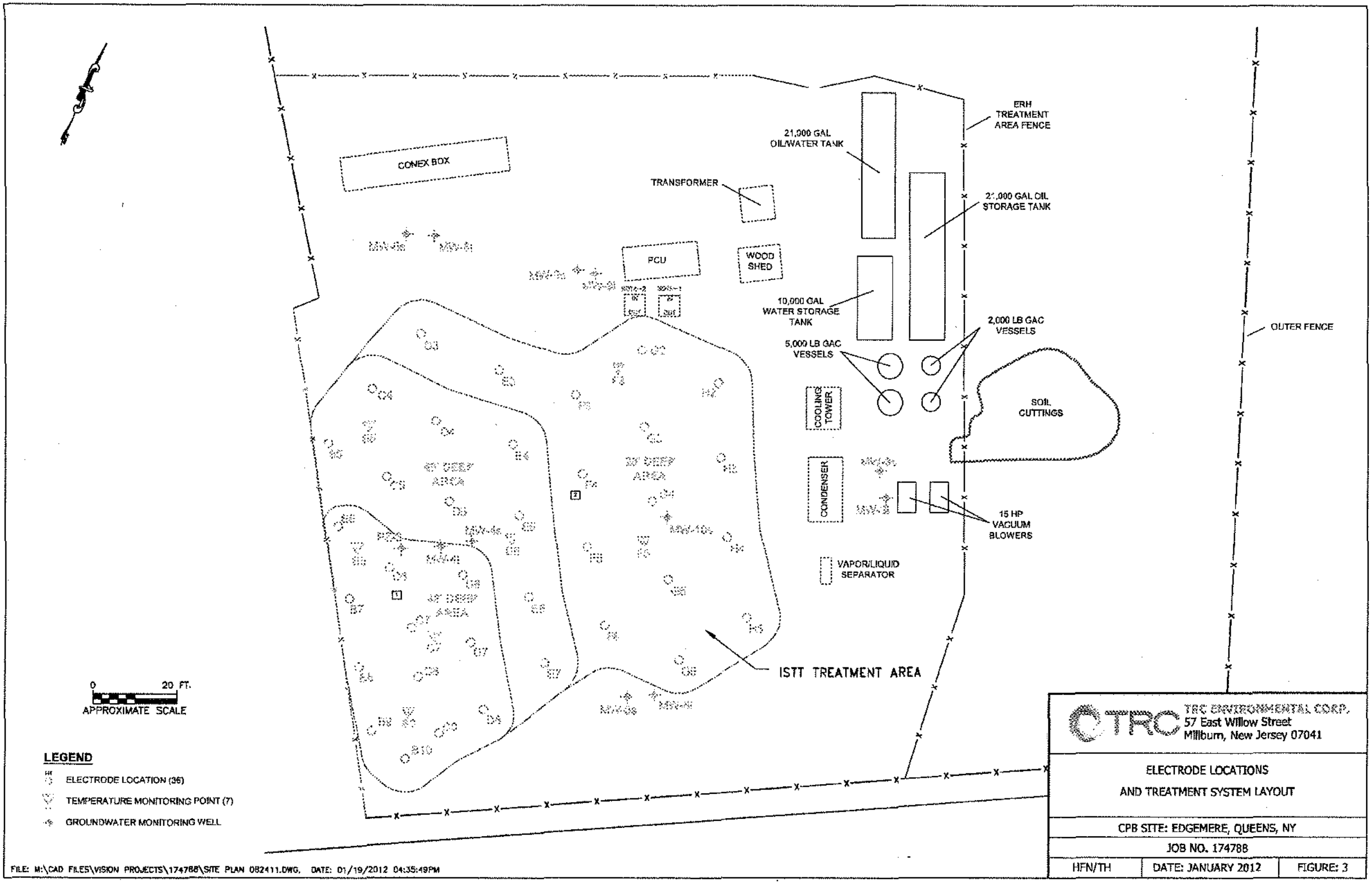
SITE PLAN WITH
MONITORING WELL LOCATIONS
AND EXTENT OF PETROLEUM IMPACTS

CPB SITE: EDGEMERE, QUEENS, NY

JOB NO. 174788

HFN/TH	DATE: JANUARY 2012	FIGURE: 2

LDS0096992


CONEX BOX
TRANSFORMER
PCU
WOOD SHED
21,000 GAL OIL/WATER TANK
21,000 GAL OIL STORAGE TANK
10,000 GAL WATER STORAGE TANK
ERH TREATMENT AREA FENCE
5,000 LB GAC VESSELS
2,000 LB GAC VESSELS
OUTER FENCE
SOIL CUTTINGS
COOLING TOWER
CONDENSER
15 HP VACUUM BLOWERS
VAPOR/LIQUID SEPARATOR
ISTT TREATMENT AREA
0 20 FT.
APPROXIMATE SCALE
LEGEND
ELECTRODE LOCATION (36)
TEMPERATURE MONITORING POINT (7)
GROUNDWATER MONITORING WELL
TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041
ELECTRODE LOCATIONS
AND TREATMENT SYSTEM LAYOUT
CPB SITE: EDGEMERE, QUEENS, NY
JOB NO. 174788
HFN/TH
DATE: JANUARY 2012
FIGURE: 3
FILE: M:\CAD FILES\VISION PROJECTS\174788\SITE PLAN 082411.DWG, DATE: 01/19/2012 04:35:49PM

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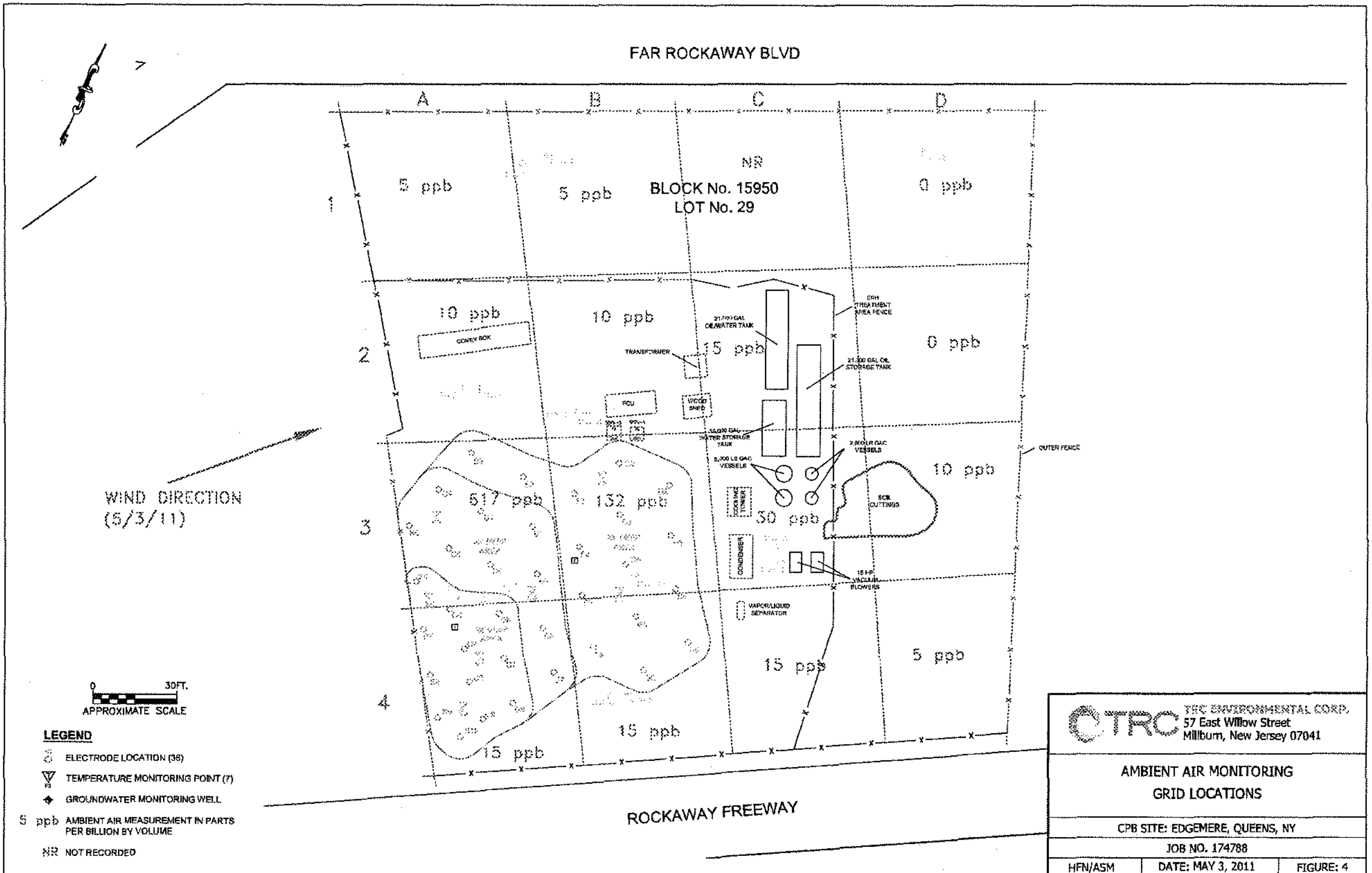
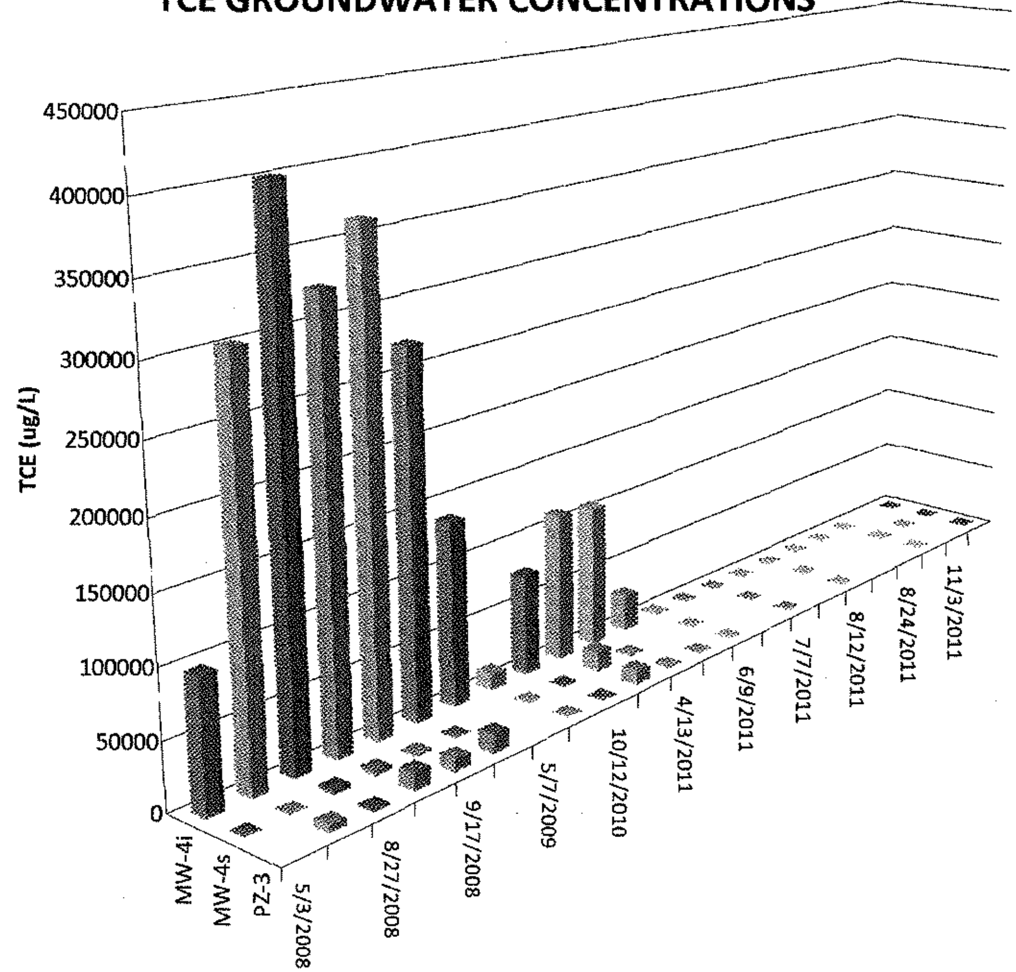


FILE: M:\CAD FILES\VISION PROJECTS\174788\AMBIENT AIR MONITORING GRID LOCATIONS.DWG. DATE: 01/19/2012 05:18:34PM

LDS00096994

FIGURE 5
TCE GROUNDWATER CONCENTRATIONS



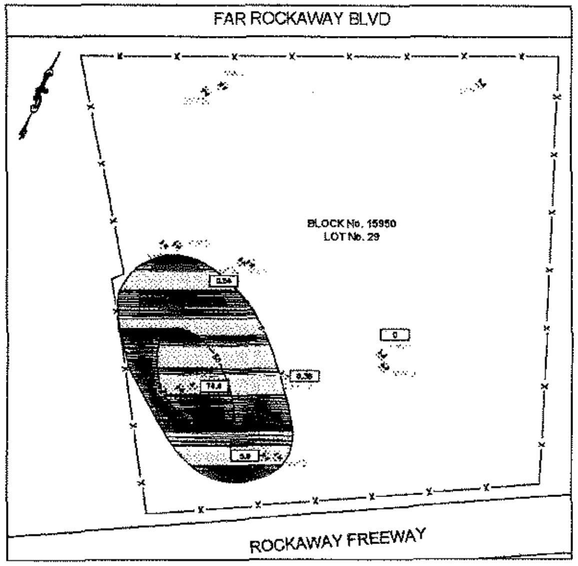


FIGURE 6a - PRE-TREATMENT SHALLOW TCE ISOPLETHS (OCTOBER 2010)

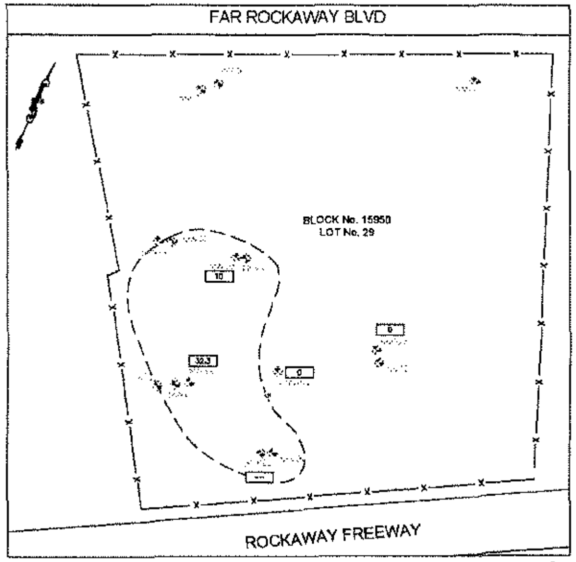


FIGURE 6b - POST-TREATMENT SHALLOW TCE ISOPLETHS ≥ 5 ppb MCL OF TCE (DECEMBER 2011)

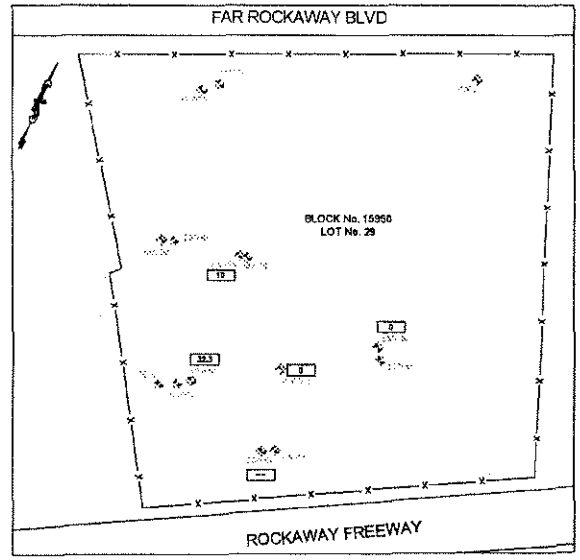


FIGURE 6c - POST - TREATMENT SHALLOW TCE ISOPLETHS ≥ RCG (DECEMBER 2011)

LEGEND

- MONITORING WELL LOCATION
- FENCE
- TCE ISOPLETH CONTOUR
- TCE CONCENTRATION IN PPB

TCE CONCENTRATION KEY

- 100 - 50 ppb
- 50 - 5 ppb

NOTES

RCG = REMEDIATION CLEAN UP GOAL FOR TCE (400 ppb)
ppb = PARTS PER BILLION
MCL TCE = MAXIMUM CONTAMINANT LEVEL OF TCE IN DRINKING WATER (5ppb)
--- = NOT SAMPLED

0 60' 120'
GRAPHIC SCALE

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

SHALLOW ZONE TCE ISOPLETHS (ppb)

CPB SITE: EDGEMERE, QEENS, NY

JOB NO.: 174788

YK/MG	JUNE 2012	FIGURE: 6

FILE: M:\CAD FILES\VISION PROJECTS\174788\FINAL REPORT\FIGURE 6 - SHALLOW ZONE CONTOURS TCE-11X17.DWG, DATE: 07/27/2012 08:25:59AM

LDS0009996

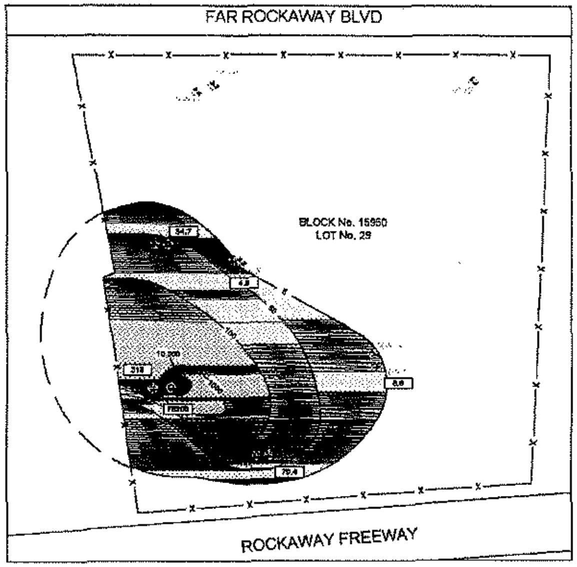


FIGURE 7a - PRE-TREATMENT INTERMEDIATE TCE ISOPLETHS (OCTOBER 2010)

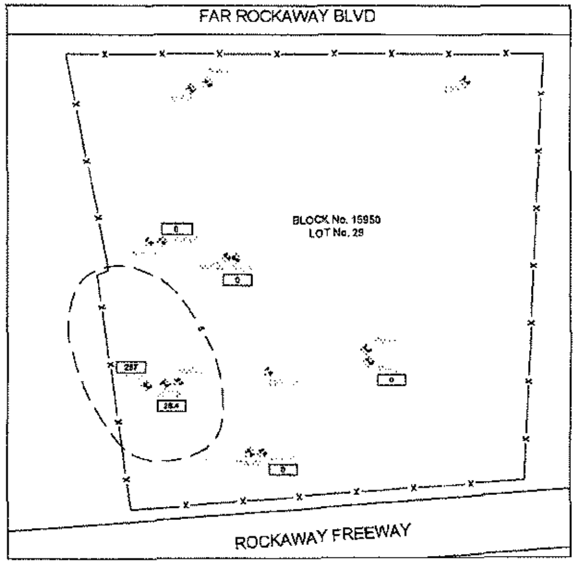


FIGURE 7b - POST-TREATMENT INTERMEDIATE TCE ISOPLETHS ≥ 5 ppb MCL OF TCE (DECEMBER 2011)

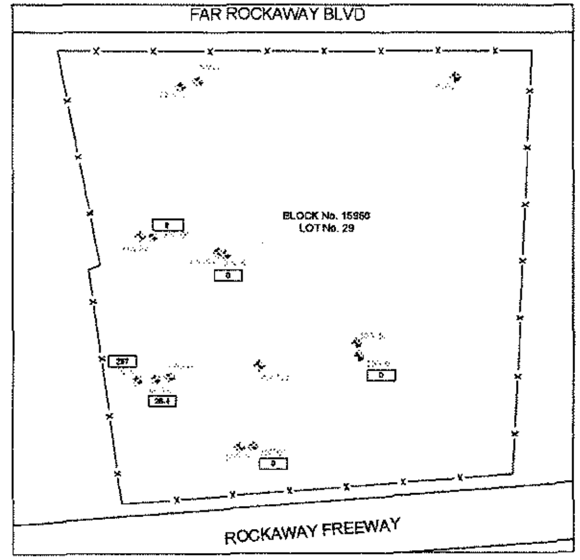


FIGURE 7c - POST - TREATMENT INTERMEDIATE TCE ISOPLETHS ≥ RCG (DECEMBER 2011)

LEGEND

- MONITORING WELL LOCATION
- FENCE
- TCE ISOPLETH CONTOUR
- 32.2 — TCE CONCENTRATION IN PPB

TCE CONCENTRATION KEY

- > 10,000 ppb
- 10,000 - 1,000 ppb
- 1,000 - 100 ppb
- 100 - 50 ppb
- 50 - 5 ppb

NOTES

* DATA FROM AUGUST 2011 SAMPLING EVENT. NO SAMPLING PERFORMED IN DECEMBER 2011 AT THIS LOCATION.
RCG = REMEDIATION CLEAN UP GOAL FOR TCE (400 ppb)
ppb = PARTS PER BILLION
MCL TCE = MAXIMUM CONTAMINANT LEVEL OF TCE IN DRINKING WATER (5ppb)
[--] = NOT SAMPLED

0 60' 120'
GRAPHIC SCALE

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

INTERMEDIATE ZONE TCE ISOPLETHS (ppb)

CPB SITE: EDGEMERE, QEENS, NY

JOB NO.: 174788

YK/MG	JUNE 2012	FIGURE: 7

FILE: M:\CAD FILES\VISION PROJECTS\174788\FINAL REPORT\FIGURE 7 - INTERMEDIATE ZONE CONTOURSTCE-11X17.DWG, DATE: 07/27/2012 09:25:41AM

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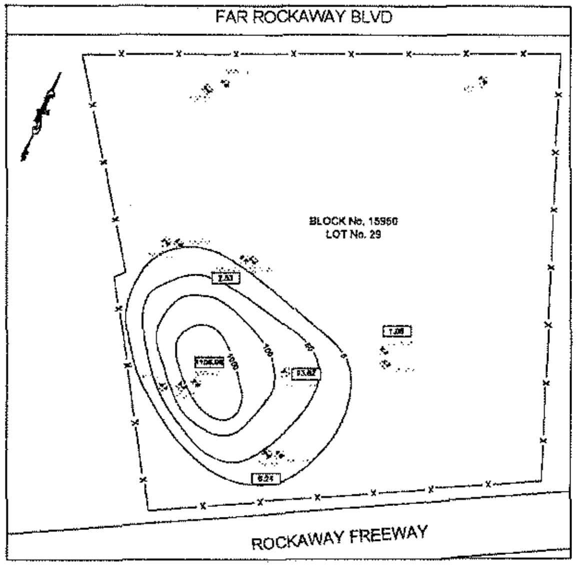

FIGURE 8a - PRE-TREATMENT SHALLOW TOTAL VOCs ISOPLETHS (OCTOBER 2010)

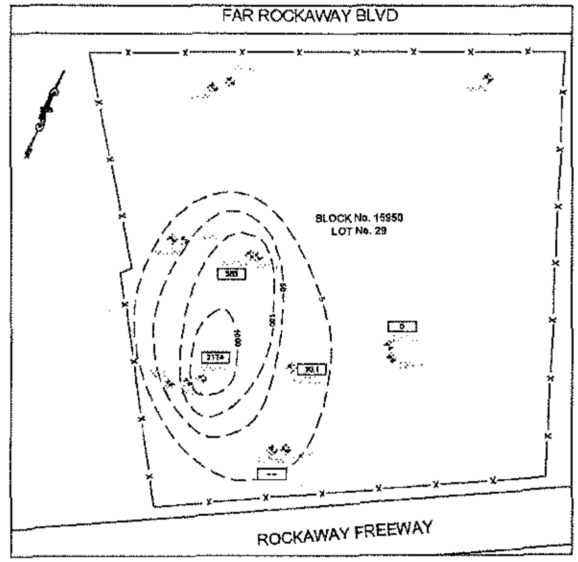

FIGURE 8b - POST-TREATMENT SHALLOW TOTAL VOC ISOPLETHS (DECEMBER 2011)

LEGEND

✧	MONITORING WELL LOCATION
---x---x---	FENCE
——50——	TOTAL VOCs ISOPLETH
[box]	TOTAL VOCs CONCENTRATION IN PPB

NOTES

[--] = NOT SAMPLED

ppb = PARTS PER BILLION

0 60' 120'
GRAPHIC SCALE

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

SHALLOW ZONE TOTAL VOCs ISOPLETHS (ppb)

CPB SITE: EDGEMERE, QEENS, NY

JOB NO.: 174788

YK/MG | JUNE 2012 | FIGURE: 8

FILE: M:\CAD FILES\VISION PROJECTS\174788\FINAL REPORT\FIGURE 8 - SHALLOW ZONE TOTAL VOC CONTOURS-11X17.DWG. DATE: 07/27/2012 09:25:20AM

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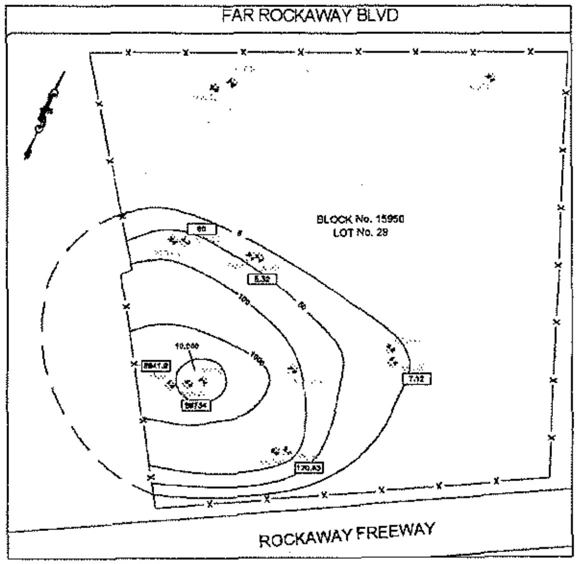

FIGURE 9a - PRE-TREATMENT INTERMEDIATE TOTAL VOCs ISOPLETHS (OCTOBER 2010)

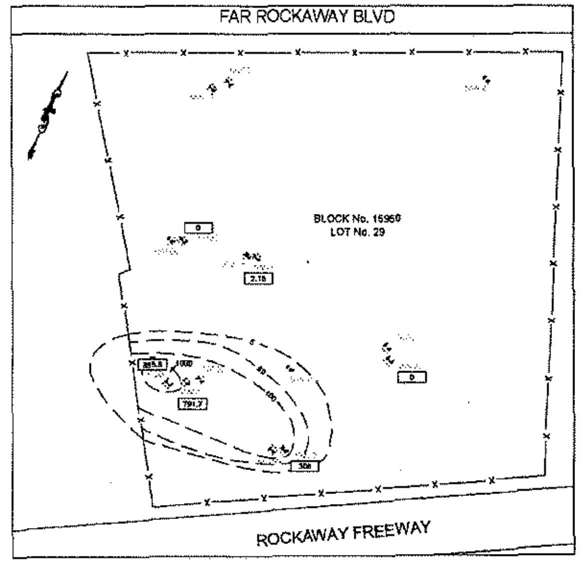

FIGURE 9b - POST-TREATMENT INTERMEDIATE TOTAL VOCs ISOPLETHS (DECEMBER 2011)

LEGEND

MONITORING WELL LOCATION

FENCE

TOTAL VOCs ISOPLETH

TOTAL VOCs CONCENTRATION IN PPB

NOTES

* DATA FROM AUGUST 2011 SAMPLING EVENT. NO SAMPLING PERFORMED IN DECEMBER 2011 AT THIS LOCATION.

0 60' 120'
GRAPHIC SCALE

TRC ENVIRONMENTAL CORP.
57 East Willow Street
Millburn, New Jersey 07041

INTERMEDIATE ZONE TOTAL VOCs ISOPLETHS (ppb)

CPB SITE: EDGEMERE, QEENS, NY		
JOB NO.: 174788		
YK/MG	JUNE 2012	FIGURE: 9

FILE: M:\CAD FILES\VISION PROJECTS\174788\FINAL REPORT\FIGURE 9 - INTERMEDIATE ZONE TOTAL VOC CONTOURS-11X17.DWG, DATE: 07/27/2012 09:28:19AM

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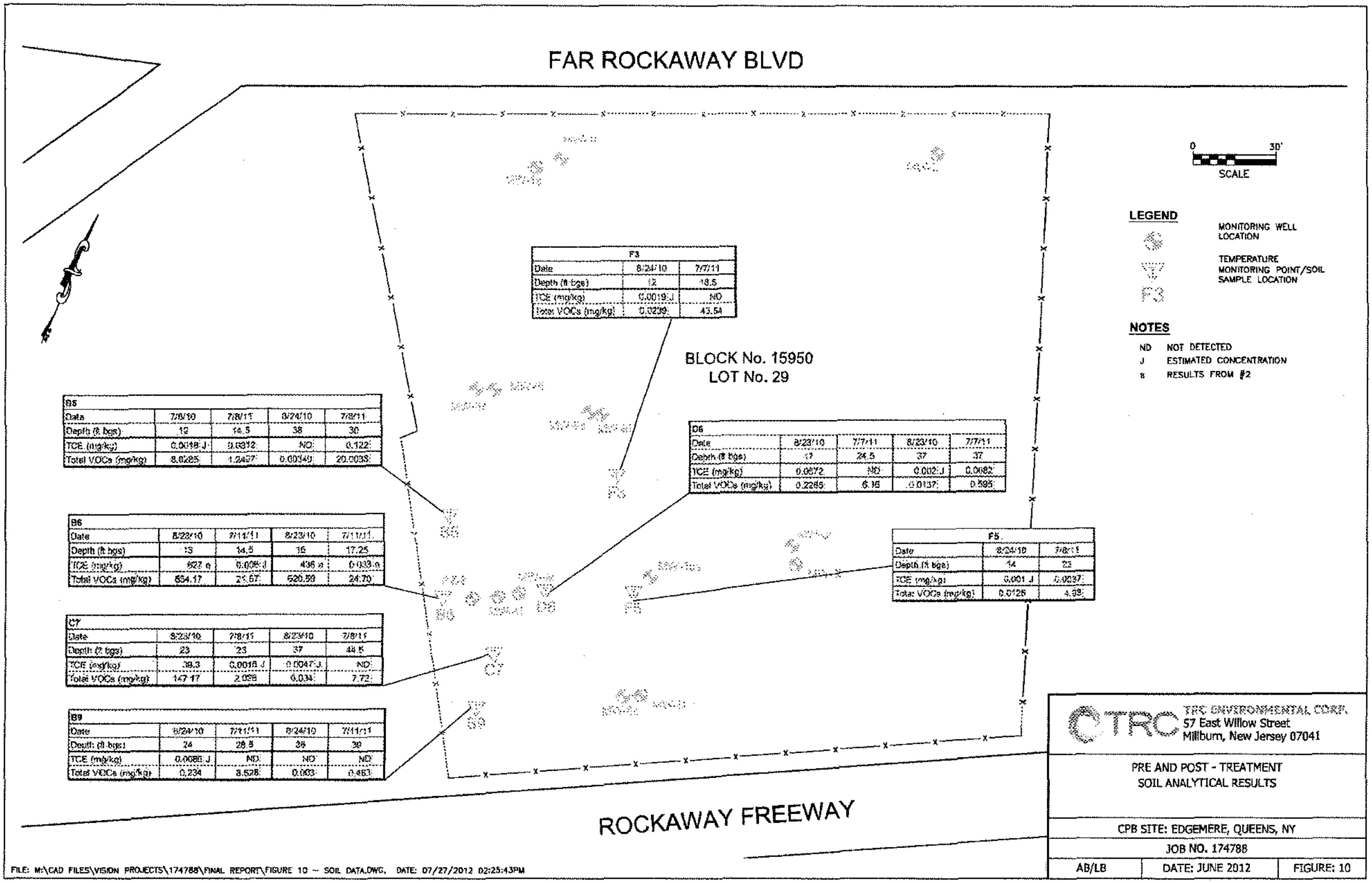


F3		
Date	8/24/10	7/7/11
Depth (ft bgs)	12	18.5
TCE (mg/kg)	0.0019 J	ND
Total VOCs (mg/kg)	0.0239	43.54

B5				
Date	7/6/10	7/8/11	8/24/10	7/8/11
Depth (ft bgs)	12	14.5	38	30
TCE (mg/kg)	0.0018 J	0.0312	ND	0.122
Total VOCs (mg/kg)	8.0285	1.2457	0.00349	20.0038

D6				
Date	8/23/10	7/7/11	8/23/10	7/7/11
Depth (ft bgs)	17	24.5	37	37
TCE (mg/kg)	0.0872	ND	0.002 J	0.0082
Total VOCs (mg/kg)	0.2285	6.16	0.0137	0.595

B6				
Date	8/23/10	7/11/11	8/23/10	7/11/11
Depth (ft bgs)	13	14.5	16	17.25
TCE (mg/kg)	627 e	0.006 J	436 e	0.033 e
Total VOCs (mg/kg)	654.17	21.67	520.59	24.70

F5		
Date	8/24/10	7/8/11
Depth (ft bgs)	14	23
TCE (mg/kg)	0.001 J	0.0037
Total VOCs (mg/kg)	0.0126	4.99

C7				
Date	8/23/10	7/8/11	8/23/10	7/8/11
Depth (ft bgs)	23	23	37	44.5
TCE (mg/kg)	39.3	0.0016 J	0.0047 J	ND
Total VOCs (mg/kg)	147.17	2.026	0.034	7.72

B9				
Date	8/24/10	7/11/11	8/24/10	7/11/11
Depth (ft bgs)	24	28.5	38	39
TCE (mg/kg)	0.0088 J	ND	ND	ND
Total VOCs (mg/kg)	0.234	8.528	0.003	0.463

TABLES

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

			TRC Sample No.:	MW-1s	MW-1i	MW-2	MW-3i	MW-3ir				MW-3s					MW-4i					
			Date Sampled:	05/05/08	05/05/08	05/05/08	05/05/08	05/25/10	10/12/10	09/28/11	12/13/11	05/05/08	05/25/10	10/12/10	09/26/11	12/13/11	05/03/08	08/13/08	08/27/08	09/03/08	09/17/08	12/02/08
			Lab Sample No.:	J89872-2	J89872-1	J89872-3	J89872-4	JA47477-4	JA58729-6	JA87379-6	JA94692-2F	J89872-6	JA47477-2	JA58729-1	JA87379-1	JA94692-4	J89872-9	J98136-5	J99218-5	J99531-5	JA863-5	JA6654-6
			Laboratory:	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	CAS No.	Abbrv.	GWQS																			
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.50 J	ND	ND	ND
Bromodichloromethane	75-27-4	BDCM	–	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	–	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	–	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	7	ND	ND	ND	0.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	–	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.20	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	43.10	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	0.97 J	ND	ND	1.40	ND	0.52 J	ND	ND	ND	ND	0.54 J	0.52 J	ND	10700	18500	32500 a	43900 a	59400	20900
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	212	230	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	Total = 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.70 J	ND	ND	ND
Methylene chloride	75-09-2	MC	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	208 J	ND	407.08	327	ND	ND
Toluene	108-88-3	Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.90	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42.20	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	1.10	0.24 J	ND	0.98 J	0.67 J	6.60	ND	ND	ND	ND	ND	ND	ND	97300	302000	401000 a	324000 a	363000 a	272000
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride	75-01-4	VC	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.62 J	ND	489 J	751 J	1190	1670	2610	1020
Xylenes (total)	1330-20-	Xylene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.30	ND	ND	
Total Targeted VOCs				2.07	0.24	0.00	2.58	0.67	7.12	ND	ND	ND	ND J	0.54 J	1.14 J	ND	108695	321251	435487.9	370127	425010	293920
Total TICs			500	11.00 J	U	0.00	18.80 J	ND	ND	ND	ND	10.00 J	ND	0.54	ND	ND	50	ND	303 J	ND	ND	ND
Total VOCs				13.07	0.24	ND	22.38	0.67	7.12	ND	ND	10.00	0.00	1.08	1.14	ND	108745	321251	435790.9	370127	425010	293920
Biological (cells/mL)																						
Dehalococcoides		DHC	–	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard.
Bold indicates concentration above GWQS.

LDS0097032

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

			TRC Sample No.:	MW-4I															
			Date Sampled:	05/07/09	05/25/10	10/12/10	03/02/11	04/13/11	05/11/11	06/09/11	06/22/11	07/07/11	07/19/11	08/04/11	08/12/11	08/18/11	08/24/11	09/26/11	12/14/11
			Lab Sample No.:	JA18295-4	JA47477-8	JA58729-11	JA69441-4	JA73115-4	JA75750-1	JA78067-4	JA79231-2	JA80374-4	JA81333-1	JA82971-1	JA83569-1	JA84048-2	JA84516-1	JA87379-8	JA94818-1
			Laboratory:	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	CAS No.	Abbrv.	GWQS																
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	1	ND	ND	ND	ND	ND	ND	7.30	7.40	6.40	18.10	18.40	17.20	17.40	29.60	82.40	25.10
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	11200	479	12800	6750	4150	1430	231	88.60	33.70	6750	41.50	35.80	30.20	34.00	37.20	311
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	ND	ND	82.10 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	Total = 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	ND	ND	ND	ND	ND	ND	0.90	0.48	ND	0.43	0.46	ND	ND	0.75 J	ND	ND
Methylene chloride	75-09-2	MC	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	267	54.10	83.30 J	147	273	76	10	5.00	2.00	ND	1.30	ND	ND	1.70	ND	ND
Toluene	108-88-3	Toluene	5	ND	ND	ND	ND	ND	ND	4.90	4.70	4.20	8.70	8.00	8.20	6.40	14.60	13.40	23.10
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	138000	12200 a	76200	112000	108000	27400	1020	340	144	112000 a	77.20	84.00	67.60	165	135	28.40
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	2	205 J	10.50 J	589	179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1330-20-	Xylene	5	ND	ND	ND	ND	ND	ND	7.80	4.80	3.00	4.70	5.40	5.00	2.80 J	8.20	4.70 J	ND
Total Targeted VOCs				149672	12743.6	89734.4	119076	112423	28906	1281.9	450.98	193.30	118782	152.26	150.00	124.50	254.18	272.70	387.60
Total TICs			500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	519.00	315.00 J
Total VOCs				149672	12743.6	89734.4	119076	112423	28906	1281.9	450.98	193.30	118782	152.26	150.00	124.50	254.18	791.70	702.60
Biological (cells/mL)																			
Dehalococcoides		DHC	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard
Bold indicates concentration above GWQS.

LDS00097033

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

			TRC Sample No.:	MW-4s																
			Date Sampled:	05/03/08	08/13/08	08/27/08	09/03/08	09/17/08	12/02/08	05/07/09	05/25/10	10/12/10	03/02/11	04/13/11	06/08/11	07/06/11	08/12/11	09/26/11	11/03/11	12/13/11
			Lab Sample No.:	J89872-7	J98136-4	J99218-4	J99531-4	JA883-4	JA8854-5	JA18295-3	JA47477-5	JA58729-9	JA69441-2	JA73115-2	JA78067-2	JA80374-2	JA83569-2	J87379-7	JA91179-1	JA94692-5
			Laboratory:	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	**CAS No.**	**Abbrv.**	**GWQS**																	
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Benzene	71-43-2	Benzene	1	0.77 J	0.58 J	ND	ND	0.51 J	0.51 J	0.43 J	0.70 J	0.28 J	ND	**3.00**	ND	**10.00**	**1.10** J	**13.20**	**10.60**	**7.20**
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chloroform	67-66-3	Chloroform	7	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	1.10	1.00	ND	ND	2.20	4.30 J	ND	2.00	1.50	ND	ND	ND	ND	ND	**5.10**	**5.50**	1.60 J
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	**417**	**198**	**338**	**424**	**307** a	**944**	**222**	**191**	**574**	**14800**	**1130**	ND	ND	1.30 J	**2280** a	**2530**	**1850**
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	2.30	2.20	4.50 J	4.10 J	3.70	ND	4.00	**10.80**	**10.40**	ND	ND	ND	ND	ND	4.70 J	**5.60**	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	Total = 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	**6.60**	**8.20**	**5.60**	3.90 J	**5.20**	2.50 J	4.20	**8.20**	2.10	ND	3.00	ND	ND	ND	3.80 J	2.80 J	2.10
Methylene chloride	75-09-2	MC	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	ND	ND	**10.20**	**6.50**	2.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	Toluene	5	1.30	0.77 J	1.10 J	ND	0.63 J	ND J	0.41 J	0.84 J	0.40 J	ND	4.30	ND	ND	ND	**13.80**	**13.60**	**9.40**
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	**87.80**	**8.10**	**3690** a	**3100** a	**1000** a	**253**	**242**	**108**	**74.40**	**14800**	**851**	**13.10**	ND	**5.40**	**988.00** a	**224.00**	**32.30**
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	2	**47.70**	**43.20**	**32.60**	**43.80**	**59.60**	**222**	**22.10**	**147**	**193**	**1220**	ND	ND	ND	ND	ND	**8.20**	**4.40** J
Xylenes (total)	1330-20-	Xylene	5	**12.70**	**13.10**	**5.70**	4.70 J	**6.70**	ND	**6.10**	**9.50**	2.80	ND	**7.00**	ND	ND	ND	**16.00**	**15.50**	**9.70**
Total Targeted VOCs				577.60	275.15	4077.90	3586.90	1388.34	1426.31	501.24	476.14	856.68	30820.00	1998.30	13.10	10.00	7.80	3324.60	2815.80	1916.70
Total TICs			500	ND	172.80 J	264.00 J	281.00 J	137.60 J	ND	122.30 J	250.30 J	250.30 J	ND	ND	ND	ND	ND	**956.00** J	ND	258.00 J
Total VOCs				577.60	448.05	4341.90	3867.90	1525.94	1426.31	623.54	726.44	1108.98	30820.00	1998.30	13.10	10.00	7.80	4280.60	2815.80	2174.70
Biological (cells/mL)																				
Dehalococcoides		DHC	--	NA	NA	NA	NA	NA	NA	NA	13200.00	NA	NA	NA	NA	NA	NA	NA	NA	446.00

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard.
Bold indicates concentration above GWQS.

LDS00097034

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

			TRC Sample No.:	MW-5s	MW-5i	MW-6i		MW-8s	MW-8i		MW-9i				
			Date Sampled:	12/02/08	12/02/08	10/12/10	08/18/11	10/12/10	10/12/10	08/18/11	05/25/10	10/12/10	08/18/11	09/26/11	12/13/11
			Lab Sample No.:	JA6854-1	JA6854-2	JA58729-7	JA84046-3	JA58729-4	JA58729-5	JA84046-4	JA47477-7	JA58729-8	JA84046-1	JA87379-3	JA94692-3
			Laboratory:	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	**CAS No.**	**Abbrv.**	***GWQS***												
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	1	ND	ND	ND	ND	ND	ND	**20.10**	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	**19.60 J**	ND	ND	ND	ND	0.71 J	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	**4090**	**36000**	**5.30**	ND	0.34 J	**72.30**	**235**	0.94 J	0.42 J	ND	1.40	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	**131**	**563.0**	ND	ND	ND	0.72 J	2.90	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	*Total* = 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	MC	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	Toluene	5	ND	ND	ND	ND	ND	0.40 J	**17.40**	ND	ND	ND	0.29 J	ND
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	**59.90**	**9510**	**54.70**	ND	**5.90**	**79.40**	ND	**14.50**	4.90	ND	ND	ND
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	2	**770**	**8030**	ND	ND	ND	**16.90**	**24.40**	ND	ND	ND	0.46 J	ND
Xylenes (total)	1330-20-	Xylene	5	ND	ND	ND	ND	ND	ND	**5.40**	ND	ND	ND	ND	ND
Total Targeted VOCs				5070.50	52103.00	60.00	ND	6.24	170.43	305.20	15.44	5.32	ND	2.15	ND
Total TICs			*500*	ND	ND	ND J	ND	ND J	ND J	ND	ND J	ND J	ND	ND	ND
Total VOCs				5070.50	52103.00	60.00	ND	6.24	170.43	305.20	15.44	5.32	ND	2.15	ND
Biological (cells/mL)															
Dehalococcoides		DHC	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard
Bold indicates concentration above GWQS

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

		TRC Sample No.:		MW-9s				MW-10s										PZ-1					
		Date Sampled:		05/25/10	10/12/10	09/26/11	12/13/11	05/25/10	10/12/10	03/02/11	04/13/11	06/08/11	06/22/11	07/06/11	08/12/11	09/26/11	12/13/11	08/13/08	08/27/08	09/03/08	09/17/08	12/02/08	05/07/09
		Lab Sample No.:		JA47477-1	JA58729-2	JA87379-2	JA94692-1	JA47477-3	JA58729-3	JA69441-1	JA73115-1	JA78067-1	JA79231-1	JA80374-1	JA83569-3	JA87379-5	JA94692-6	J98136-1	J99218-3	J99531-1	JA863-1	JA6854-3	JA18295-1
		Laboratory:		Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	**CAS No.**	**Abbrv.**	***GWQS***																				
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	1	0.29 J	0.57 J	**16.50**	**10.70**	0.37 J	ND	**13.00**	ND	**26.50**	**18.40**	**14.80**	**14.30**	**8.80**	**5.00**	0.59 J	ND	0.89 J	ND	ND	0.82 J
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	0.72	ND	ND	0.29 J	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	ND	0.49 J	**337**	**57.80**	0.68 J	0.70 J	**10.00**	ND	**21.10**	**10.00**	**8.50**	**6.70**	**7.70**	ND	3.60	**981**	**781**	**262**	**63.40**	**41.90**
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	ND	ND	**7.00 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.20	ND	**6.30**	**5.70 J**	3.50 J	1.80 J
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	*Total = 1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	0.33 J	ND	ND	ND	0.41 J	ND	2.70	ND	3.30	2.30	1.70	1.30	1.40	ND	**9.20**	**7.70 J**	**12.60**	**10.80**	4.40 J	**8.80**
Methylene chloride	75-09-2	MC	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	0.89 J	0.93 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.50 J	ND	0.73 J
Toluene	108-88-3	Toluene	5	ND	ND	**12.20**	**7.30 J**	0.38 J	ND	**26.70**	ND	**30.20**	**22.40**	**18.90**	**18.70**	**16.50**	**10.30**	0.65 J	ND	1.20 J	ND	ND	0.67 J
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	0.41 J	0.54 J	ND	**10.00**	0.41 J	0.38 J	ND	ND	**76.10**	ND	ND	ND	ND	ND	**6.10**	**6730 a**	**4090 a**	**2580 a**	**890**	**302**
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	2	ND	ND	**687**	**298**	ND	0.27 J	ND	ND	ND	ND	ND	ND	ND	ND	0.91 J	**24.40**	**19.70**	**7.00 J**	**5.80**	1.60 J
Xylenes (total)	1330-20-	Xylene	5	0.74 J	ND	3.50 J	ND	1.50	0.58 J	**17.40**	ND	**15.90**	**10.80**	**9.80**	**7.60**	**6.10**	4.80	**15.20**	**5.70**	**17.40**	**14.90**	**5.50**	**14.10**
Total Targeted VOCs				2.66	2.53	1063.20	383.60	3.75	2.22	69.80	ND	173.10	64.62	53.70	48.60	40.79	20.10	37.65	7748.80	4929.09	2883.90	972.60	372.42
Total TICs			*500*	142.10 J	ND J	ND	ND	91.40 J	91.40 J	ND	ND	ND	ND	ND	ND	432.60	ND	215.00 J	170.00 J	**512.00 J**	ND	25.00	245.30 J
Total VOCs				144.76	2.53	1063.20	383.60	95.15	93.62	69.80	ND	173.10	64.62	53.70	48.60	473.39	20.10	252.65	7918.80	5441.09	2883.90	997.60	617.72
Biological (cells/mL)																							
Dehalococcoides		DHC	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard.
Bold indicates concentration above GWQS.

LDS00097036

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

		TRC Sample No.:		PZ-2				PZ-3															
		Date Sampled:		08/13/08	08/27/08	09/03/08	09/17/08	08/13/08	08/27/08	09/03/08	09/17/08	12/02/08	05/07/09	05/25/10	10/12/10	03/02/11	04/13/11	05/12/11	06/08/11	07/07/11	08/12/11	09/28/11	12/14/11
		Lab Sample No.:		J98136-2	J99218-2	J99531-2	JA863-2	J98136-3	J99218-1	J99531-3	JA863-3	JA6854-4	JA18295-2	JA47477-6	JA58729-10	JA69441-3	JA73115-3	JA75750-2	JA78087-3	JA80374-3	JA83569-4	JA87379-4	JA94818-2
		Laboratory:		Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	**CAS No.**	**Abbrv.**	***GWQS***																				
Acrolein	107-02-8	Acrolein	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	*1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**17.80**	**32.30**	**17.10**	**6.80**	**7.70**	**10.50**	**69.20**	**38.9 J**
Bromodichloromethane	75-27-4	BDCM	*--*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	*--*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	*--*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	*7*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	*--*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	*3*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	*3*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	*3*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	*0.6*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	*5*	**24.90**	**38.40**	**33.80**	**36.30**	**9.00 J**	ND	**11.10**	ND	ND	ND	0.83 J	**20.90 J**	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	*5*	**3780**	**5590 a**	**1630**	**2350.0 a**	**3060 a**	**1060**	**6130 a**	**8440**	**8160**	**3050**	**394 a**	**7050 a**	**3390**	**674**	**68.60**	1.50	ND	ND	ND	**613**
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	*5*	**48.70**	**52.50**	**11.20**	**11.70**	**25.10**	**17**	**32.10**	**41.10 J**	ND	**14.20 J**	**5.90**	**43.00**	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	*1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	*Total = 1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	*5*	**6.70 J**	4.60 J	**8.30 J**	**8.30 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**73.70**
Methylene chloride	75-09-2	MC	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	*5*	ND	ND	ND	ND	ND	ND	**11.20**	ND	ND	ND	ND	ND	**14.00**	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	Toluene	*5*	**5.70 J**	4.90 J	**5.40 J**	**6.80 J**	2.30 J	ND	ND	ND	ND	ND	ND	ND	ND	**23.00**	**8.80**	4.00	3.30	2.90 J	**21.20**	**189.00**
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	*1*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	*5*	**260**	**703.0**	**732**	**1400**	**5310**	**1190**	**13100 a**	**9450**	**13600**	**420**	**244 a**	**318**	**10100**	**591**	**27.20**	ND	ND	ND	ND	**267.00**
Trichlorofluoromethane	75-69-4	TCFM	*5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	*2*	**2260**	**2710 a**	**885**	**1180**	**753**	**113**	**219**	**201**	**49.40**	**38.20 J**	**12.70**	**1410**	**136**	**4.40**	ND	ND	ND	ND	ND	ND
Xylenes (total)	1330-20-	Xylene	*5*	**30.90**	**18.50**	**37.90**	**37.00**	**10.0**	ND	ND	ND	ND	ND	ND	ND	ND	**9.20**	2.90	1.60	1.50	ND	**8.40**	**404.00**
Total Targeted VOCs				6416.90	9121.90	3343.60	5030.10	9169.40	2380.00	19503.40	18132.10	21809.40	3522.40	657.43	8841.90	13657.80	1333.90	124.60	14.10	12.50	13.40	88.80	1546.70
Total TICs			*500*	ND	175.00 J	**585.00 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**757.00**	330.00 J
Total VOCs				6416.90	9296.90	3928.60	5030.10	9169.40	2380.00	19503.40	18132.10	21809.40	3522.40	657.43	8841.90	13657.80	1333.90	124.60	14.10	12.50	13.40	855.80	1876.70
Biological (cells/mL)																							
Dehalococcoides		DHC	*--*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	64.40	NA	NA	NA	NA	NA	NA	NA	NA	2.80

Notes
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard
Bold indicates concentration above GWQS.

LDS00097037

TRC Job No. 174788
\\RECO\GW Results Tables 072412.xls\GW

Table 3a
Volatile Organic Compounds (mg/L) - Ground Water
CPB Site - Edgemere, NY

		TRC Sample No.:		FB	FB	FB	FB	FB	FB	FB	FB	FB	TB	TB	TB	TB	TB	TB	TB	TB	TB
		Date Sampled:		08/13/08	08/27/08	09/03/08	09/17/08	12/02/08	05/25/10	10/12/13	12/13/11	12/14/11	08/13/08	08/27/08	09/03/08	09/17/08	12/02/08	05/25/10	10/12/10	08/18/11	12/13/11
		Lab Sample No.:		J98136-7	J99218-7	J99531-6	JA863-6	JA6854-7	JA47477-9	JA58729-12	JA94692-8	JA94818-3	J98136-8	J99218-8	J99531-7	JA863-7	JA6854-8	JA47477-10	JA47477-10	JA84046-5	JA94692-7
		Laboratory:		Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (µg/L)	**CAS No.**	**Abbrv.**	***GWQS***																		
Acrolein	107-02-8	Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	107-13-1	Acryl	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	CT	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8	2-CVE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	DBCM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	75-35-4	1,1-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01	c-1,3-DCP	Total = 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02	t-1,3-DCP		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	EB	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	MC	5	0.79 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.00 J	0.80 J	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	127-18-4	PCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	TCFM	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1330-20-	Xylene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Targeted VOCs				0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.00 J	0.80 J	ND	ND	ND	ND	ND	ND
Total TICs			500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs				0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Biological (cells/mL)																					
Dehalococcoides		DHC	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2
GWQS = NYSDEC's Ground Water Quality Standard.
Bold indicates concentration above GWQS.

LDS00097038

TRC Job No. 171798
R:\ECO\GW Results Tables 072412.xls\GW

Table 3b
Volatile Organic Compounds (umol/L) - Ground Water
CPB Site - Edgemere, NY

			MW-1s	MW-1i	MW-2	MW-3i	MW-3ir				MW-3s				
			05/05/08 J89872-2 Accutest	05/05/08 J89872-1 Accutest	05/05/08 J89872-3 Accutest	05/05/08 J89872-4 Accutest	05/25/10 JA47477-4 Accutest	10/12/10 JA58729-6 Accutest	09/26/11 JA87379-6 Accutest	12/13/11 JA94692-2F Accutest	05/05/08 J89872-6 Accutest	05/25/10 JA47477-2 Accutest	10/12/10 JA58729-1 Accutest	09/26/11 JA87379-1 Accutest	12/13/11 JA94692-4 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	0.01 J	ND	ND	0.01	ND	0.01 J	ND	ND	ND	ND	0.01 J	0.01 J	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	0.01	0.00 J	ND	0.01 J	0.01 J	0.05	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01 J	ND

			MW-4i												
			05/03/08 J89872-9 Accutest	08/13/08 J98136-5 Accutest	08/27/08 J99218-5 Accutest	09/03/08 J99531-5 Accutest	09/17/08 JA863-5 Accutest	12/02/08 JA6854-6 Accutest	05/07/09 JA18295-4 Accutest	05/25/10 JA47477-8 Accutest	10/12/10 JA58729-11 Accutest	03/02/11 JA69441-4 Accutest	04/13/11 JA73115-4 Accutest	05/11/11 JA75750-1 Accutest	06/09/11 JA78067-4 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	110.38	190.84	335.26 a	452.86 a	612.75	215.60	115.54	4.94	132.04	69.63	42.81	14.75	2.38
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	2.19	2.37	ND	ND	ND	ND	0.85 J	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	740.54	2298.50	3051.98 a	2465.94 a	2762.77 a	2070.17	1050.31	92.85 a	579.95	852.42	821.98	208.54	7.76
Vinyl chloride	75-01-4	VC	7.82 J	12.02 J	19.04	26.72	41.76	16.32	3.28 J	0.17 J	9.10	2.86	ND	ND	ND

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2

TRC Job No. 174780
GW Results Tables 072412.xls/uMoles CVOCs

Table 3b
Volatile Organic Compounds (umol/L) - Ground Water
CPB Site - Edgemere, NY

			MW-4I									MW-4s			
			06/22/11 JA79231-2 Accutest	07/07/11 JA80374-4 Accutest	07/19/11 JA81333-1 Accutest	08/04/11 JA82971-1 Accutest	08/12/11 JA83559-1 Accutest	08/18/11 JA84046-2 Accutest	08/24/11 JA84516-1 Accutest	09/26/11 JA87379-8 Accutest	12/14/11 JA94818-1 Accutest	05/03/08 J89872-7 Accutest	08/13/08 J98136-4 Accutest	08/27/08 J99218-4 Accutest	09/03/08 J99531-4 Accutest
VOCs (µmol/L)	CAS No.	Abbrv.													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	0.91	0.35	69.63	0.43	0.37	0.31	0.35	0.38	3.21	4.30	2.04	3.49	4.37
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	ND	ND	ND	ND	0.00 J	ND	ND	0.02	0.02	0.05 J	0.04 J
Trichloroethylene (TCE)	79-01-6	TCE	2.59	1.10	852.42 a	0.59	0.64	0.51	1.26	1.03	0.22	0.67	0.06	28.01 a	23.59 a
Vinyl chloride	75-01-4	VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.76	0.69	0.52	0.70

			MW-4s												
			09/17/08 JA863-4 Accutest	12/02/08 JA6854-5 Accutest	05/07/09 JA18295-3 Accutest	05/25/10 JA47477-5 Accutest	10/12/10 JA58729-9 Accutest	03/02/11 JA69441-2 Accutest	04/13/11 JA73115-2 Accutest	06/08/11 JA78067-2 Accutest	07/06/11 JA80374-2 Accutest	08/12/11 JA83569-2 Accutest	09/26/11 J87379-7 Accutest	11/03/11 JA91179-1 Accutest	12/13/11 JA94692-5 Accutest
VOCs (µmol/L)	CAS No.	Abbrv.													
1,1-Dichloroethylene	75-35-4	1,1-DCE	0.02	0.04 J	ND	0.02	0.02	ND	ND	ND	ND	ND	0.05	0.06	0.02 J
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	3.17 a	9.74	2.29	1.97	5.92	152.67	11.66	ND	ND	0.01 J	23.52 a	26.10	19.08
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	0.04	ND	0.04	0.11	0.11	ND	ND	ND	ND	ND	0.05 J	0.06	ND
Trichloroethylene (TCE)	79-01-6	TCE	7.61 a	1.93	1.84	0.82	0.57	112.64	6.48	0.10	ND	0.04	7.52 a	1.70	0.25
Vinyl chloride	75-01-4	VC	0.95	3.55	0.35	2.35	3.09	19.52	ND	ND	ND	ND	ND	0.13	0.07 J

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2

Table 3b
Volatile Organic Compounds (umol/L) - Ground Water
CPB Site - Edgemere, NY

			MW-5s	MW-5i	MW-6I		MW-8s	MW-8I		MW-9I				
			12/02/08 JA6854-1 Accutest	12/02/08 JA6854-2 Accutest	10/12/10 JA58729-7 Accutest	08/18/11 JA84046-3 Accutest	10/12/10 JA58729-4 Accutest	10/12/10 JA58729-5 Accutest	08/18/11 JA84046-4 Accutest	05/25/10 JA47477-7 Accutest	10/12/10 JA58729-8 Accutest	08/18/11 JA84046-1 Accutest	09/26/11 JA87379-3 Accutest	12/13/11 JA94692-3 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**												
1,1-Dichloroethylene	75-35-4	1,1-DCE	0.20 J	ND	ND	ND	ND	0.01 J	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	42.19	371.36	0.05	ND	0.00 J	0.75	2.42	0.01 J	0.00 J	ND	0.01	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	1.35	5.81	ND	ND	ND	0.01 J	0.03	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	0.46	72.38	0.42	ND	0.04	0.60	ND	0.11	0.04	ND	ND	ND
Vinyl chloride	75-01-4	VC	12.32	96.48	ND	ND	ND	0.27	0.39	ND	ND	ND	0.01 J	ND

			MW-9s				MW-10s									
			05/25/10 JA47477-1 Accutest	10/12/10 JA58729-2 Accutest	09/26/11 JA87379-2 Accutest	12/13/11 JA94692-1 Accutest	05/26/10 JA47477-3 Accutest	10/12/10 JA58729-3 Accutest	03/02/11 JA69441-1 Accutest	04/13/11 JA73115-1 Accutest	06/08/11 JA78067-1 Accutest	06/22/11 JA79231-1 Accutest	07/06/11 JA80374-1 Accutest	08/12/11 JA83569-3 Accutest	09/26/11 JA87379-5 Accutest	12/13/11 JA94692-6 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**														
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	ND	0.01 J	3.48	0.59	0.01 J	0.01 J	0.10	ND	0.22	0.10	0.09	0.07	0.08	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	0.07 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	0.00 J	0.00 J	ND	0.08	0.00 J	0.00 J	ND	ND	0.58	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	ND	ND	10.99	4.77	ND	0.00 J	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2

LDS00097041

TRC Job No. 174788
GW Results Tables 072412.xls/uMoles CVOCs

Table 3b
Volatile Organic Compounds (umol/L) - Ground Water
CPB Site - Edgemere, NY

			PZ-1						PZ-2				PZ-3		
			08/13/08 J98136-1 Accutest	08/27/08 J99218-3 Accutest	09/03/08 J99531-1 Accutest	09/17/08 JA863-1 Accutest	12/02/08 JA6854-3 Accutest	05/07/09 JA18295-1 Accutest	08/13/08 J98136-2 Accutest	08/27/08 J99218-2 Accutest	09/03/08 J99531-2 Accutest	09/17/08 JA863-2 Accutest	08/13/08 J98136-3 Accutest	08/27/08 J99218-1 Accutest	09/03/08 J99531-3 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND	ND	0.26	0.40	0.35	0.37	0.09 J	ND	0.11
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	0.04	10.12	8.06	2.70	0.65	0.43	38.99	57.66 a	16.81	24.24 a	31.57 a	10.93	63.23 a
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	0.01	ND	0.06	0.06 J	0.04 J	0.02 J	0.50	0.54	0.12	0.12	0.26	0.18	0.33
Trichloroethylene (TCE)	79-01-6	TCE	0.05	51.22 a	31.13 a	19.64 a	6.77	2.30	1.98	5.35	5.57	10.66	40.41	9.06	99.70 a
Vinyl chloride	75-01-4	VC	0.01 J	0.39	0.32	0.11 J	0.09	0.03 J	36.16	43.36 a	14.16	18.88	12.05	1.81	3.50

			PZ-3												
			09/17/08 JA863-3 Accutest	12/02/08 JA6854-4 Accutest	05/07/09 JA18295-2 Accutest	05/25/10 JA47477-6 Accutest	10/12/10 JA58729-10 Accutest	03/02/11 JA69441-3 Accutest	04/13/11 JA73115-3 Accutest	05/12/11 JA75750-2 Accutest	06/08/11 JA78067-3 Accutest	07/07/11 JA80374-3 Accutest	08/12/11 JA83569-4 Accutest	09/26/11 JA87379-4 Accutest	12/14/11 JA94818-2 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	0.01 J	0.22 J	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	87.06	84.18	31.46	4.06 a	72.73 a	34.97	6.95	0.71	0.02	ND	ND	ND	6.32
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	0.42 J	ND	0.15 J	0.06	0.44	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	71.92	103.51	3.20	1.86 a	2.42	76.87	4.50	0.21	ND	ND	ND	ND	2.03
Vinyl chloride	75-01-4	VC	3.22	0.79	0.61 J	0.20	22.56	2.18	0.07	ND	ND	ND	ND	ND	ND

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2

LDS00097042

Table 3b
Volatile Organic Compounds (umol/L) - Ground Water
CPB Site - Edgemere, NY

			FB	FB	FB	FB	FB	FB	FB	FB	FB	TB	TB	TB	TB
			08/13/08 J98136-7 Accutest	08/27/08 J99218-7 Accutest	09/03/08 J99531-6 Accutest	09/17/08 JA863-6 Accutest	12/02/08 JA6854-7 Accutest	05/25/10 JA47477-9 Accutest	10/12/13 JA58729-12 Accutest	12/13/11 JA94692-8 Accutest	12/14/11 JA94818-3 Accutest	08/13/08 J98136-6 Accutest	08/27/08 J99218-8 Accutest	09/03/08 J99531-7 Accutest	09/17/08 JA863-7 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**													
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

			TB	TB	TB	TB	TB
			12/02/08 JA6854-8 Accutest	05/25/10 JA47477-10 Accutest	10/12/10 JA47477-10 Accutest	08/18/11 JA84046-5 Accutest	12/13/11 JA94692-7 Accutest
VOCs (µmol/L)	**CAS No.**	**Abbrv.**					
1,1-Dichloroethylene	75-35-4	1,1-DCE	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	156-59-2	c-1,2-DCE	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	156-60-5	t-1,2-DCE	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	79-01-6	TCE	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	ND	ND	ND	ND	ND

Notes:
ND = Not Detected
NA = Not Analyzed
J = Estimated Concentration
a = Results from Run #2

Table 6
Pre and PostTreatment Soil Sample Results- VOCs
CPB Site - Edgemere, NY

			TRC Sample No.: Date Sampled: Lab Sample No.: Depth (ft): Laboratory:	B5-S1 7/8/2010 JA51077-4 12 Accutest	B5-PT-1 7/8/2011 JA80448-14 14.5 Accutest	B5-S2 8/24/2010 JA54790-9 39 Accutest	B5-PT-2 7/8/2011 JA80448-16 30 Accutest	B6-S1 8/23/2010 JA54790-1 13 Accutest	B6-PT-1 7/11/2011 JA80592-1 14.5 Accutest	B6-S2 8/23/2010 JA54790-3 16 Accutest	B6-PT-2 7/11/2011 JA80592-4 17.25 Accutest	B9-S1 8/24/2010 JA54790-14 24 Accutest	B9-PT-1 7/11/2011 JA80592-5 28.5 Accutest	B9-S2 8/24/2010 JA54790-16 36 Accutest	B9-PT-2 7/11/2011 JA80592-8 39 Accutest
VOCs (mg/kg)	CAS No.	Abbrv.	RSCO												
Acetone	67-64-1		0.05	NA	1.01 E	NA	15.9 a	NA	17.4 a	NA	19.3	NA	6.97 a	NA	0.355 E
Acrolein	107-02-8	Acrolein		0.0577	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Acrylonitrile	107-13-1	Acryl		NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Benzene	71-43-2	Benzene	0.06	ND	ND	ND	0.0027	ND	0.0023	ND	0.0046	ND	0.0025	ND	ND
Bromochloromethane	74-97-5	CBM	--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	MEK	0.12	ND	0.19	NA	3.81 a	NA	4.22 a	NA	5.24 a	NA	1.51 a	NA	0.0984
Carbon disulfide	75-15-0		--	0.0706	0.0094	NA	0.0072 J	NA	0.0054 J	NA	0.0174	0.01 JN	0.0028 J	0.012 JN	0.0033 J
Carbon tetrachloride	56-23-5	CT	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8			NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Chloroform	67-66-3	Chloroform	0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	110-82-7		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2-Dibromo-3-chloropropane	96-12-8		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Dibromochloromethane	124-48-1	DBCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	106-93-4		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	DCDFM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	1,1-DCE	0.33	0.0052 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	c-1,2-DCE	0.25	7.06 a	0.0101	0.00083 J	0.15	224	0.0022 J	183 a	0.056	0.201	0.0034 J	0.0022 J	0.0018 J
trans-1,2-Dichloroethene	156-60-5	t-1,2-DCE	0.19	0.0921	ND	ND	ND	1.57 J	ND	0.848 J	0.00092 J	0.0051 J	ND	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	c-1,3-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	t-1,3-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	123-91-1		0.1	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Ethylbenzene	100-41-4	EB	1	ND	ND	ND	ND	ND	ND	ND	0.00043 J	0.00081 J	ND	ND	ND
Freon 113	76-13-1	FC 113	--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
2-Hexanone	591-78-6	MBK	--	ND	ND	NA	ND	NA	0.0131	NA	0.0162	NA	0.0093 J	NA	ND
Isopropylbenzene	98-82-8		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Methyl Acetate	79-20-9		--	ND	ND	NA	ND	NA	0.0081 J	NA	ND	NA	0.0123	NA	ND
Methylcyclohexane	108-87-2		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Methyl Tert Butyl Ether	1634-04-4	MTBE	0.93	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	MIBK	--	ND	ND	NA	ND	NA	0.0065 J	NA	0.0058 J	NA	0.0057 J	NA	ND
Methylene chloride	75-09-2	MC	0.05	ND	ND	ND	ND	ND	ND	ND	0.0095 J	ND	0.009 J	ND	0.0047 J
Styrene	100-42-5		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	PCE	1.3	ND	ND	ND	ND	1.6 J	ND	ND	0.0022 J	0.0011 J	ND	ND	ND
Toluene	108-88-3	Toluene	0.7	ND	ND	0.00076 J	0.0033	ND	0.0017	ND	0.0055	0.0017 J	0.002	0.00046 J	ND
1,2,3-Trichlorobenzene	87-61-6		--	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2,4-Trichlorobenzene	120-82-1		--	ND	ND	NA	ND	NA	ND	NA		NA	ND	NA	ND
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	0.68	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	--	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Trichloroethene	79-01-6	TCE	0.47	0.0018 J	0.0312	ND	0.122	627 a	0.006 J	436 a	0.0383	0.0095 J	ND	ND	ND
Trichlorofluoromethane	75-69-4	TCFM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	0.02	0.749	ND	ND	0.0073 J	ND	ND	0.737 J	ND	0.0123	ND	ND	ND
Xylene (total)	1330-20-7	Xylene	1.6	0.0021 J	ND	0.0018 J	0.0013 J	ND	0.00087 J	ND	0.0051	0.0037 J	0.00069 J	ND	ND
Total Targeted VOCs				8.0285	1.2497	0.00349	20.0038	954.17	21.66617	620.585	24.70195	0.23421	8.52769	0.00286	0.4632

Notes:
ND = Not Detected
J = Estimated Concentration
JN= Presumptive Estimated Value
JBN= Presumptive Estimated Value of Compound Also Present in Blank
a = Results from Run #2
b =Estimated value due to compound diluted out in medium level run.
TIC= Tentatively Identified Compounds
RSCO = NYSDEC's Restricted Use Soil Cleanup Objective
Bold indicates concentration above RSCO

LDS00097049

Table 6
Pre and PostTreatment Soil Sample Results- VOCs
CPB Site - Edgemere, NY

			TRC Sample No.	C7-S1	C7-PT-1	C7-S2	C7-PT-2	D8-S1	D6-PT-1	D6-S2	D6-PT-2	F3-S1	F3-PT-1	F5-S1	F5-PT-1
			Date Sampled:	8/23/2010	7/8/2011	8/23/2010	7/8/2011	8/23/2010	7/7/2011	8/23/2010	7/7/2011	8/24/2010	7/7/2011	8/24/2010	7/8/2011
			Lab Sample No.:	JA54790-5	JA80448-9	JA54790-6	JA80448-12	JA54790-7	JA80448-3	JA54790-8	JA804448-6	JA54790-11	JA80448-1	JA54790-12	JA80448-7
			Depth (ft):	23	23	37	44.5	17	24.5	37	37	12	18.5	14	23
			Laboratory:	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
VOCs (mg/kg)	CAS No.	Abbrv.	RSCO												
Acetone	67-64-1		0.05	NA	1.73 a	NA	5.27 a	NA	3.93 a	NA	0.485 E	NA	33.2	NA	3.82 a
Acrolein	107-02-8	Acrolein		ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Acrylonitrile	107-13-1	Acryl		ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Benzene	71-43-2	Benzene	0.06	ND	ND	ND	0.0175	ND	0.0013 J	ND	ND	ND	0.0032	ND	0.0012
Bromochloromethane	74-97-5	CBM	--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Bromodichloromethane	75-27-4	BDCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	Bromoform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	BM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	MEK	0.12	NA	0.289 J	NA	2.39	NA	2.2 a	NA	0.098 J	NA	10.3 b	NA	1.14 a
Carbon disulfide	75-15-0		--	NA	0.0061	NA	0.0022	0.025 JN	0.0239	0.011 J	0.0024	0.011 JNB	0.0132	0.011 JN	0.0054 J
Carbon tetrachloride	56-23-5	CT	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	CB	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	CE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	110-75-8			ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Chloroform	67-66-3	Chloroform	0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	CM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	110-82-7		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2-Dibromo-3-chloropropane	96-12-8		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Dibromochloromethane	124-48-1	DBCM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	106-93-4		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2-Dichlorobenzene	95-50-1	1,2-DCB	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	1,3-DCB	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	1,4-DCB	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00027 J
Dichlorodifluoromethane	75-71-8	DCDFM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	1,1-DCA	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	1,2-DCA	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	1,1-DCE	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	c-1,2-DCE	0.25	106	ND	0.0038 J	ND	0.126	0.0016 J	0.0034 J	ND	0.0025 J	0.0084 J	0.0011	ND
trans-1,2-Dichloroethene	156-60-5	t-1,2-DCE	0.19	1.87 J	ND	ND	ND	0.0149	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	1,2-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	c-1,3-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	t-1,3-DCP	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	123-91-1		0.1	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Ethylbenzene	100-41-4	EB	1	ND	ND	0.0028	ND	0.0019 J	ND	0.0007 J	ND	0.0021	0.00085 J	0.0012 J	0.00091 J
Freon 113	76-13-1	FC 113	--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
2-Hexanone	591-78-6	MBK	--	NA	ND	NA	0.0197	NA	ND	NA	ND	NA	ND	NA	ND
Isopropylbenzene	98-82-8		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	0.00035 J
Methyl Acetate	79-20-9		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Methylcyclohexane	108-87-2		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Methyl Tert Butyl Ether	1634-04-4	MTBE	0.93	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	MIBK	--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Methylene chloride	75-09-2	MC	0.05	ND	0.001 J	ND	ND	ND	ND	ND	0.0014 J	ND	ND	ND	0.0014 J
Styrene	100-42-5		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-PCA	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	PCE	1.3	ND	0.0008 J	0.004 J	ND	0.0024 J	ND	0.0008 J	ND	0.0022 J	ND	0.0013 J	0.00071 J
Toluene	108-88-3	Toluene	0.7	ND	ND	0.0036	0.0142	0.0028	0.003	0.0018	ND	0.0038	0.0094	0.0019	0.0042
1,2,3-Trichlorobenzene	87-61-6		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,2,4-Trichlorobenzene	120-82-1		--	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
1,1,1-Trichloroethane	71-55-6	1,1,1-TCA	0.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	TCE	0.47	39.3	0.0015 J	0.0047 J	ND	0.0572	ND	0.002 J	0.0062	0.0019 J	ND	0.001 J	0.0037 J
Trichlorofluoromethane	75-69-4	TCFM	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	VC	0.02	ND	ND	ND	ND	0.0111	ND	0.0016 J	ND	ND	ND	ND	ND
Xylene (total)	1330-20-7	Xylene	1.6	ND	ND	0.0149	0.005	0.0102	0.0019	0.0034	ND	0.0114	0.0076	0.006	0.0043
Total Targeted VOCs				147.17	2.0282	0.0339	7.7186	0.2265	6.1617	0.0137	0.60	0.0239	43.54295	0.0125	4.98244

Notes:
ND = Not Detected
J = Estimated Concentration
JN= Presumptive Estimated Value
JBN= Presumptive Estimated Value of Compound Also Present in Blank
a = Results from Run #2
b =Estimated value due to compound diluted out in medium level run.
TIC= Tentatively Identified Compounds
RSCO = NYSDEC's Restricted Use Soil Cleanup Objective
Bold indicates concentration above RSCO

LDS00097050

Report of Analysis

Client Sample ID:	PZ-3		
Lab Sample ID:	JA97479-1	Date Sampled:	01/18/12
Matrix:	AQ - Ground Water	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3A102268.D	10	01/20/12	JV	n/a	n/a	V3A4391
Run #2 [a]	3A102271A.D	50	01/20/12	JV	n/a	n/a	V3A4391

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2850 [b]	500	380	ug/l	
71-43-2	Benzene	16.2	10	2.2	ug/l	
74-97-5	Bromochloromethane	ND	50	4.0	ug/l	
75-27-4	Bromodichloromethane	ND	10	2.3	ug/l	
75-25-2	Bromoform	ND	40	2.4	ug/l	
74-83-9	Bromomethane	ND	20	3.1	ug/l	
78-93-3	2-Butanone (MEK)	1090	100	29	ug/l	
75-15-0	Carbon disulfide	ND	20	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	10	1.9	ug/l	
108-90-7	Chlorobenzene	ND	10	2.2	ug/l	
75-00-3	Chloroethane	ND	10	3.7	ug/l	
67-66-3	Chloroform	ND	10	2.1	ug/l	
74-87-3	Chloromethane	ND	10	2.2	ug/l	
110-82-7	Cyclohexane	ND	50	2.9	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	13	ug/l	
124-48-1	Dibromochloromethane	ND	10	2.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	20	2.1	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	1.8	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	2.9	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	2.6	ug/l	
75-71-8	Dichlorodifluoromethane	ND	50	3.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	1.9	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	1.8	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	2.8	ug/l	
156-59-2	cis-1,2-Dichloroethene	585	10	2.2	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	3.1	ug/l	
78-87-5	1,2-Dichloropropane	ND	10	2.2	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	2.2	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	1.9	ug/l	
123-91-1	1,4-Dioxane	ND	1300	720	ug/l	
100-41-4	Ethylbenzene	ND	10	2.1	ug/l	
76-13-1	Freon 113	ND	50	4.9	ug/l	

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PZ-3		
Lab Sample ID:	JA97479-1	Date Sampled:	01/18/12
Matrix:	AQ - Ground Water	Date Received:	01/19/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	CPB, Far Rockaway Boulevard, Edgemere, NY		

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	MDL	Units	Q
591-78-6	2-Hexanone	ND	50	30	ug/l	
98-82-8	Isopropylbenzene	ND	20	1.9	ug/l	
79-20-9	Methyl Acetate	ND	50	29	ug/l	
108-87-2	Methylcyclohexane	ND	50	1.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	1.8	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	50	12	ug/l	
75-09-2	Methylene chloride	ND	20	2.0	ug/l	
100-42-5	Styrene	ND	50	2.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	2.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	3.2	ug/l	
108-88-3	Toluene	20.3	10	1.5	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	6.9	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	1.5	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	2.4	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	2.3	ug/l	
79-01-6	Trichloroethene	228	10	2.1	ug/l	
75-69-4	Trichlorofluoromethane	ND	50	3.5	ug/l	
75-01-4	Vinyl chloride	4.8	10	2.7	ug/l	J
	m,p-Xylene	ND	10	3.2	ug/l	
95-47-6	o-Xylene	ND	10	1.7	ug/l	
1330-20-7	Xylene (total)	ND	10	1.7	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%	94%	77-120%
17060-07-0	1,2-Dichloroethane-D4	91%	90%	70-127%
2037-26-5	Toluene-D8	96%	97%	79-120%
460-00-4	4-Bromofluorobenzene	91%	93%	76-118%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74-93-1	Methanethiol	5.66	600	ug/l	JN
75-18-3	Dimethyl sulfide	7.84	310	ug/l	JN
624-92-0	Disulfide, dimethyl	13.41	91	ug/l	JN
	Thiophene, methyl-	13.78	68	ug/l	J
	Total TIC, Volatile		1069	ug/l	J

(a) (pH=4)Sample pH did not satisfy field preservation criteria.
(b) Result is from Run# 2

ND = Not detected   MDL - Method Detection Limit   J = Indicates an estimated value
RL = Reporting Limit   B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range   N = Indicates presumptive evidence of a compound

APPENDIX B

PROJECT PERSONNEL RESUMES

Stephanie O. Davis, PG, CPG

FPM group

Engineering and Environmental Science

Ms. Davis has diversified experience in geology and hydrogeology. Her professional technical experience includes groundwater, soil, and soil vapor investigations, design and management of soil remediation projects, design and installation of groundwater containment and remediation systems, design and evaluation of soil vapor mitigation systems, groundwater flow modeling, aquifer testing and interpretation, evaluation of site compliance with environmental regulations, environmental permitting, and personnel training. Ms. Davis presently manages several large-scale investigation and remedial programs, including program scopes, budgets, staffing, and schedules.

Functional Role	Title	Years of Experience
Senior Hydrogeologist	**Department Manager - Hydrogeology**	**28**

Personal Data

Education

M.S./1984/Geology/University of Southern California
B.S./1981/Geology/Bucknell University

Registration and Certifications

Certified Professional Geologist #9487, (AIPG) 1995
California Registered Geologist #5192, 1991
Pennsylvania Registered Geologist #PG-000529-G, 1994
OSHA – Approved 40 hour Health and Safety Training Course (1990)
OSHA - Approved 8 hour Health and Safety Training Refresher Courses (1991-Present)
OSHA-Approved 8-hour Site Safety Supervisor Training Course (2008)
National Ground Water Association
Long Island Association of Professional Geologists

Employment History

1993-Present	FPM Group
1992-1993	Chevron Research and Technology Co.
1990-1992	Chevron Manufacturing Co.
1984-1990	Chevron Exploration, Land, and Production Company

Continuing Education

- Treatment of Contaminated Soil and Rock
- Groundwater Pollution and Hydrology
- Environmental Law and Regulation
- Remedial Engineering
- Soil and Foundation Engineering
- Environmental Geochemistry

Detailed Experience

Site Investigations

- Provides oversight and coordination for ongoing investigation and remedial projects at several New York State Inactive Hazardous Waste Disposal Sites, Voluntary Cleanup Program Sites, and Brownfield Cleanup Program Sites. Investigations have included site characterization, Remedial Investigation/ Feasibility studies, and RCRA Facility Investigations. Remedial Services have included contaminated soil removals; ORC and ARC injections; design, installation and operation of all sparge/soil vapor extraction systems; sub-slab depress investigation, capping, and other remedial services.
- Provides program coordination and oversight for all Phase I ESA, Phase II investigations, and remediation projects for a major commercial developer on Long Island, New York. Projects have included environmental services associated for the purchase and redevelopment of office buildings, aerospace facilities, former research and development facilities, and large manufacturing plants. Remedial Services have provided RCRA closures, UIC closures, tank removals, and Brownfield Cleanup Program projects.
- Planned and managed a Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI) at Barksdale AFB, Louisiana for AFCEE. Responsible for all aspects of field program planning, solicitation and selection of subcontractors, mobilization and establishment of a field office, supervising multiple field crews, installation and sampling of monitoring wells, collection and soil samples, data tracking and management and preparation of an RFI report. The scope of work included characterization of the nature and extent of groundwater and soil contamination at thirteen Solid Waste Management Units (SWMUs), performing a base-wide evaluation of background contaminant concentrations, and developing a long-term groundwater monitoring program for the base.
- Managed field sampling crews for major underground storage tank (UST) investigation at Plattsburgh AFB, NY, for AFCEE. Responsible for field crew training, coordination of sampling crews at separate sites, sample labeling, handling, tracking, and shipping, field data management and remote field office management. The scope of work included collection of over 450 groundwater samples to characterize groundwater conditions in the vicinity of 150 USTs using a Geoprobe sampling rig, wellpoints, and rapid turnaround-time analysis.

- Managed site investigation activities, including soil vapor sampling, soil sampling and analysis, groundwater sampling and analysis, and geotechnical evaluation for numerous sites in Suffolk County, New York. The resulting data were utilized by a major supermarket company in the negotiations for the purchase of the properties and in the property remediation prior to development.
- Performed site investigation activities including soil vapor analysis, soil sample analysis, and groundwater sampling and analysis at an active commercial bus terminal in the Bronx, NY. Made recommendations for site remediation including UST removal, soil excavation and disposal, and free-phase product extraction.
- Prepared various work plans and reports, including a RCRA Facilities Investigation Work plan, incorporating existing geologic, chemical and historical data, evaluating newly-acquired site data, and developing recommendations for further investigation and remedial action at a City of Richmond former municipal landfill.
- Managed on-site and off-site soil and ground-water sampling program at a manufacturing facility in Bay Shore, NY. Compiled resulting data and prepared a comprehensive report of the investigation results for the Suffolk County Department of Health Services (SCDHS) and NYS Department of Environmental Conservation (NYSDEC). Proposed remediation technologies for on-site soil contamination and on-site and off-site groundwater contamination.
- Managed and conducted a soil and groundwater sampling program adjacent to Newark Airport Runway 29 for the Federal Aviation Administration. Analyzed resulting chemical analytical data and presented results to client.
- Supervised and conducted drilling, soil sampling, cone penetrometer testing, and well installation at a refinery process water effluent treatment system and former municipal landfill.
- Supervised drilling, installation, development, and sampling of monitoring wells at numerous sites in the greater New York metropolitan area. Utilized resulting stratigraphic, hydrologic, and chemical analytical data to evaluate site conditions.
- Program Manager for all investigation and remedial activities for a major automobile retailer with multiple facilities in the New York City metropolitan area. Sites included tanks, petroleum spills, underground injection control (UIC) systems, soil vapor intrusion issues, and hazardous waste management. Responsible for work scope and budget preparation, staffing and oversight, client and regulatory agency interactions, addressing insurance issues, reporting and certification, and project closeouts.

Remediation

- Project Manager for all investigation and remedial activities at a NYSDEC Brownfield Cleanup Program site in New York City. Prepared the Remedial Investigation and Remedial Work Plan; coordinated with the owner, other contractors, and the NYSDEC; prepared for and conducted citizen participation activities; supervised all waste characterization, profile preparation, and waste management; developed the Final Engineering Report (FER) and Site Management Plan (SMP) for NYSDEC approval; and ensured that all remedial requirements were met such that the Certificate of Completion (COC) was issued. Continuing activities include coordination of the ongoing site management activities, communications with the NYSDEC and NYSDOH, and preparation of the annual Certification Report.
- Program Manager for closure of a Major Oil Storage Facility (MOSF) at a New York waterfront location. Responsibilities included coordination of the work scope with the NYSDEC and NCDOH, development of work plans for tanks, UIC, and petroleum spill closure, budget and schedule development, staffing and oversight reporting and certification, and closeout of all environmental issues such that residential redevelopment could proceed.
- Developed pilot test plans, evaluated pilot test results, and prepared conceptual designs for several air sparge/soil vapor extraction (AS/SVE) systems to treat petroleum and/or chlorinated solvent VOCs. These systems were subsequently installed and Ms. Davis provides ongoing review of system operations and remedial monitoring results.
- In responsible charge of several task orders for waste characterization of a 90,000-cy construction soil stockpile at a municipal sewer facility. Responsibilities included development and implementation of Sampling and Analysis Plans (SAP), coordination of staffing, review of lab data, preparation of Field Sampling Summary Reports (FSSR), coordination with disposal facilities, and preparation of waste profiles.
- Program Manager for a NYS Inactive Hazardous Waste Disposal (Superfund) site undergoing redevelopment. Responsibilities included developing and implementing pre-demolition investigations, developing and implementing remedial actions (source removal) in conjunction with retail redevelopment, conceptual design and installation of sub-slab depressurization systems

(SSDSs), and maintaining ongoing OM&M programs. Tasks also included scope, budget, schedule and staffing management.

- Designed soil remediation plan and managed contractor support for a metal parts plating and manufacturing facility in Suffolk County, New York. Soil remediation was overseen and approved.
- Designed and performed indoor underground storage tank abandonment program, leaching pool remediation plan, and managed contractor support for a tape measure manufacturing facility in Suffolk County, New York. SCDHS provided oversight and approval.
- Participated in the design process for a groundwater containment and remediation system for a former municipal landfill, including subsurface groundwater barrier walls and extraction wells.
- Designed soil remediation plan and supervised contractor performance of soil remediation activities at an active construction site in Carle Place, NY. Project involved excavation and disposal of approximately 5,000 tons of PCB-, metal-, and petroleum-contaminated soil. NYSDEC provided oversight and approval of the completed remediation.
- Coordinated technical aspects of subsurface groundwater barrier wall construction, including routing, permitting, design, material selection, and field activities.

Hydrogeologic Evaluations

- Prepared Engineer's Report for Long Island Well Permit for a 230-gpm irrigation supply well. Responsible for evaluation of well interference, salt water upcoming, impacts from contaminants, and other factors affecting the proposed well.
- Performed well design (gravel pack size, screen size, etc.) for numerous groundwater wells on Long Island. Familiar with sieve analyses, well construction and development methods.
- Utilized Visual Modflow groundwater modeling program to evaluate the impact of a contaminant plume on a proposed SCWA wellfield. Model development included evaluation of recharge, aquifer properties, subsurface stratigraphy, boundary conditions, plume source and concentration, and various wellfield locations and pumping rates.
- Participated in a multi-day, multi-well aquifer pumping test for New York City Transit (NYCT) Lennox Avenue site. Responsible for operating and maintaining data logging equipment, coordinating manual water level measurements, and analyzing resulting drawdown data.
- Evaluated subsurface geologic conditions for NYCT Avenue T site utilizing existing boring logs, topographic, and historic map data.
- Supervised drilling, installation and development of groundwater extraction, injection, and monitoring wells at a USEPA Superfund site in Deer Park, New York. Interpreted aquifer and well performance from development data and made recommendations for modification of drilling and development procedures.
- Performed slug tests on monitoring wells at a New York City Transit Authority site, and evaluated hydrologic properties using the HYDROLOGIC ISOAQX computer program.
- Performed aquifer pumping and slug tests and evaluated hydrologic properties using the computer program AQTESOLV.
- Performed water level and water quality monitoring at an industrial site in Mattituck, NY. Constructed groundwater elevation contour maps and utilized chemical analytical data to predict contaminant plume migration.

Landfills

- Program Manager for a USEPA-required greenhouse gas (GHG) monitoring and reporting program for a Town of Islip municipal landfill. Responsibilities included scope and budget management, staffing, client and USEPA coordination, reporting review, and troubleshooting.
- Prepared work plans for Closure Investigations of two Town of East Hampton landfills. Each work plan included a Hydrogeologic investigation, methane investigation, surface leachate investigation, and vector investigation. Prepared final Closure Investigation Reports, which were accepted by the NYSDEC.
- Supervised the installation of groundwater and methane monitoring wells to complete the monitoring networks at the Town of East Hampton landfills. Services provided included hollow-stern auger and mud-rotary well installations, split-spoon soil sampling and boring log preparation, oversight and interpretation of wireline electric logging, and completion of initial baseline monitoring events.
- Supervises ongoing groundwater and methane monitoring programs for Town of East Hampton landfills. Responsibilities include field team coordination, communications with the Town, report scheduling, data review, and report review prior to distribution to the client and NYSDEC.
- Performed groundwater sampling at a radio tower facility constructed on a landfill in NJ. Analyzed results and made recommendations to client.

- Conducted methane monitoring at Springs-Fireplace Road and Montauk Landfills for the Town of East Hampton.
- Used the PC-based modeling program FLOW PATH to predict groundwater flow directions and evaluate extraction well locations and pumping rates for a groundwater containment and remediation system at a former municipal landfill.
- Negotiated successfully with NYSDEC for reduced monitoring frequencies at Town of East Hampton based on historic monitoring results. Maintained quarterly monitoring frequency only for specific containments at key locations.
- Manages monthly methane monitoring for all Town of Islip landfills. Monitoring program includes onsite and offsite methane wells, methane collection systems, and flare systems. Data is recorded electronically and downloaded to computer for formatting prior to delivery to Town. Data is reported in final form within two days of collection.
- Supervised and reviewed production of quarterly and annual monitoring reports for all monitoring programs at Town of Smithtown landfill. Project included tabulation and reporting of groundwater and methane monitoring data, solid waste and recycling collection data, yard waste composting operations, and landfill leachate collection and disposal data. Multiple copies of each report were prepared for Town delivery to the NYSDEC.
- Program Manager for landfill remediation for the Town of Huntington under the NYS Environmental Restoration Program. Responsibilities included work scope development, schedule and budget management, staffing, client and regulatory agency coordination and reporting, and report review and certification.

Environmental Data Analysis

- Received multiple sessions of environmental geochemistry training provided by environmental geochemists, including physical chemistry, thermodynamics, ionic interactions, complexation, biologic effects, and other basic principles. Training also included field sampling procedures and effects on chemical data, chemical analytical methods and equipment, and QA/QC procedures and interpretation.
- Reviewed and evaluated numerous soil, groundwater, product, indoor/ambient air and soil vapor chemical analytical datasets, including evaluation of batch and site-specific QA/QC samples, laboratory narratives, comparison to regulatory agency criteria, historic data, and background data.
- Developed and implemented numerous Quality Assurance Project Plans (QAPP), including QAPP design, sample delivery group (SDG) evaluations, sampling procedures and sequences, and QA/QC sample preparation/collection.
- Attended periodic environmental chemistry training sessions hosted by environmental laboratories and participated in hands-on training in data and QA/QC evaluation.
- Prepared Data Usability Summary Reports (DUSRs) for numerous chemical analytical datasets for projects overseen by the USEPA, NYSDEC and other regulatory agencies. Datasets evaluated have included soil, groundwater, soil vapor, indoor air, and ambient air.
- Coordinated development of NYSDEC Electronic Data Deliverables (EDD) protocols and procedures for all FPM NYSDEC sites. Responsibilities included staff training, data package QA/QC, client interactions, budget and schedule impact assessments, and dissemination of EDD training information.
- Performed forensic assessments of historic environmental chemical analytical data to resolve apparent discrepancies with modern data and other dataset inconsistencies.
- Assessed various leachate test protocols and results to determine the most applicable methods to evaluate and develop soil cleanup objectives for non-regulated compounds.
- Interpreted numerous organic parameter datasets to evaluate breakdown sequences, likely original parameters, and rates of degradation.
- Formulated numerous chemical treatment plans for insitu remediation of environment contaminants, including assessment of contaminant concentrations and distribution, chemical processes and indicators, natural attenuation indicators, additional stociometric demands, and hydrogeologic factors.

Community Impacts

- Developed Community Monitoring Plans (CMP) for several hazardous waste sites. These plans included monitoring procedures, action levels, and mitigation measures for odors, traffic, noise, dust and/or vapors with the potential to affect surrounding communities during investigation and/or remediation. Each CMP was reviewed and approved by the NYSDEC and NYSDOH and was implemented under the oversight of these agencies.

- Developed and implemented an odor abatement plan for highly-odorous soil discovered during a remediation project in New York City. The remediation site was surrounded by three public schools and complaints of nuisance odors were received following discovery of the odorous soil, resulting in a job shutdown until the nuisance was abated. The odor abatement plan was prepared and implemented within 24 hours and involved immediate covering of the odorous soil followed by spot excavation and removal during non-school hours (night work) and the use of odor-controlling foam. The removal was completed within one week without further incident and the NYSDEC and NYSDOH approved the completed work, allowing the job to recommence.
- Attended and presented at numerous community meetings for various environmental sites to explain the purpose of CMPs, the types of observations and their interpretation, and mitigation measures. Addressed community and agency questions and issues.
- Evaluated and implemented abatement for vectors (rodents, flies, and seagulls) at several Long Island landfills in association with landfill closure. These activities included inspection and reporting of vector populations, development of vector abatement plans, and assisting Town personnel with vector abatement.
- Conducted inspections of intense fly infestations at a Town transfer station building. The inspections were used to identify the locations and migration pathways of flies inside the building and to develop an abatement plan. This plan was successfully implemented by Town personnel to abate the nuisance fly infestations.
- Developed and implemented air and soil vapor investigations of residential and commercial properties to evaluate potential air quality impacts. These investigations were conducted using plans approved by the NYSDEC and NYSDOH. The resulting data were used to evaluate whether air quality impacts were present and whether mitigation or monitoring were necessary. These evaluations were submitted for NYSDEC and NYSDOH review and approval, together with appropriate monitoring/mitigation designs.
- Conducted odor, dust, noise and organic vapor monitoring at several community areas surrounding environmental sites. Data were collected and interpreted in accordance with NYSDEC and/or NYSDOH guidance and the results were submitted to these agencies together with recommendations for mitigation, if appropriate.

Expert Witness/Technical Services

- Provided expert witness and technical services regarding environmental conditions and remedial procedures for a proposed residential redevelopment of a former oil terminal. Services included preparing and obtaining NYSDEC and NCDOH approval of remedial work plans for three environmental areas of concern, preparing remedial cost estimates and schedules, and providing testimony at a public hearing before the North Hempstead Town Board from which a change of zone was requested. The proposed change of zone, although subject to considerable public opposition, was approved, allowing redevelopment and associated remediation of the property to move forward.
- Provided expert witness and technical services to the legal team defending a petroleum company against NYSDEC cost recovery claims at a petroleum spill site. The spill site was complex, involving two very large petroleum releases at gasoline stations adjoining the defendant's property. Services provided included evaluating petroleum tank tests, groundwater, soil and soil vapor chemical analytical data, petroleum fingerprint data, remediation activities and costs. Products prepared include numerous detailed timelines of various activities, large displays showing site information and subsurface conditions, and cost allocation calculations. A detailed subsurface investigation was also performed to evaluate stratigraphic conditions.
- Assisted the Village of Larchmont legal team in successfully opposing the construction of an IKEA superstore in the adjoining community of New Rochelle. Work performed included evaluating the previous environmental investigations of the proposed store site, developing cost estimates and scopes of work for a full environmental evaluation of the site, preparing scoping cost estimates for likely remediation scenarios, preparing technical documents in support of the Village of Larchmont's position and making a presentation at a large public hearing for the project. The proposed project was subsequently withdrawn.
- Provided technical evaluation of a proposed water district in the Town of Carmel in support of legal efforts to oppose the district. The proposed water district was opposed by existing residents due to limited available water supplies and likely impact on their existing wells. The scope of work included evaluation of aquifer pumping tests, determining impacts on nearby wells, assessment of likely increased water demand, preparation of several supporting documents, and presentations (including

providing testimony to a judge) at project hearings. The proposed project was subsequently conditionally approved by the NYSDEC with significant modifications to protect the water rights of existing residents.

- Prepared several affidavits regarding environmental conditions at client properties in support of pending legal actions. Issues evaluated included landfill issues, wetlands and navigatable waterway issues, and petroleum spill issues.
- Provided technical support to the Croton Watershed Clean Water Coalition (CWCWC) in assessing the impacts of several proposed road construction projects on the Kensico Reservoir and other nearby water bodies of the New York City water supply system. This work included evaluating stormwater pollutant loading calculations, assessing impacts to wetlands, promoting application of more accurate stormwater runoff calculation methods, assessing proposed stormwater management techniques, attending and making presentations at public meetings, preparing technical statements for submittal to regulatory agencies, and participating in the NYSDOT Plan SWPPP Guidance committee.
- Provided technical support to a property owner subject to a USEPA investigation as the potential source of a large chlorinated solvent plume. Project responsibilities included evaluation of a plume-wide RI/FS, detailed review of property historic information, multiple meetings with the USEPA, client and counsel, and identification of additional potential source areas.

Health and Safety

- Performed health and safety monitoring at investigation and remediation sites during intrusive activities. Monitoring included calibration and operation of photoionization detector (PID) and flame-ionization detector (FID) for organic vapors and combustible gas indicator (CGI) for methane. Compared results to applicable action levels and took preventative/protective measures as necessary.
- Performed community monitoring, including monitoring for noise, particulates (dust), and organic vapors. Recorded observations and compared to applicable action levels. Familiar with calibration and operation of noise meters, particulate monitors, and PID/FID.
- Performed screening for radiation at select sites. Familiar with operation of Geiger counter in different radiation modes and with background readings.

Miscellaneous Projects

- Performed numerous Phase I Site Assessments for residential and industrial sites on Long Island, New York.
- Conducted aquifer pumping and soil vapor extraction test training. Instructed classes for site investigation methods, aquifer pumping test analysis, and risk assessment.
- Performed various project management functions, including development and management of project budgets and schedules, coordination of field and office staffing, document preparation, review, editing, and interaction with clients, regulatory, legal, real estate, consultant, and compliance personnel.
- Organized, supervised, and conducted remote field mapping studies in Alaska.
- Directed well site geophysical logging operations and interpreted geophysical well logs.
- Conducted methane monitoring at Springs-Fireplace Road and Montauk Landfills for the Town of East Hampton.
- Processed and interpreted seismic reflection data and constructed seismic velocity models.
- Evaluated site compliance with environmental regulations. Assisted and reviewed regulator's revision of proposed risk assessment-based UST cleanup guidelines. Reviewed proposed USEPA NPDES permits for remediation system effluent.
- Constructed and interpreted structural and stratigraphic cross sections, and structure contour, fault surface, isochore, and isopach maps.

Regulatory Compliance

- Has conducted numerous site audits for regulatory compliance, particularly with respect to Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Responsibility and Liability Act (CERCLA), the Clean Water Act (CWA) and Clean Air Act (CAA).
- RCRA compliance audits conducted have included inspections and reporting regarding underground and aboveground storage tanks (USTs and ASTs), hazardous waste storage facilities, waste management and reporting requirements, and hazardous waste storage area closures in compliance with RCRA.
- Oversees and coordinates environmental site assessments (ESAs) for compliance with CERCLA requirements. These ESAs are conducted at a wide variety of facilities including operating and historic industrial sites manufacturing plants, abandoned facilities, and multi-property Brownfield redevelopment sites.

- Has managed multiple investigation and remedial projects at state and federal Superfund sites. Is very familiar with all phases of CERCLA projects including PA/SI, RI, FS, RD and RA. Has overseen activities at many Superfund sites for investigation through closure.
- CWA projects have included investigation and remediation of Class V Underground injection control (UIC) Systems, investigation and acquisition of discharging permits, discharges into surface water bodies.
- Project conducted for CAA compliance have included facility investigations for emissions sources, including paint booths, fume hoods, process discharges and other point sources. Has sampled and evaluated remediation system discharges for CAA compliance, recommended emissions treatment when required.

Ben T. Cancemi, CPG

FPM group

Engineering and Environmental Science

Mr. Cancemi has diversified experience in geology and hydrogeology. His professional experience includes groundwater and soil investigations, design and management of soil remediation projects, installation and maintenance of groundwater containment and remediation systems, aquifer testing and interpretation, geotechnical studies, evaluation of site compliance with environmental regulations and environmental permitting.

Functional Role	Title	Years of Experience
Hydrogeologist	Senior Hydrogeologist	16

Personal Data

Education
M.S./2001/Hydrogeology/SUNY Stony Brook
B.S./1995/Geology/SUNY Stony Brook

Registration and Certifications
Certified Professional Geologist – American Institute of Professional Geologists
OSHA 40-hour HAZWOPER and Current 8-hour Health and Safety Training and Current Annual Physical
OSHA 8-hour HAZWOPER Supervisor
OSHA 10-hour Construction Safety and Health
OSHA Permit-Required Confined Space Training
Long Island Geologists
National Groundwater Association
MTA NYC Transit Track Safety Certification

Employment History

2001-Present	FPM Group
1998-2001	Burns & McDonnell Engineering Company
1997-1998	Groundwater and Environmental Services
1996-1997	Advanced Cleanup Technologies

Detailed Experience

Hydrogeologic Evaluations

- Performed constant head hydraulic conductivity (packer) testing in boreholes located in fractured bedrock in lower Manhattan, NY. The testing was conducted to evaluate fracture connectivity with the nearby Hudson and East River and determine parameters such as hydraulic conductivity such that procedures could be implemented for proposed redevelopment of the New South Ferry Subway Station.

- Performed slug tests on monitoring wells at a service station in Nyack, New York to determine aquifer properties such that a dewatering system could be designed to facilitate the removal and installation of a UST system.

- Coordinated and performed a geotechnical investigation which included utility clearing, soil boring installation, rock coring, packer testing, pump testing, and data collection and interpretation. The investigation was performed to evaluate subsurface conditions and determine geologic parameters for a proposed subway extension of the NYC Transit No.7 Line.

- Performed aquifer pumping and slug tests and evaluated hydrologic properties using the computer program AQTESOLV.

Site Investigations/Groundwater Monitoring

- Coordinated and performed soil and groundwater sampling and soil vapor studies at several aerospace manufacturing facilities situated across Long Island, NY to evaluate how the facilities' past usage had effected the environmental quality of the property. Assessments at each facility included an evaluation of how past manufacturing and facility operations relating to the storage and use of materials including solvents, petroleum and manufacturing derived wastes had impacted the underlying soils and groundwater of the site and surrounding properties. Following completion of each investigation areas of concern were identified for further evaluation and/or corrective action.

- Coordinated and perform long term groundwater monitoring at two closed municipal landfills situated in the Town of East Hampton, NY. The monitoring program consists of sampling a multi-depth monitoring well network, analysis and interpretation of analytical and hydrogeologic data and regulatory reporting in accordance with NYSDEC Part 360 requirements.

- Coordinated and performed soil and groundwater investigations at various properties utilized for agriculture and horticulture to evaluate the impact of past herbicide and pesticide usage on the underlying soil and groundwater.

- Coordinated and perform onsite and offsite monitoring at various petroleum release sites on Long Island, the New York Metropolitan area and in Westchester County in accordance with NYSDEC IHWDS, VCP, Brownfield and Spill program requirements. The monitoring program generally consists of sampling multi-depth monitoring well network utilizing low flow sampling techniques, analysis and interpretation of analytical and hydrogeologic data and regulatory reporting.
- Coordinated a soil and groundwater sampling program to evaluate environmental conditions at Terminal A, Logan International Airport, East Boston, Massachusetts. The program included an assessment of the current fuel hydrant system and other locations of potential environmental concern using non-destructive air vacuum extraction-clearing techniques combined with direct push sampling.
- Managed and performed a soil and groundwater investigation, soil excavation and groundwater monitoring at a pyrotechnics manufacturing facility in Suffolk County, NY. The work was performed under the direction of the Suffolk County Department of Health Services to investigate and remediate contamination associated with the historic use of perchlorate containing materials at the facility.
- Coordinated and performed soil and groundwater investigations at several automobile dealerships situated in Westchester County, NY to evaluate how past and present operations associated with petroleum and chemical solvent storage and usage and onsite waste water disposal systems have effected the environmental quality of the property.
- Performed soil remediation by soil excavation at Terminal B, Logan International Airport, East Boston, Massachusetts. Soil excavation was coupled with onsite TPH analysis and confirmatory end point sampling to determine extent of remediation and potential reuse of impacted soils.
- Managed several remediation projects for various aviation clients at JFK and LaGuardia Airports. Duties included groundwater monitoring, reporting, environmental compliance, emergency response and remedial system operation and maintenance.
- Participated in a soil and groundwater investigation/ remediation project at a former petroleum terminal near Atlantic City, New Jersey. Project duties included soil and groundwater sampling and delineation. Following the initial investigation a remedial action plan was prepared and remedial measures implemented. Remedial measures included soil excavation, free product recovery and risk assessment.
- Supervised and conducted soil remediation by field screening and confirmatory endpoint sampling at a former service station, Bronx, New York. Soil removal consisted of the removal of approximately 2,000 cubic yards of petroleum-impacted soil.
- Supervised and coordinated an investigation into a fuel hydrant system failure resulting in the release of an estimated 5,000 gallons of type A jet fuel. Duties included emergency response coordination, a soil and ground-water assessment utilizing direct push technology, monitoring well installation, groundwater monitoring and product recovery using high vacuum extraction techniques.

Phase I Environmental Site Assessments

- Performed numerous Phase I Environmental Site Assessments (ESAs) for various commercial and industrial properties throughout the Northeastern United States for various clients including trucking companies, major airlines, telecommunication companies, chemical/petroleum storage facilities, aerospace manufacturing facilities, machine shops, retail shopping centers, auto dealerships, service stations,

Remediation

- Participated in a NY State Brownfield redevelopment project located in East Harlem, NY. Responsibilities included daily air and noise monitoring to ensure the surrounding community was not affected by site activities, coordinated, oversaw and documented the removal of over 80,000 tons of material to seven separate disposal facilities, performed a soil vapor survey and collected confirmatory end point samples to document completion of remedial excavation with site specific cleanup objectives.

- Have performed pilot testing, design, installation and procurement of numerous multi-depth soil vapor and air sparge remediation systems situated on Long Island and in the NYC metropolitan area to remediate subsurface soils and groundwater impacted with chlorinated and non-chlorinated volatile organic compounds. Other duties have included remediation system operation and maintenance, and evaluations of system performance.

- Have performed numerous storm water and sanitary leaching structures cleanouts utilizing excavation and/or vacuum assisted equipment to remove contaminated sediments and liquids. Other duties have also included waste characterization and profiling, pipe camera surveys and structure locating utilizing water soluble dyes and electronic locating equipment.

- Participated in the delineation and removal of petroleum-impacted soils associated with a former jet fuel hydrant system at San Francisco International Airport. Project duties included directing soil removal activities, manifesting, confirmatory endpoint sampling, and restoration activities oversight.

- Participated in the design and installation of soil vapor extraction system for a former service station in Elwood, New York. Project duties included equipment procurement and installation, monitoring well installation and remedial system operation and maintenance.

- Operated and maintained various remediation systems including; soil vapor extraction, groundwater pump and treat, air sparge, dual-phase extraction, and free-phase petroleum recovery systems.

Health and Safety

- Performed health and safety monitoring at investigation and remediation sites during intrusive activities. Monitoring included calibration and operation of photoionization detector (PID) and flame-ionization detector (FID) for organic vapors and combustible gas indicator (CGI) for methane. Compared results to applicable action levels and took preventative/protective measures as necessary.

- Performed community monitoring, including monitoring for noise, particulates (dust), and organic vapors. Recorded observations and compared to applicable action levels. Familiar with calibration and operation of noise meters, particulate monitors, and PID/FID.

- Prepared community air monitoring and health and safety plans for several NYSDEC inactive hazardous waste, brownfield cleanup program volunteer cleanup program sites and petroleum sites and NYC e-designation program sites.

- Performed screening for radiation at select sites. Familiar with operation of Geiger counter in different radiation modes and with background readings.

Other

- Coordinated RCRA closure activities and performed confirmatory sampling at a former package manufacturing facility in Garden City, NY. Project duties included contractor procurement, rinsate and soil sampling and regulatory agency reporting and coordination.

- Prepared a remedial design plan for a former VA hospital landfill on Long Island. The remedial design included a summary of past investigations, a materials management plan for the excavation and disposal of contaminated soils and debris, a post-excavation sampling plan, a site restoration plan, community air monitoring plan, heal and safety plan and a quality assurance and quality control plan.

- Performed compliance inspections to assess issues of potential environmental concerns at various manufacturing, aviation, trucking, retail and not-for-profit facilities.

- Managed and performed monthly soil gas sampling and quarterly indoor air quality sampling at an elementary school in southwestern Nassau County, NY. The monitoring and related reporting was performed to ensure that an underlying gasoline groundwater plume migrating through the school property was not impacting the school occupants.

- Managed and perform routine methane monitoring at two eastern Long Island landfills to evaluate potential offsite migration to the surrounding community. Indoor air is also monitored with a flame ionization detector to ensure that methane does not pose a concern to landfill operation buildings.

- Participated in a geotechnical evaluation at a new cargo hanger, JFK international Airport. The evaluation consisted of timber and steel monotube pile installation oversight, vertical load testing, and compilation and analysis of data.
- Managed and participated in the coordination of the demolition of two bulk petroleum storage facilities and the removal of various USTs at amajor airline aviation fuel terminal at Logan International Airport, East Boston, Massachusetts. Project duties included regulatory agency coordination and reporting, contractor coordination and oversight, waste management, and health and safety.
- Managed and coordinated the removal of two 6,000-gallon diesel USTs at a trucking terminal in New Cumberland, Pennsylvania. Project duties included contractor coordination, health and safety, field oversight, post excavation sampling and regulatory agency reporting.
- Managed and conducted a UST system upgrade in Enfield, Connecticut. UST system upgrades included the removal of four 15,000-gallon steel storage tanks, conducting end-point sampling and overseeing the installation of two 20,000-gallon double-wall fiberglass reinforced plastic storage tanks.
- Managed and coordinated a petroleum spill investigation to identify and investigate the extent of a fuel oil release at an office building in White Plains, NY. The investigation included excavation and removal of a 5,000-gallon situated over 20 feet below grade, tightness testing of the UST and associated piping, a soil and groundwater investigation, free product recovery utilizing vacuum enhanced fluid recovery techniques and NYSDEC and Westchester County Department of Health regulatory coordination and reporting.

Richard J. Baldwin, C.P.G., P.G.

Apex Companies, LLC, Project Director

Mr. Baldwin is a hydrogeologist with more than twenty five years of experience in the fields of environmental consulting, hydrogeology and geology with particular experience in conducting and supervising environmental investigations and remedial actions at industrial, private, Federal and publicly-owned facilities and sites. Additionally, Mr. Baldwin has experience in evaluating potential environmental impacts of projects including golf courses, housing developments, senior housing, schools and retail shopping centers. For the last several years, Mr. Baldwin's work has focused primarily on sites and facilities located in the Long Island, New York City and Upstate New York areas. He has extensive knowledge and experience pertaining to Long Island's federally-designated sole-source drinking water aquifer system. Mr. Baldwin has extensive experience in evaluating complex laboratory data packages to ensure that they are precise, accurate, repeatable and comparable.

Education

- *Graduate Course Work, San Jose State University, 1985-1988*
- *BA Geology, San Francisco State University, 1982*

Professional Registrations

- *Professional Geologist, PG-000552-G, Commonwealth of Pennsylvania*
- *Certified Professional Geologist, CPG #9158, Amer.Inst. of Prof. Geologists*
- *OSHA Certification, 40-hour Health and Safety Training at Hazardous Waste Sites*
- *OSHA Certification, 8-hou Refresher Health and Safety Training at Hazardous Waste Sites*
- *OSHA Certification, 8-hour Management Training*
- *OSHA Certification, 8-hour Radiation Safety Training*

Continuing Education

- *Princeton Groundwater Hydrogeology and Pollution course*
- *Environmental Law and Regulations Course, U.C. Berkeley Extension*
- *NGWA MODFLOW and MODPATH Modeling Course*
- *NGWA Visual MODFLOW Modeling Course*

Typical Project Experience

Mr. Baldwin has extensive experience in the selection, design, installation and maintenance of a wide range of soil and groundwater remediation systems. Remedial systems have included both active and passive free-product recovery, traditional groundwater pump and treat, soil-vapor extraction, air sparging, bioventing, bioremediation, excavation impacted-soil management and natural attenuation.

Mr. Baldwin has been the principal-in-charge and directly responsible for hundreds of projects related to the wireless telecommunications field. He has overseen the conduct of hundreds of Phase I Environmental Site Assessments (ESAs) and limited Phase II ESAs. He has developed and implemented Soil and Groundwater Management Work Plan to address environmental impairment issues. He has been instrumental in developing appropriate mitigation measures with various project team members including site acquisition, legal counsel and headquarters level staff.

Mr. Baldwin has evaluated the potential environmental impacts of proposed projects including golf courses, housing developments, senior housing, schools, automobile repair facilities and retail shopping centers. The potential impacts included those to groundwater quality from herbicide/pesticide application, disposal of sanitary waste and school laboratory waste and the impacts to soil quality from handling and disposal of hazardous materials, leaking underground storage tanks, historic disposal of hazardous waste and pesticide/herbicide application. These impacts were evaluated through a variety of means including the collection and analysis of soil and groundwater samples, geo- and organic-chemistry modeling, groundwater fate and transport modeling and basic research of materials, their uses and their potential migration pathways. Mr. Baldwin has provided expert witness services for various venues ranging from NYSDEC spill and hazardous waste sites to potential noise impacts.

Mr. Baldwin has been involved in hundreds of subsurface soil and groundwater investigations ranging from Phase I & II Environmental Site Assessments (ESAs) to Remedial Investigations. Investigation and delineation techniques have included soil borings, groundwater monitoring well networks, hydropunch/GeoProbe sampling, surface and bore-hole geophysical methods, soil-gas surveys, aquifer testing, surface water and sediment sampling, waste characterization (soils piles, drums, USTs, ASTs, landfills, etc), test pits, and computer fate and transport modeling. Materials investigated have included petroleum products (heating/fuel oil and gasoline), PCB oils, coal tar, heavy metals, chlorinated solvents, explosives, pesticides, herbicides and buried medical waste.

Mr. Baldwin has been in the forefront of both evaluating and addressing shallow soils on Long Island which have been impacted by pesticides (particularly arsenic) and herbicides. This important issue is particularly of concern due to the re-development of agricultural lands for residential and educational end uses. Mr. Baldwin has work closely with the SCDHS and Town of Brookhaven to develop effective and easily implementable Soil Management Plans.

Mr. Baldwin works closely with the U.S. Environmental Protection Agency (EPA), New York State Department of Environmental Conservation (NYSDEC) Region 1, Region 2, Region 3 and Central Office, New York State Department of Health (NYSDOH), Suffolk County

APEX

Department of Health Services (SCDHS) and Nassau County Department of Health (NCDOH). Mr. Baldwin also works with local planning and review boards including the Town of East Hampton, Town of Southampton, Town of Babylon, Town of Brookhaven, Village of Patchogue, Village of Great Neck and New York City on issues ranging from groundwater quality to historic resources to noise impacts.

Mr. Baldwin's projects include supervising and performing Remedial Investigations/Feasibility Studies (RI/FSs), Interim Remedial Actions (IRMs), and implementation of selected remedies at NYSDEC Class 2 and 2a Inactive Hazardous Waste Disposal sites. Other work, conducted with the NYSDEC, includes evaluating and implementing large-scale groundwater and soil treatment systems to remediate MTBE.

Environmental Data Analyses

Mr. Baldwin has received multiple sessions of environmental geochemistry training provided by environmental geochemists, including physical chemistry, thermodynamics, ionic interactions, complexation, biologic effects, and other basic principles. Training also included field sampling procedures and effects on chemical data chemical analytical methods and equipment, and QA / QC procedures and interpretation.

Mr. Baldwin has reviewed and evaluated numerous soil, groundwater, product, indoor / ambient air and soil vapor chemical analytical datasets, including evaluation of batch and site-specific QA / QC samples, laboratory narratives, comparison to regulatory agency criteria, historic data, and background data.

Mr. Baldwin has been responsible for the development and implementation of numerous Quality Assurance Project Plans (QAPP), including QAPP design, sample delivery group (SDG) evaluations, sampling procedures and sequences, and QA / QC sample preparation/collection.

Mr. Baldwin has attended periodic environmental chemistry training sessions hosted by environmental laboratories and participated in hands-on training in data and QA / QC evaluation.

Mr. Baldwin has prepared Data Usability Summary Reports (DUSRs) for numerous chemical analytical datasets for projects overseen by the USEPA, NYSDEC and other regulatory agencies. Datasets evaluated have included soil, groundwater, soil vapor, indoor air and ambient air.

Mr. Baldwin has performed forensic assessments of historic environmental chemical analytical data to resolve apparent discrepancies with modern data and other dataset inconsistencies.
Mr. Baldwin has interpreted numerous organic parameter datasets to evaluate breakdown sequences, likely original parameters and rates of degradation.

Mr. Baldwin has formulated numerous chemical treatment plans for insitu remediation of environment contaminants, including assessment of contaminant concentrations and distribution, chemical processes and indicators, natural attenuation indicators, additional stociometric demands and hydrogeologic factors.

Selected Project Experience

Project Director for Major NY Metro Airport Project
Mr. Baldwin is part of a large project team which has been tasked by a coalition of major airlines to evaluate the efficacy of re-instituting the delivery of jet fuel via a water-borne barge delivery system. As part of the project, Mr. Baldwin evaluated the requirements for permits from various agencies including the NYSDEC, USACE, NYSDOS and New York City. Mr. Baldwin has also been providing ongoing evaluations of potential project design scenarios which required the evaluation of existing data sets (e.g., bathymetric surveys, former permits, etc.), conducting cost-benefit analyses assuming various dredge spoil disposal options, etc. This is a major, on-going project with long-term ramifications at all of the major New York Metropolitan airport facilities.

Project Director for Ferry Terminal Project, Glen Cove, NY
The City of Glen Cove Industrial Development Agency (IDA) has acquired Federal Stimulus Funding to develop a ferry terminal along their waterfront area in order to provide passenger ferry service from the North Shore of Long Island to the New York Metropolitan Area, and potentially to selected Connecticut locations. The selected site is part of the former Li Tungsten and Captains Cove Federal and New York State Department of Environmental Conservation (NYSDEC) Superfund Sites. Both sites were subject to remedial actions and were "closed" by both the United States Environmental Protection Agency (USEPA) and NYSDEC circa 2000. A wide range of contaminant types were potentially associated with both sites including solvents, petroleum, oils, heavy metals and radiation. The

NYSDEC and IDA required the preparation of a Soil Management Plan (SMP) as potentially-impacted soils and bottom sediments were potentially going to be encountered as part of the project. Mr. Baldwin successfully prepared and executed a Dredging / Excavation (D / E) Work Plan which detailed the requirements to field screen all excavated soils and dredge spoils with a radiation detector, photo-ionization detector (PID) and by visual / olfactory inspection. Based upon the results of the field screening, excavated soils and dredge spoils were to be addressed by one of the following: 1) cleared for use as on-site backfill materials; 2) disposed of as non-hazardous, regulated materials; or, 3) as hazardous waste. Mr. Baldwin was also responsible for designing and implementing a sediment sampling and analyses program to: 1) evaluate ambient creek bottom conditions with respect to a wide-range of contaminant types; and, 2) confirm the chemical conditions of the "new sea floor" prior of dredging and excavation activities. Mr. Baldwin also successfully applied for a received a NYSDEC Case-specific Beneficial Use Determination (BUD) finding as part of a cost-effective materials disposal option, as well as successfully applying for a NYSEC Long Island Well permit required as part of continuing project support activities.

Project Director for Marina Property, Glen Cove, NY

Mr. Baldwin was responsible for conducting turn-key environmental and engineering services for this active marina facility. The services included: 1) conducting a high-resolution bathymetric survey of the marina's basin in order to evaluate effective depths / vessel mooring and access restrictions; 2) successful acquisition of a United States Army Corps of Engineers (USACE) / NYSDEC Joint Application permit to repair a failed bulk head; 3) preparation of a full engineered design package to rebuild a failing dock-side water supply system; 4) conduct of a land-ward and marine geotechnical evaluation to determine the suitability of sub-surface materials for future construction projects; 5) collection and analyses of multiple bottom sediment samples to evaluate same for dredging issues; and, 6) participation in the marina design team. As part of this, Apex participated in multiple site meetings to discuss dock geometry, future infrastructure repair requirements, future regulatory permitting requirements, travel lift slip issues, potential future dredging protocols, etc.

Project Director for Marina Property, Patchogue, NY

Mr. Baldwin was responsible for providing turn-key environmental and engineering services for this active marina facility. These services included: 1) conduct of a high-resolution bathymetric survey of the marina's basin in order to evaluate effective depths / vessel mooring and access restrictions; 2) Preparation and submission of a USACE / NYSDEC Joint Application permit for maintenance dredging /marina infrastructure improvement; 3) preparation of a full engineered design package to rebuild a failing travel lift rail system; 4) contractor oversight; and, 5) Participation in the marina design team. As part of this, Apex has participated in multiple site meetings to discuss dock geometry, future infrastructure repair requirements, future regulatory permitting requirements, travel lift slip issues, potential future dredging protocols, etc.

Project Director for 10-Year Dredging and Beach Nourishment Program, Yarmouth, MA

Mr. Baldwin has been responsible for providing permit application preparation services for the Town of Yarmouth on Cape Cod. There are currently 37 Town-wide sites which are subject to multiple local, State and Federal permits for maintenance dredging and beach nourishment activities. The Town of Yarmouth's wetlands and waterways represent a highly-valuable, yet fragile ecosystem/resource. Current and historic dredging and beach nourishment practices on a site-by-site basis over the past decades have resulted in a confusing and difficult-to-manage situation with respect to this highly-complex system. Apex recommended that a 10-Year Town-wide Dredging and Beach Nourishment Program be approved and implemented wherein all 37 Yarmouth and Dennis dredge and beach nourishment sites are included/managed under one comprehensive management program. This will allow for effective use of Town resources, as well as ensuring that the dredge/nourishment sites are appropriately managed within appropriate regulatory guidelines. Again, the overall goal of this program is to allow the Town of Yarmouth to manage more effectively its waterways and beaches.

New York State Department of Environmental Conservation, Groundwater Evaluation and Treatment, Taconic Developmental Disabilities Services Office, Wassaic, NY

Worked on a public water supply site in New York conducting a full-scale groundwater investigation in the vicinity of the facility's supply wells which have been impacted by MTBE. Multiple well clusters were installed surrounding the high-capacity wells to evaluate subsurface conditions. One impacted well was converted to a remediation well to provide hydraulic capture of the MTBE plume prior to its impacting the remaining downgradient wells. A large-scale granulated-activated carbon (GAC) system was installed to treat the water extracted from the well. A 40,000-pound GAC unit was also installed in standby mode to address the facility's drinking water should the concentrations of MTBE ever warrant treatment. Several rounds of groundwater investigation were also conducted to confirm the MTBE source area as a nearby gasoline service station. Pilot testing was conducted and an on-site groundwater treatment system was being designed to provide source area remediation.

New York State Department of Environmental Conservation, Potable Water Treatment System, Village of Brewster, NY

Designed and constructed a supplemental water treatment system at a public water supply plant to address MTBE contamination in the system prior to its distribution. The treatment system consisted of a large air stripping tower, installed in line with an existing air stripper to remove the MTBE to non-detectable concentrations. Additionally, a source area investigation was being conducted to determine the potential source(s) of the MTBE contamination.

New York State Department of Environmental Conservation, Potable Water Treatment System, Sullivan Correctional Facility, Fallsburg, NY

Worked with the NYSDEC to evaluate, design and install a supplemental water treatment system to address MTBE present in a New York State Correctional Facility's drinking water. All four of the facility's wells were impacted. Several remedial options including utilizing GAC or air strippers were evaluated. The selected alternative was a 20,000-pound GAC system which was installed inline and in standby mode.

New York State Department of Environmental Conservation, Large Scale Investigation / Remediation Project, Lake Success, New York

Managed large-scale site activities at a major Long Island aerospace facility. Activities included operations of on-going IRMs (soil vapor extraction and groundwater extraction and treatment systems); citizen participation activities; design and implementation of on-site remedies (drywell removal and soil excavation, installation of fencing and an 1,800 gallon per minute groundwater extraction and treatment system); on- and off-site RIs; regulatory compliance activities; client interactions; multi-task, multi-contractor scheduling and management; and general project management. As part of the RI, prepared a large three-dimensional groundwater flow and particle model utilizing Visual MODFLOW and MODPATH. The model was then utilized to design an optimum groundwater treatment system.

Prepared a scoping plan and RI report for an Inactive Hazardous Waste Disposal site in New York under the NYSDEC Superfund program. The work involved evaluating the nature and extent of halogenated solvents in soil and groundwater both on and off of the site. Was responsible for overseeing all phases of the report preparation, including communications with the NYSDEC and for implementing the citizen participation program. Also involved in the preparation of the FS report and selection of the final remedy which included the use of an innovative groundwater treatment technology, in-well air stripping.

Project Director for Marina Property Assessment, Hampton Bays, NY

The owner of this active marina facility was served with a Notice of Violation (NOV) by the NYSDEC for various environmental issues, mostly related to on-site petroleum storage / delivery systems, as well as impacts potentially associated with marine-activity uses such as vessel bottom paint removal and application, use of preserved woods, vessel maintenance activities, housing-keeping issues, etc. Apex was responsible, with input from the NYSDEC, for developing and implementing a Site Investigation Program to investigate potential soil and groundwater impacts associated with the aforementioned on-site practices. Based upon the results of the investigation, Apex was able to conclude that the fuel distribution system was not leaking and that groundwater was not deleteriously impacted. Minor areas of impacted soil, likely from vessel bottom cleaning activities, were identified. Apex prepared and implemented a NYSDEC-approved Remedial Action Plan which included the following: 1) targeted removal of metals-impacted soils; 2) conversion of the existing gasoline / diesel underground storage tank (UST) / sub-grade distribution system to non-regulated biofuel use; 3) confirmation of facility use of aboveground storage tanks (ASTs) equipped with double-walled containment, 4) permitting a vessel-washing rinsate containment/treatment system; and, 5) use of asphaltic/concrete paving as engineering controls to minimize future potential user contact with remaining impacted soils.

Project Manager for Dredge Spoils Quality Investigation, New London, CT.

Mr. Baldwin was retained by a not-for-profit group concerned that the planned disposition of dredge spoils from the Thames River associated with the US Navy nuclear submarine base would negatively impact the lobster fishery of off Fishers Island in the Long Island Sound. Mr. Baldwin directed the field team which collected gravity cores from along the portion of the Thames River slated for dredging. Mr. Baldwin utilized the services of a nationally-recognized laboratory to analyze the bottom sediment samples for a wide-range of contaminants. Other than potentially elevated concentrations of dioxins, the bottom sediments proved to be relatively free of anthropogenic contaminants.

Richard J. Baldwin, C.P.G., P.G. (Continued)
Apex Companies, LLC, Project Director

Project Director for Marina Property Assessment, Center Moriches, NY.
Mr. Baldwin was responsible for conducting an evaluation of environmental conditions at this active marina which was under consideration for re-development with residential housing. Issues evaluated included soil and groundwater conditions associated with on-site vessel repair, bottom paint application/removal, USTs and dredge spoils. Based upon the results of the investigation, impacted soils were excavated, transported to and disposed of at an appropriately-licensed facility. The dredge spoils were not impacted above regulatory criteria and required not special actions. Based upon the results of the investigation and remediation activities, the Suffolk County Department of Health Services approved the site for residential re-development.

Senior Project Manager for Former La Salle Military Academy, Oakdale, NY.
Mr. Baldwin was part of project team that conducted a feasibility study for the redevelopment of a portion of this former educational facility. A major component of the Feasibility Study was the evaluation of an on-site boat basin and associated building infrastructure (e.g., a team house) with respect to potential dredging requirements, permitting issues, bottom sediment conditions and marina design.

Former Hess Terminal, Patchogue River, Patchogue, NY.
Mr. Baldwin conducted a site investigation program at this former major fuel oil terminal site to evaluate the efficacy of same for residential re-development, which would have included a residence-use only marina. The site had been the subject of previous site remediation activities, and the NYSDEC had closed its spill file assuming that the site would only be utilized for commercial or industrial purposes. Soil, groundwater, soil vapor and outdoor ambient air samples were collected and analyzed as part of this evaluation. The results of the investigation indicated that additional soil remediation would have been required to make the property suitable for residential re-development. Additionally, the NYSDEC would have likely required the installation and operation of sub-slab depressurization systems for all on-site residential buildings prior to their approving the plans for the site.

Former Lumber Yard Facility, Arverne, NY.
Mr. Baldwin provided environmental consulting services associated with planned redevelopment of a six-acre parcel of land located on the Barbados Basin. The client proposed to construct and operate a boat marina with associated catering hall/shopping complex on this former lumber yard. An exhaustive site investigation including a geophysical survey, soil and groundwater testing and wetlands/permit evaluation was conducted in accordance with the New York City Environmental Quality Review (CEQR) regulations. Also conducted an exhaustive feasibility study regarding stormwater runoff /sanitary waste disposal options. The results of the investigation indicated that historic fill materials on the subject property contained actionable concentrations of lead. Prepared a site specific Soil Management Plan for submission to the New York City Department of Environmental Protection (NYCDEP). The NYCDEP agreed with the remedial option of capping the lead-impacted fill materials under two feet of clean fill to prevent future site users from coming into contact with same.

Dielectric Fluid Release, Village of Port Washington, NY.
During excavation activities being conducted for installing a team building at a Town-owned marina facility, Town of North Hempstead personnel encountered and broke a major, unmarked buried electric line. This rupture caused the immediate and catastrophic release of an estimated 30,000 gallons of dielectric fluid. Mr. Baldwin was retained by the Town of North Hempstead to oversee the cleanup of surface materials, as well as the evaluation of dielectric fluid floating on top of the water table. Adsorbent booms were placed and maintained along the associated wetlands and all identified areas of impacted soils were remediated. A series of monitoring wells were installed and evaluated to ensure the absence of dielectric fluid floating on the water table which would eventually discharge to the adjacent water way. Based upon the work conducted, the released dielectric fluid did not contain polychlorinated biphenyls (PCBs), and the NYSDEC was satisfied that the released had been adequately remediated.

Brownfield Re-development, Greenport, NY.
Mr. Baldwin managed one of the few active NYSDEC Brownfield sites on Long Island utilizing New York State Environmental Bond Act funding. The work included evaluating a large Village-owned undeveloped water-front property for the presence of undocumented USTs utilizing surface geophysical techniques, removing the USTs and associated impacted soils and preparing Site Investigation and Remedial Action reports. Responsible for all regulatory interactions, subcontractor management and Citizen Participation Plan implementation. The work was conducted concurrently with the redevelopment of the site for use as a public park including a water-front walk way, amphitheater and historic carousal.

Preliminary Site Assessment, Concord Naval Weapons Station, Concord, NY.
Mr. Baldwin was the Project Manager responsible for conducting an environmental investigation in the portion of the Concord Naval Weapons Station known as the Tidal Area. The investigation included collecting and analyzing soil, sediment and groundwater samples from adjacent to and within on-site wetlands. Mr. Baldwin also utilized an aerial

magnetic survey to identify anomalies on a nearby off-shore island which could potentially represent buried railcars full of munitions which were reportedly buried after a major WW II explosion which killed hundreds of people. Mr. Baldwin conducted the field investigation which evaluated the nine magnetic anomalies which turned out to be ship wrecks, a crane, gas well heads, miscellaneous debris, etc. No anomalies representative of buried rail cars were observed. Mr. Baldwin was responsible for conducting a geotechnical evaluation of the materials making up the island, known as Bay Muds, which due to their very poor shear strength, could not have been excavated sufficiently to allow for burial of the rail cars. Therefore, it was Mr. Baldwin's belief that the reported burial of the rail cars full of munitions was incorrect.

Site Investigation Activities, Saint George Ferry Terminal, Staten Island NY

Mr. Baldwin was responsible for implementing a groundwater evaluation of the major ferry terminal site to evaluate the most efficacious means of removing two, large out-of-service No. 6 fuel oil USTs. The work including setting up and conducting a tidal influence study, major aquifer pumping test and conducting three-dimensional groundwater modeling. Evaluated and recommended the use of sheet piling surrounding the two USTs to isolate same from the surrounding aquifer materials and protect the adjacent buildings. The recommended remedial approach was implemented and the USTs were successfully removed with minimal de-watering required and the adjacent buildings were successfully protected.

Bottom Sediment Evaluation, Lake Success, NY

As part of a major environmental investigation of a nearby New York State Superfund site, Mr. Baldwin was responsible for the collection and analysis of bottom sediment samples from Lake Success and two on-site stormwater recharge basins. The results of the investigation indicated that the bottom sediment conditions in the on-site recharge basins and Lake Success were very similar leading to the conclusion that the observed impacts to the basins were likely non-site related and typical of stormwater runoff. Further, a bathymetric survey and at-depth water quality investigation was conducted for Lake Success.

Stormwater Retention Basin Bottom Sediment Evaluation, Lake Success, NY

As part of a major environmental investigation of a New York State Superfund site, Mr. Baldwin was responsible for evaluating the thickness of potentially impacted bottom sediments in two on-site stormwater recharge basins. The basins had reportedly been subject to discharge on impacted non-contact cooling waters and other site process waters. As a cost-saving measure, and in order to collected as much data as quickly as possible, Apex utilized an innovative investigation approach of transecting the surfaces of both frozen basins with a ground-penetrating radar (GPR) units. The GPR data was then cross-correlated with direct field measurements collected utilizing more standard techniques (e.g., gravity coring, penetration tests, etc.) to confirm the accuracy of the geophysical technique. The final data set was utilized to evaluate potential remedial techniques and costs.

Terrestrial/Martian Analogue Evaluation, Dry Valley Lakes, Antarctica

While at the United States Geological Survey (USGS), Mr. Baldwin participated on a project team which evaluated the physical and biota conditions of ice-covered lakes in the Dry Valley Region of Antarctica. Such conditions (e.g., ice-covered lakes in an otherwise frozen, low-precipitation region) were believed to be a strong terrestrial analogue for potential lakes which may have formed in the distant past in the Valles Marineris Canyon System on Mars. The biota of the Dry Valley ice-covered lakes was dominated by primitive stromatolites mounds, with much of the sedimentary section dominated by sand and gravel which had migrated through the ice cover. The overall purpose of the work was to assist NASA in evaluating future Mars landing sites with the highest potential for providing fossilized evidence for life on Mars.

Riverine Sediment Evaluation, Thames River, New London, CT

Mr. Baldwin was retained by a not-for-profit group concerned that the planned disposition of dredge spoils from the Thames River associated with the US Navy nuclear submarine base would negatively impact the lobster fishery of off Fishers Island in the Long Island Sound. Mr. Baldwin directed the field team which collected gravity cores from along the portion of the Thames River slated for dredging. Mr. Baldwin utilized the services of a nationally-recognized laboratory to analyze the bottom sediment samples for a wide-range of contaminants. Other than potentially elevated concentrations of dioxins.

Additional information upon request

APPENDIX C

HEALTH AND SAFETY PLAN INCLUDING COMMUNITY AIR MONITORING PLAN

APPENDIX C
HEALTH AND SAFETY PLAN

This worker Health and Safety Plan (HASP) has been prepared by FPM Group (FPM) for New York State Department of Environmental Conservation (NYSDEC) Brownfield Program Site #C2414141, identified as the 34-11 Beach Channel Drive Site located in Far Rockaway, Queens, New York (Site). This HASP is part of the Remedial Investigation (RI) Work Plan and includes measures for the protection of worker health and safety during RI activities. A Community Air Monitoring Plan (CAMP) is also included to address potential issues that may affect the Site community.

C.1 Worker Health and Safety Plan

C.1.1 Introduction

This HASP has been written for compliance with "OSHA Hazardous Waste Operations Standards (29 CFR 1910.120)", the guidance documents, "Standard Operating Safety Guidelines (Office of Solid Waste and Emergency Response, 1992)" and the "Occupational Safety and Health Guidance Manual for Hazardous Waste Activities" (U.S. Department of Health and Human Services, 1985).

C.1.2 Scope and Applicability of the HASP

This HASP is designed to be applicable to locations where soil borings, soil vapor sampling, and well installation and sampling are performed at the Site by all parties that either perform or witness the activities. This HASP may also be modified or amended to meet specific needs of the proposed work.

This HASP will detail the Site safety procedures, Site background, and safety monitoring. Contractors will be required to adopt this HASP in full or to follow an FPM-approved HASP. The Health and Safety Officer (HSO) will be present at the Site to inspect the implementation of the HASP; however, it is the sole responsibility of the contractor(s) to comply with the HASP.

The HASP has been formulated as a guide to complement professional judgment and experience. The appropriateness of the information presented should always be evaluated with respect to unforeseen Site conditions which may arise.

C.1.3 Site Work Zone and Visitors

The Site work zone (a.k.a. exclusion zone) during the performance of the borings, well installation, and sampling activities will be a 30-foot radius about the work location. This work zone may be extended if, in the judgment of the HSO, Site conditions warrant a larger work zone.

No visitors will be permitted within the work zone without the consent of the HSO. All visitors will be required to be familiar with, and comply with, the HASP. The HSO will deny access to those whose presence within the work zone is unnecessary or those who are deemed by the HSO to be in non-compliance with the HASP.

All Site workers, including the contractors, will be required to have 40-hour hazardous material training (eight-hour refresher courses annually), respirator fit test certification, and current medical surveillance as stated in 29 CFR 1910.120.

The HSO will also give an on-Site health and safety discussion to all Site personnel, including the contractors, prior to initiating the Site work. Workers not in attendance during the health and safety talk will be required to have the discussion with the HSO prior to entering the work zone.

Emergency telephone numbers and directions to the nearest hospital are shown in Table C.1.3.1 and will be kept at the Site in the possession of the HSO and will be available to all Site workers and visitors.

C.1.4 Key Personnel/Alternates

The project coordinator and Quality Assurance Officer (QAO) for this project is Stephanie Davis. The project manager will be Ben Cancemi. Mr. Cancemi will also act as the HSO. An assistant project manager and assistant health and safety officer may be designated for the field activities.

C.1.5 Site Background

Based on the Site history and previous analyses of samples, the known chemicals present at the Site include volatile organic compounds (VOCs). These chemicals are present in soil, groundwater, and/or soil vapor at the Site. Subsurface investigation activities will include the collection of soil, groundwater and soil vapor samples.

Remedial efforts via thermal treatment have been conducted on the adjoining property to the east of the Site in 2011. These efforts have reportedly increased the groundwater and/or soil temperatures and may present a hazard to site workers conducting sampling activities. Based upon this information, safety procedures for the collection of samples with elevated temperatures ("hot work") will be implemented as discussed below.

C.1.6 Task/Operation Health and Safety Analysis

This section presents health and safety analyses for the soil boring, well installation and sampling tasks. In general, FPM will employ one to two persons at the Site. No soil borings, well installation, or other Site operations will be conducted by contractors without the presence of an FPM representative on Site. In the event that the HSO is not present on the Site, the Assistant HSO will implement the HASP. Levels of personal protection mentioned in this section are defined in Section C.1.9.

Sampling personnel may encounter somewhat elevated subsurface temperatures due to prior thermal treatment for remediation of the adjoining offsite property. During thermal treatment, which was completed in August 2011, subsurface temperatures were reported to have exceeded 100° C (212° F). During the most recent reported sampling event by others (January 2012), the maximum subsurface temperature observed was approximately 45° C (113° F). Elevated temperatures were also noted in mid-2012. Although subsurface temperatures are anticipated to have decreased further by the time that the planned sampling is conducted, there is the possibility that elevated temperatures may remain present at select locations. Therefore, "hot work" procedures have been incorporated into the health and safety protocols to be used during intrusive activities with the potential for contact with hot materials.

TABLE C.1.3.1
EMERGENCY TELEPHONE NUMBERS AND
DIRECTIONS TO ST JOHN'S EPISCOPAL HOSPITAL

Police 911
Ambulance 911
Poison Control Center 212-689-9014
St John's Episcopal Hospital (Emergency Room) 718-869-7000

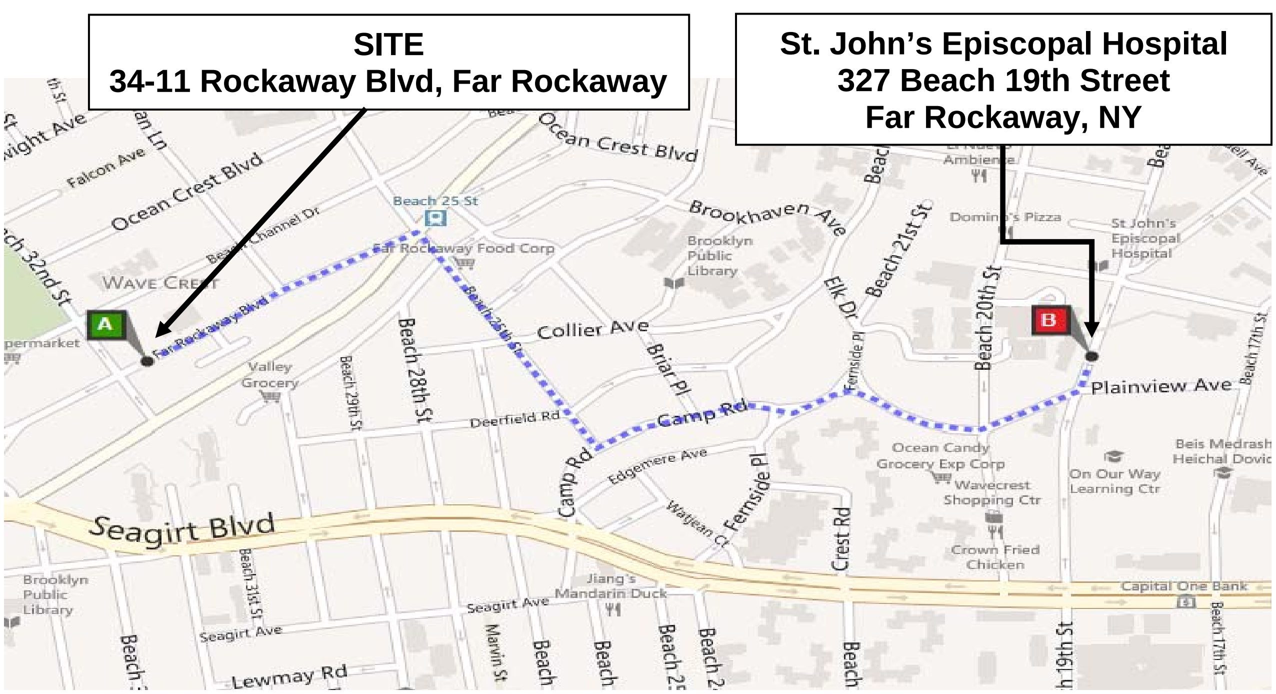
<u>FPM Contact Personnel (631-737-6200)</u>

Dr. Kevin J. Phillips, P.E. .... Cell # 631-374-6066
Stephanie Davis, Project Manager .... Cell # 516-381-3400
Ben Cancemi .... Cell # 516-383-7106

<u>Directions to St John's Episcopal Hospital</u>

327 Beach 19th Street
Far Rockaway, NY 11691
Tel: 718-869-7000

Exit the Site and turn right onto Far Rockaway Blvd. Make a right onto Beach 25th Street and continue to the end to Camp Street and turn left. Continue on Camp Street for approximately one-quarter mile and then bear left onto Fernside Place, and then immediately turn right onto Plainview Avenue. Continue for approximately one-quarter mile and then bear left onto Beach 19th Street. The Hospital is on the left; follow the signs to the Emergency Room.



Intrusive Sampling Safety Analysis

Intrusive sampling activities, including soil borings, installation of monitoring wells, and placement of soil vapor implants, will be performed by a well drilling/direct-push contractor. The soil borings, monitoring wells, and soil vapor points will be advanced into fill and unconsolidated deposits consisting primarily of sand. The depth to groundwater is approximately 8 feet below grade at the Site. FPM personnel will be present to coordinate/oversee sampling activities.

Based on the reported previous onsite experience with handling hot sampling equipment, standard work gloves or heavy-duty rubber gloves have provided sufficient protection for handling such equipment. Standard work gloves will, therefore, be used during handling of all sampling equipment. The HSO will monitor the temperature of retrieved downhole equipment and samples using visual observations (steam, thermal disturbance of surrounding air, sputtering of groundwater) and the observations of personnel handling the equipment. If the observations suggest that additional protection is needed, then additional personal protective equipment (PPE) will be worn for hot work. This additional PPE may include a rain slicker, face shield, and/or additional gloves. Work will not proceed if, in the opinion of the HSO, this additional PPE will not provide sufficient protection for hot work.

To minimize the potential for dust inhalation during subsurface investigation activities, the HSO will assess wind, vegetation, and soil moisture conditions and, if it is deemed necessary by the HSO, the affected area will be wetted with potable water. If this measure is determined to be ineffective, the HSO may decide to upgrade personal protection to Level C respiratory protection to include respirators with dust cartridges. If extremely windy and dusty conditions exist that cannot be successfully controlled by dust suppression with potable water, then the HSO may choose to postpone the subsurface investigation activities until such time as conditions improve.

During intrusive activities organic vapor concentrations will be monitored in the work zone by utilizing a Photovac MicroTIP (or equivalent) photoionization detector (PID). The PID will be "zeroed" by exposing the PID to ambient air prior to drilling and the upper range of calibration will be established by calibrating at 98 to 100 parts per million (ppm) of isobutylene. Background organic vapor concentrations will then be established in the work zone prior to intrusive activities and recorded in the HSO's field book. Upon commencement of subsurface activities, PID readings will be obtained in the workers' breathing zone. Readings will be obtained following the initial auger/rod advance into the ground and every five feet thereafter. At the discretion of the HSO, PID readings may be obtained more frequently. All readings and observations will be recorded in the HSO field book. PID air monitoring will be conducted by FPM personnel. Steady-state PID readings greater than five ppm in the worker's breathing zone will require upgrading to Level C personal protective equipment. Steady-state readings, for this purpose, will be defined as readings exceeding five ppm above background for a minimum of ten seconds at points approximately one foot above and then around the borehole opening. These points will define the worker's breathing zone. Level C personal protection will be implemented including full-face air-purifying respirators with dust and organic vapor cartridges (personal protective equipment will be described in greater detail in Section C.1.9). All FPM personnel and contractors must be properly trained and fit tested prior to donning respirators.

If PID readings exceed steady-state levels greater than 50 ppm above background or any conditions exist for which the HSO determines require Level B personal protective equipment, all work at the Site will cease immediately and all personnel will evacuate the work zone. Evacuation will occur in the upwind direction if discernible. Specific evacuation routes will be discussed prior to commencement of work at each location based on work location and wind direction and an evacuation meeting place will be determined. Level B conditions are not anticipated to be encountered; however, if level B conditions arise, no Site work will be performed by FPM or contractors and a complete evaluation of the operation will be performed and this HASP will be modified.

Soil Boring/Well Installation/Soil Vapor Implant Installation Safety Analysis

Soil borings and well and soil vapor implant installation will be performed by a drilling/direct-push company. Direct push tooling will be advanced into unconsolidated glacial deposits consisting primarily of sand. The depth to groundwater is approximately eight feet below grade at the Site. FPM personnel will be present to observe the well installation activities.

To minimize the potential for dust inhalation during soil boring/well/soil vapor implant installation, the HSO will assess wind, vegetation, and soil moisture conditions and, if it is deemed necessary by the HSO, the affected area will be wetted with potable water. If this measure is determined to be ineffective, the HSO may decide to upgrade personal protection to Level C respiratory protection to include respirators with dust cartridges. If extremely windy and dusty conditions exist that cannot be successfully controlled by dust suppression with potable water, then the HSO may choose to postpone the well installation until such time as conditions improve.

Organic vapor concentrations will be monitored in the work zone by utilizing a Photovac MicroTIP PID. The PID will be "zeroed" by exposing the PID to ambient air prior to drilling and the upper range of calibration will be established by calibrating at 98 to 100 parts per million (ppm) of isobutylene. Background organic vapor concentrations will then be established in the work zone prior to well installation and recorded in the HSO field book. Upon commencement of well installation, PID readings will be obtained in the workers' breathing zone. Readings will be obtained following the initial auger/rod advance into the ground and every five feet thereafter. At the discretion of the HSO, PID readings may be obtained more frequently. All readings and observations will be recorded in the HSO field book. PID air monitoring will be conducted by FPM personnel. Steady-state PID readings greater than five ppm in the worker's breathing zone will require upgrading to Level C personal protective equipment. Steady-state readings, for this purpose, will be defined as readings exceeding five ppm above background for a minimum of ten seconds at points approximately one foot above and then around the borehole opening. These points will define the worker's breathing zone. Level C personal protection will be implemented including full-face air-purifying respirators with dust and organic vapor cartridges (personal protective equipment will be described in greater detail in Section C.1.9). All FPM personnel and contractors must be properly trained and fit tested prior to donning respirators.

If PID readings exceed steady-state levels greater than 50 ppm above background or any conditions exist for which the HSO determines require Level B personal protective equipment, all work at the Site will cease immediately and all personnel will evacuate the work zone. Evacuation will occur in the upwind direction if discernable. Specific evacuation routes will be discussed prior to commencement of work at each location based on work location and wind direction and an evacuation meeting place will be determined. Wind-direction telltales will be placed in the work zone to monitor wind direction. Level B conditions are not anticipated to be encountered; however, if level B conditions arise, no Site work will be performed by FPM or contractors and a complete evaluation of the operation will be performed and this HASP will be modified.

All personnel will be required to wear chemical-resistant nitrile gloves when the potential for dermal contact with the soil or groundwater is possible. This will include handling rods retrieved from the borehole. Dermal contact with soil and groundwater and equipment that has been in contact with soil and groundwater will be avoided.

Water Level Measurement and Sampling Safety Analysis

Water level measurements and sampling activities will be performed by FPM personnel. In general, FPM will employ one to two persons at the Site. No water level measurements or sampling activities are anticipated to be performed by contractors.

Organic vapor concentrations will be monitored in the work zone during soil sampling by utilizing a PID. The PID will be "zeroed" by exposing the PID to ambient air prior to sampling and the upper range will be calibrated using 98 to 100 ppm isobutylene. Background concentrations will then be established in the work zone prior to initiating work and recorded in the HSO field book. Upon initiating work, PID readings will be obtained from the vicinity of the sampling areas. At the discretion of the HSO, PID readings may be obtained more frequently. All readings and observations will be recorded in the HSO field book. PID air monitoring will be conducted by FPM personnel.

Steady-state PID readings greater than five ppm in the worker's breathing zone will require upgrading to Level C personal protective equipment, as described above. Upon encountering PID levels greater than 50 ppm above background in the worker's breathing zone, all personnel will be excavated from the work zone in the upwind direction. Specific evacuation routes will be discussed prior to commencement of work at each location based on work location and wind direction, as discussed above. Level B conditions are not anticipated to be encountered; however, if Level B conditions arise, no Site work will be performed by FPM or contractors and a complete evaluation of the operation will be performed and this HASP will be modified.

All personnel will be required to wear chemical-resistant gloves (such as butyl or nitrile) when the potential for dermal contact with groundwater is possible. This will include cleaning and handling of retrieved sampling equipment, water level indicators, bailers, and/or rope from the boreholes or wells. Dermal contact with groundwater and equipment that has been in contact with groundwater will be avoided. For handling sample containers, thin nitrile gloves may be used if dexterity is required and if there is no need for "hot work". In addition, eye protection will be worn by samplers during periods when the potential for splashing of groundwater is present (such as during well purging).

Other Safety Considerations

- Noise

During operations that may generate potentially harmful levels of noise, the HSO will monitor noise levels with a Realistic^{tm} hand-held sound level meter. Noise levels will be monitored in decibels (dBs) in the A-weighted, slow-response mode. Noise level readings which exceed the 29 CFR 1910.95 permissible noise exposure limits will require hearing protection (see Table C.1.6.1 for Permissible Noise Exposures).

Hearing protection will be available to all Site workers and will be required for exceedance of noise exposure limits. The hearing protection will consist of foam, expansion-fit earplugs (or other approved hearing protection) with a noise reduction rating of at least 29 dB. Hearing protection must alleviate worker exposure to noise to an eight-hour time-weighted average of 85 dB or below. In the event that the hearing protection is inadequate, work will cease until a higher level of hearing protection can be incorporated.

TABLE C.1.6.1
PERMISSIBLE NOISE EXPOSURES*

Duration Per Day Hours	Sound Level dBA Slow Response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
½	110

Notes:

When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C_1/T_1+C_2/T_2+.....C_n/T_n$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level.

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

*Standards derived from 29 CFR 1910.95

- Slip/Trip/Fall Preventative Measures

To reduce the potential for slipping, tripping, or falling, the work zone will be kept clear of unnecessary equipment. In addition, all Site workers will be required to wear work boots with adequate tread to reduce the potential for slipping (work boots must be leather or chemical-resistant and contain steel toes and steel shanks).

- Insects

Potential insect problems include, but are not limited to stinging insects such as bees, wasps, and hornets, and ticks. Prior to commencement of work, each work area will be surveyed for nests and hives to reduce the possibility of disturbing stinging insects. In addition, each Site worker will be asked to disclose any allergies related to insect stings or bites. The worker will be requested to keep his or her anti-allergy medicine on Site.

Tick species native to Long Island consist of the pinhead-sized deer tick and the much-larger dog tick. Ticks are unlikely to exist at the Site due to a paucity of suitable habitat. All Site workers will be advised to avoid walking through vegetated areas and will be advised to check for ticks on clothing periodically.

- Potential Electrical and Other Utility Hazards

Potential electric hazards consist mainly of overhead and underground power lines. Other site utilities that may present hazards include telephone lines, gas lines, sewer lines, water lines, and other overhead or underground utilities. Prior to commencement of work at the Site, all soil borings and well installation locations will be inspected with respect to overhead lines. Soil borings and well installation work involving heavy equipment will not be performed when the horizontal distance between the equipment and overhead wires is less than 30 feet.

Underground potential utility hazards will be minimized by contacting the One-Call service to provide markouts of the utilities beneath adjoining public streets.

- Heat/Cold Stress

Heat stress may become a concern especially if protective clothing is donned that will decrease natural ventilation. To assist in reducing heat stress, an adequate supply of water or other liquids will be staged on the Site and personnel will be encouraged to rehydrate at least every two hours even if not thirsty. In addition, a shady rest area will be designated to provide shelter during sunny or warm days and Site workers will break for at least 10 minutes every two hours in the rest area, and, in very hot weather, workers wearing protective clothing may be rotated.

Indications of heat stress range from mild (fatigue, irritability, anxiety, decreased concentration, dexterity or movement) to fatal. Medical help will be obtained for serious conditions.

Heat-related problems are:

- Heat rash: caused by continuous exposure to heat and humid air and aggravated by chafing clothes. Decreases ability to tolerate heat.

- Heat cramps: caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen.

- Heat exhaustion: caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.

- Heat stroke: the most severe form of heat stress. Can be fatal. Medical help must be obtained immediately. Body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Cold exposure is a concern if work is conducted during cold weather, marginally cold weather during precipitation periods, or moderate to high wind periods. To assist in reducing cold exposure the following measures will be taken when cold exposure concerns are present:

- All personnel will be required to wear adequate and appropriate clothing. This will include head gear to prevent the high percentage loss of heat that occurs in this area (thermal liners for hard hats if hard hats are required).

- A readily-available warm shelter will be identified near the work zone.

- Work and rest periods will be scheduled to account for the current temperature and wind velocity conditions.

- Work patterns and the physical condition of workers will be monitored and personnel will be rotated, as necessary.

- Indications of cold exposure include shivering, dizziness, numbness, confusion, weakness, impaired judgment, impaired vision, and drowsiness. Medical help will be obtained for serious conditions if they occur.

Cold exposure-related problems are:

- Frost bite: Ice crystal formation in body tissues. The restricted blood flow to the injured part results in local tissue destruction.

- Hypothermia: Severe exposure to cold temperature resulting in the body losing heat at a rate faster than the body can generate heat. The stages of hypothermia are shivering, apathy, loss of consciousness, decreasing pulse and breathing rate, and death.

The Buddy System

All activities in contaminated or potentially contaminated areas will be conducted by pairing off the Site workers in groups of two (or three if necessary). Each person (buddy) will be able to provide his or her partner with assistance, observe his or her partner for signs of chemical, cold, or heat exposure, periodically check the integrity of his or her partner's protective clothing, and notify the HSO or others if emergency help is needed. The buddy system will be instituted at the beginning of each work day. If new workers arrive on Site, a buddy will be chosen prior to the new worker entering the work zone.

Site Communications

Two sets of communication systems will be established at the Site: internal communication among personnel on-Site, and external communication between on-Site and off-Site personnel. Internal communication will be used to alert team members to emergencies, pass along safety information such as heat stress check, protective clothing check, etc, communicate changes in the work to be accomplished, and maintain Site control. Due to ambient noise, verbal communications may be difficult at times. The HSO will carry a whistle (and compressed air horn if respirators are donned) to signal Site workers. A single whistle blast will be the signal to immediately evacuate the work zone through the access control point. This signal will be discussed with all Site workers prior to commencement of work.

An external communication system between on-Site and off-Site personnel will be established to coordinate emergency response, report to the Project Manager, and maintain contact with essential off-Site personnel. A field telephone will be available at all times in the HSO's vehicle. In addition, a backup telephone will be identified prior to the commencement of Site operations and this location will be relayed to all Site workers.

General Safe Work Practices

Standing orders applicable during Site operations are as follows:

- No smoking, eating, drinking, or application of cosmetics in the work zone.

- No matches or lighters in the work zone.

- All Site workers will enter/exit work zone through the Site access point.

- Any signs of contamination, radioactivity, explosivity, or unusual conditions will require evacuating the Site immediately and reporting the information to the HSO.

- Loose-fitting clothing and loose long hair will be prohibited in the work zone during heavy equipment operations.

- A signal person will direct the backing of work vehicles.

- Equipment operators will be instructed to check equipment for abnormalities such as oozing liquids, frayed cables, unusual odors, etc.

C.1.7 Personnel Training Requirements

All FPM personnel and contractor personnel will receive adequate training prior to entering the Site. FPM and contractor personnel will, at a minimum, have completed OSHA-approved, 40-hour hazardous materials Site safety training and OSHA-approved, eight-hour safety refresher course within one year prior to commencing field work. In addition, each worker must have a minimum of three days field experience under the direct supervision of a trained, experienced supervisor.

Prior to Site field work, the HSO will conduct an in-house review of the project with respect to health and safety with all FPM personnel who will be involved with field work at the Site. The review will include discussions of signs and symptoms of chemical exposure and heat/cold stress that indicate potential medical emergencies. In addition, review of PPE will be conducted to include the proper use of air-purifying respirators.

C.1.8 Medical Surveillance Program

All workers at the Site must participate in a medical surveillance program in accordance with 29 CFR 1910.120. A medical examination and consultation must have been performed within the last twelve months to be eligible for field work.

The content of the examination and consultation will include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances, health hazards, and fitness for duty including the ability to wear required personal protective equipment under conditions (i.e., temperature extremes) that may be expected at the work Site.

All medical examinations and procedures shall be performed by, or under the supervision of, a licensed physician. The Physician shall furnish a written opinion containing:

- The results of the medical examination and tests;

- The physician's opinion as to whether the employee has any detected medical conditions which would place the worker at increased risk of material impairment of the employee's health from work in hazardous waste operations;

- The physician's recommended limitations upon the worker assigned to the work; and

- A statement that the worker has been informed by the physician of the results of the medical examination and any further examination or treatment.

- An accurate record of the medical surveillance will be retained. The record will consist of at least the following information:

- The name and social security number of the employee;

- The physician's written opinions, recommended limitations, and results of examinations and tests; and

- Any worker medical complaints related to exposure to hazardous substances.

C.1.9 <u>Personal Protective Equipment</u>

<u>General Considerations</u>

The two basic objectives of the personal protective equipment (PPE) are to protect the wearer from safety and health hazards, and to prevent the wearer from incorrect use and/or malfunction of the PPE.

Potential Site hazards have been discussed previously in Section C.1.6. The duration of Site activities is estimated to be periods of several weeks. All work is expected to be performed during daylight hours and workdays, in general, are expected to be eight to ten hours in duration. Any work performed beyond daylight hours will require the permission of the HSO. This decision will be based on the adequacy of artificial illumination and the type and necessity of the task being performed.

Personal protection levels for the Site activities, based on past investigations, are anticipated to be Level D with the possibility of upgrading to Level C. The equipment included for each level of protection is provided as follows:

<u>Level C Protection</u>

Level C personnel protective equipment includes:

- Air-purifying respirator, full-face
- Chemical-resistant clothing includes: Tyvek^{tm} (spunbonded olefin fibers) for particulate and limited splash protection or Saranex^{tm} (plastic film-laminated Tyvek) for permeation resistance to solvents.
- Coveralls*, or
- Long cotton underwear*
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), leather or chemical-resistant, steel toe and

  shank.
- Boot covers (outer), chemical-resistant (disposable)*

- Hard hat (face shield)*
- Escape mask*
- 2-way radio communications (inherently safe)*

(*) optional

Meeting all of these criteria permits use of Level C protection:

- Oxygen concentrations are not less than 19.5% by volume.
- Measured air concentrations of identified substances will be reduced by the respirator below the substance's threshold limit value (TLV).
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any body area left unprotected by chemical-resistant clothing.
- Job functions do not require self-contained breathing apparatus.
- Direct readings are below 50 ppm on the PID.

Level D Protection

Personnel protective equipment:

- Coveralls
- Gloves*
- Boots/shoes, leather or chemical-resistant, steel toe and shank
- Safety glasses or chemical splash goggles*
- Hard hat (face shield*)
- Escape mask*

(*) optional

Meeting any of these criteria allows use of Level D protection:

- No contaminant levels above 5 ppm organic vapors or dusty conditions are present.
- Work functions preclude splashes, immersion, or the reasonable potential for unexpected inhalation of any chemicals above the TLV.

Additional Considerations for Selecting Levels of Protection

Another factor that will be considered in selecting the appropriate level of protection is heat and physical stress. The use of protective clothing and respirators increases physical stress, in particular, heat stress on the wearer. Chemical protective clothing greatly reduces natural ventilation and diminishes the body's ability to regulate its temperature. Even in moderate ambient temperatures, the diminished capacity of the body to dissipate heat can result in one or more heat-related problems.

All chemical protective garments can be a contributing factor to heat stress. Greater susceptibility to heat stress occurs when protective clothing requires the use of a tightly-fitted hood against the respirator face piece, or when gloves or boots are taped to the suit. As more body area is covered, less cooling takes place, increasing the probability of heat stress.

Wearing protective equipment also increases the risk of accidents. It is heavy, cumbersome, decreases dexterity, agility, interferes with vision, and is fatiguing to wear. These factors all increase physical stress and the potential for accidents. In particular, the necessity of selecting a level of protection will be balanced against the increased probability of heat stress and accidents.

Donning and Doffing Ensembles

- Donning an Ensemble

A routine will be established and practiced periodically for donning a Level C ensemble. Assistance may be provided for donning and doffing since these operations are difficult to perform alone. Table C.1.9.1 lists sample procedures for donning a Level C ensemble. These procedures should be modified depending on the particular type of suit and/or when extra gloves and/or boots are used.

- Doffing an Ensemble

Exact procedures for removing Level C ensembles must be established and followed to prevent contaminant migration from the work area and transfer of contaminants to the wearer's body, the doffing assistant, and others. Doffing procedures are provided in Table C.1.9.2. These procedures should be performed only after decontamination of the suited worker. They require a suitably attired assistant. Throughout the procedures, both worker and assistant should avoid any direct contact with the outside surface of the suit.

Respirator Fit Testing

The fit or integrity of the facepiece-to-face seal of a respirator affects its performance. Most facepieces fit only a certain percentage of the population; thus each facepiece must be tested on the potential wearer in order to ensure a tight seal. Facial features such as scars, hollow temples, very prominent cheekbones, deep skin creases, dentures or missing teeth, and the chewing of gum and tobacco may interfere with the respirator-to-face seal. A respirator shall not be worn when such conditions prevent a good seal. The worker's diligence in observing these factors shall be evaluated by periodic checks. Fit testing will comply with 29 CFR 1910.1025 regulations.

Inspection

The PPE inspection program will entail five different inspections:

- Inspection and operational testing of equipment received from the factory or distributor;
- Inspection of equipment as it is issued to workers;
- Inspection after use;
- Periodic inspection of stored equipment; and

TABLE C.1.9.1
SAMPLE LEVEL C DONNING PROCEDURES

1. Inspect the clothing and respiratory equipment before donning (see Inspection in subsection C.1.7).

2. Adjust hard hat or headpiece if worn, to fit user's head.

3. Standing or sitting, step into the legs of the suit; ensure proper placement of the feet within the suit; then gather the suit around the waist.

4. Put on chemical-resistant safety boots over the feet of the suit. Tape the leg cuff over the tops of the boots.

5. Don the respirator and adjust it to be secure, but comfortable.

6. Perform negative and positive respirator facepiece seal test procedures.

   - To conduct a negative-pressure test, close the inlet part with the palm of the hand or squeeze the breathing tube so it does not pass air, and gently inhale for about 10 seconds. Any inward rushing of air indicates a poor fit. Note that a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.

   - To conduct a positive-pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

7. Depending on type of suit:

   - Put on inner gloves (surgical gloves).

   - Additional overgloves, worn over attached suit gloves, may be donned later.

8. Put on hard hat

9. Have assistant observe the wearer for a period of time to ensure that the wearer is comfortable, psychologically stable, and that the equipment is functioning properly.

TABLE C.1.9.2
DOFFING PROCEDURES

1. Remove any extraneous or disposable clothing, boot covers, outer gloves, and tape.
2. Remove respirator by loosening straps and pulling straps over the top of the head and move mask away from head. Do not pull mask over the top of the head.
3. Remove arms, one at a time, from suit, avoiding any contact between the outside surface of the suit and wearer's body and lay the suit out flat behind the wearer. Leave internal gloves on, if any.
4. Sitting, if possible, remove both legs from the suit.
5. After suit is removed, remove internal gloves by rolling them off the hand, inside out.

- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The inspection checklist is provided in Table C.1.9.3. Records will be kept of all inspection procedures. Individual identification numbers will be assigned to all reusable pieces of equipment and records should be maintained by that number. At a minimum, each inspection should record the ID number, date, inspector, and any unusual conditions or findings. Periodic review of these records may indicate an item or type of item with excessive maintenance costs or a particularly high level of down-time.

Storage

Clothing and respirators will be stored properly to prevent damage or malfunction due to exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact. Storage procedures are as follows:

- Clothing: Potentially-contaminated clothing will be stored in a well-ventilated area separate from street clothing, with good air flow around each item, if possible. Different types and materials of clothing and gloves will be stored separately to prevent issuing the wrong materials by mistake, and protective clothing will be folded or hung in accordance with manufacturer's recommendations.

- Respirators: After each use air-purifying respirators will be dismantled, washed, and placed in sealed plastic bags.

PPE Maintenance

Specialized PPE maintenance will be performed only by the factory or an authorized repair person. Routine maintenance, such as cleaning, will be performed by the personnel to whom the equipment is assigned. Respirators will be cleaned at the end of each day with alcohol pads or, preferably, by washing with warm soapy water.

TABLE C.1.9.3
PPE INSPECTION CHECKLIST

CLOTHING

Before use:

- Determine that the clothing material is correct for the specified task at hand.
- Visually inspect for imperfect seams, non-uniform coatings, tears, and/or malfunctioning closures.
- Hold up to light and check for pinholes.
- Flex product and observe for cracks or other signs of deterioration.
- If the product has been used previously, inspect inside and out for signs of chemical attack, including discoloration, swelling, and/or stiffness.

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- Indication of physical damage, including closure failure, tears, punctures, and/or seam discontinuities.

GLOVES

Before use:

- Pressurize glove to check for pinholes. Either blow into glove, then roll gauntlet toward fingers or inflate glove and hold under water. In either case, no air should escape.

AIR-PURIFYING RESPIRATORS

- Inspect air-purifying respirators before each use to be sure they have been adequately cleaned.
- Check material conditions for signs of pliability, deterioration, and/or distortion.
- Examine cartridges to ensure that they are the proper type for the intended use, the expiration date has not been passed, and they have not been opened or used previously.
- Check faceshields and lenses for cracks, crazing, and/or fogginess.
- Air-purifying respirators will be stored individually in resealable plastic bags.

Decontamination Methods

All personnel, clothing, equipment, and samples leaving the work zone area of the Site must be decontaminated to remove any harmful chemicals that may have adhered to them. Decontamination methods either (1) physically remove contaminants (2) inactivate contaminants by chemical detoxification or disinfection/sterilization, or (3) remove contaminants by a combination of both physical and chemical means. In many cases, gross contamination can be removed by physical means involving dislodging/displacement, rinsing, wiping off, and evaporation. Contaminants that can be removed by physical means include dust, vapors, and volatile liquids. All reusable equipment will be decontaminated by rinsing in a bath of detergent and water (respirators, gloves to be reused). Monitoring equipment will be decontaminated by wiping with paper towels and water. All used PPE to be discarded will be disposed offsite as solid waste.

The effectiveness of the decontamination will be evaluated near the beginning of Site activities and will be modified if determined to be ineffective. Visual observation will be used for this purpose. The HSO will inspect decontaminated materials for discoloration, stains, corrosive effects, visible dirt, or other signs of possible residual contamination.

C.2 Community Air Monitoring Plan

This Community Air Monitoring Plan (CAMP) will be implemented at the Site by FPM during the intrusive investigation activities, including soil borings, well installation, and sampling. Due to the nature of the contaminants at the Site, there is a potential for organic vapor emissions as these activities occur. In addition, there is the potential for dust to be associated with the soil borings and well installation activities. To address these concerns, organic vapor monitoring and dust monitoring will be performed.

Any CAMP monitoring results that exceed the action levels described below will be reported (or notice provided by another arrangement acceptable to the NYSDEC) when identified if a NYSDEC representative is present at the Site or within two hours by phone call or email to the NYSDEC Project manager when no NYSDEC representative is onsite. Exceedances of the CAMP action levels will also be summarized in the monthly progress reports, including the duration of the exceedance(s) and any response actions taken.

C.2.1 Organic Vapor Monitoring

Under the CAMP, organic vapor concentrations will be monitored at the boundaries of the work zone. It will be the responsibility of the HSO to implement the plan and to ensure that proper action is taken in the event that any of the established action levels are exceeded.

To monitor organic vapors, a PID capable of calculating 15-minute running average concentrations will be used and maintained in good operating condition. Calibration of the PID will be performed according to manufacturer's instructions. Background levels of organic vapors will be measured at the work zone boundary prior to beginning work and upwind of the work area periodically using a PID. Monitoring may be performed more frequently at the discretion of the HSO. Organic vapors will be monitored continuously at the downwind perimeter of the work area during ground intrusive activities.

PID readings will be recorded in the field logbook for both background and work area perimeter. Logbook recordings will include the time, location, and PID readings observed. Downwind perimeter levels will be recorded in the log whenever the level reaches 5 ppm above the background along with the action(s) taken to mitigate the level. If the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the work area, work activities will be halted and monitoring continued. The vapor emission response plan will then be implemented.

C.2.1.1 Vapor Emission Response Plan

The vapor emission response plan includes the following trigger levels and responses:

- Greater than 5 ppm at perimeter:

  In the event the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level then decreases to below 5 ppm above background, work activities can resume but organic vapor readings will be obtained more frequently as directed by the HSO.

- 5 ppm to 25 ppm at perimeter and less than 5 ppm at the work zone boundary:

  If the level of organic vapors is greater than 5 ppm but less than 25 ppm over background at the downwind perimeter of the work area, activities will be halted, the source of the vapors will be identified and corrective actions will be taken. Monitoring will be continued and activities will resume if the organic vapor concentration at half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background. More frequent intervals of monitoring will be performed as directed by the HSO.

- Above 25 ppm at perimeter:

  If the level of organic vapors is above 25 ppm at the perimeter of the work area, activities will be shut down. Should such a shutdown be necessary, downwind air monitoring will continue as directed by the HSO to confirm that organic vapor concentrations decrease. Actions will be taken to abate the source of vapor emissions and activities will not resume until the source is controlled.

C.2.1.2 Major Vapor Emission Response Plan

The Major Vapor Emission Response Plan shall automatically be placed into effect if:

- Efforts to abate the emission source are unsuccessful and levels above 5 ppm persist for more than 30 minutes in the 20-foot zone; or

- The vapor levels are greater than 10 ppm above background in the 20-foot zone.

Upon activation of the Major Vapor Emission Response Plan, the following activities will be undertaken:

- All emergency response contacts as listed in the HASP will be notified;

- Air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring will be halted or modified as directed by the HSO; or

- If air monitoring readings remain above action levels, work will be halted and further measures taken to reduce organic vapors.

If a Major Vapor Emission Response Plan is implemented, the NYSDEC and NYSODH will be contacted within 24 hours.

C.2.2 Dust Monitoring

Dust (particulate) monitoring will be performed during soil boring and well installation intrusive activities with the potential to create dust by using a Miniram personal monitor calibrated according to the manufacturer's instructions. The Miniram will be capable of calculating 15-minute running average concentrations and operated continuously at the downwind perimeter of the work zone during ground intrusive activities. To ensure the validity of the fugitive dust measurements, appropriate QA/QC measures will be employed, including periodic instrument calibration, operator training, daily instrument performance (span) checks, and record-keeping on daily log sheets. If measurable dust levels are noted, then readings will also be obtained upwind of the work zone. If the downwind particulate level exceeds the upwind level by more than 100 micrograms per cubic meter (ug/m^3), then dust suppression techniques will be employed or work will be halted or controlled such that dust levels are reduced at the downwind perimeter to within 150 ug/m^3 of the upwind level.

If dust is generated during boring or well installation activities, then dust suppression will be performed, as discussed in Section C.1.6 of this HASP. Corrective measures may include increasing the level of PPE for onsite personnel and implementing additional dust suppression techniques. Should the action level of 150 $\mu g/m^3$ continue to be exceeded, work will stop and the NYSDEC will be notified as described in Section C.2 above. The notification will include a description of the control measures implemented to prevent further exceedances.

Reasonable fugitive dust suppression techniques will be employed during all intrusive Site activities that may generate fugitive dust. Particulate (fugitive dust) monitoring will be employed during the handling of contaminated soil or when onsite activities may generate fugitive dust from exposed contaminated soil.

Fugitive dust from contaminated soil that migrates offsite has the potential for transporting contaminants offsite. Although there may be situations when the monitoring equipment does not measure dust at or above the action level, visual observation may indicate that dust is leaving the Site. If dust is observed leaving the working area, additional dust suppression techniques will be employed.

The following techniques have been shown to be effective for controlling the generation and migration of dust during intrusive investigation activities and will be used as needed during investigation activities at the Site:

- Wetting equipment and exposed soil;
- Restricting vehicle speeds to 10 mph;
- Covering areas of exposed soil after investigation activity ceases; and
- Reducing the size and/or number of areas of exposed soil.

When techniques involving water application are used, care will be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will be considered to prevent overly wet conditions, conserve water, and provide an effective means of suppressing fugitive dust.

Evaluation of weather conditions is also necessary for proper fugitive dust control. When extreme wind conditions may make dust control ineffective, investigation actions may be suspended until wind speeds are reduced.

C.2.3 Noise Monitoring

Due to the use of heavy equipment, there is a potential for noise to impact the surrounding community. Work will be performed only during normal working hours when ambient noise levels are elevated due to ongoing activities in the surrounding community, which is primarily urban and commercial. Therefore, the potential for noise impacts on the surrounding community is low.

However, if pedestrians are present in the Site vicinity, it is possible for noise impacts to occur. To address these concerns and other safety concerns, pedestrians will be barred from entering the work zone. In addition, the HSO will periodically monitor noise levels at the work zone boundary and the closest property boundary with a Realistic^{tm} hand-held sound level meter. Noise levels will be monitored in dBs in the A-weighted, slow-response mode. If noise level readings exceed an eight-hour time-weighted average of 85 dB at the work zone boundary or at the closest property boundary, the HSO will take appropriate measures to reduce noise exposure beyond these boundaries. These measures may include extension of the work zone boundary, issuing appropriate hearing protection devices as discussed in Section C.1.6 of this work plan, or other measures, as appropriate. In the event that the noise exposure measures are inadequate, work will cease until noise levels can be reduced to below 85 dB at the work zone boundary and/or at the closest property boundary.