

**ELKS PLAZA LLC**  
**NASSAU COUNTY, NEW YORK**

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**Site Management Plan**

**NYSDEC Site Number: 1-30-193**

**Prepared for:**

**Elks Plaza LLC**  
**28 Campbell Drive**  
**Dix Hills, NY 11746**

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# TABLE OF CONTENTS

<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>LIST OF TABLES .....</b>	<b>6</b>
<b>LIST OF FIGURES .....</b>	<b>7</b>
<b>LIST OF APPENDICES .....</b>	<b>8</b>
<b>SITE MANAGEMENT PLAN .....</b>	<b>9</b>
<b>1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM .....</b>	<b>9</b>
<b>1.1 INTRODUCTION.....</b>	<b>9</b>
1.1.1 General .....	9
1.1.2 Purpose .....	2
1.1.3 Revisions .....	3
<b>1.2 SITE BACKGROUND .....</b>	<b>3</b>
1.2.1 Site Location and Description .....	3
1.2.2 Site History .....	4
1.2.3 Geologic Conditions.....	6
<b>1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS .....</b>	<b>6</b>
<b>1.3.1 Soil .....</b>	<b>7</b>
<b>1.3.2 Groundwater.....</b>	<b>8</b>
<b>1.3.3 Soil Vapor.....</b>	<b>9</b>
<b>1.4 SUMMARY OF REMEDIAL ACTIONS .....</b>	<b>11</b>
1.4.1 Removal of Contaminated Materials from the Site.....	11
1.4.2 Site-Related Treatment Systems .....	12
1.4.3 Remaining Contamination .....	13

<b>2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN.....</b>	<b>14</b>
<b>2.1 INTRODUCTION.....</b>	<b>14</b>
2.1.1 General .....	14
2.1.2 Purpose .....	14
<b>2.2 ENGINEERING CONTROLS .....</b>	<b>15</b>
2.2.1 Engineering Control Systems .....	15
2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems .....	15
<b>2.3 INSTITUTIONAL CONTROLS.....</b>	<b>16</b>
2.3.1 Soil Vapor Intrusion Evaluation.....	17
<b>2.4 INSPECTIONS AND NOTIFICATIONS .....</b>	<b>18</b>
2.4.1 Inspections.....	18
2.4.2 Notifications .....	19
<b>2.5 CONTINGENCY PLAN .....</b>	<b>20</b>
2.5.1 Emergency Telephone Numbers .....	20
2.5.2 Map and Directions to Nearest Health Facility .....	21
<b>3.0 SITE MONITORING PLAN .....</b>	<b>23</b>
<b>3.1 INTRODUCTION.....</b>	<b>23</b>
3.1.1 General .....	23
3.1.2 Purpose and Schedule.....	23
<b>3.2 COVER SYSTEM MONITORING .....</b>	<b>24</b>
<b>3.3 MEDIA MONITORING PROGRAM .....</b>	<b>25</b>
3.3.1 Groundwater Monitoring.....	25
3.3.1.1 Sampling Protocol .....	25
3.3.1.2 Monitoring Well Repairs, Replacement And Decommissioning.....	26
3.3.2 Sub-Slab Vapor and Indoor Air Monitoring .....	27

<b>3.3.3 SOIL SAMPLING .....</b>	<b>28</b>
<b>3.4 SITE-WIDE INSPECTION .....</b>	<b>28</b>
<b>3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL .....</b>	<b>29</b>
<b>3.6 MONITORING REPORTING REQUIREMENTS .....</b>	<b>30</b>
<b>4.0 OPERATION AND MAINTENANCE PLAN .....</b>	<b>31</b>
<b>4.1 INTRODUCTION.....</b>	<b>31</b>
<b>4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE .....</b>	<b>31</b>
4.2.1 Sub-Slab Depressurization System .....	31
4.2.1.2 System Start-Up and Testing.....	32
4.3.1 SSD System Monitoring Schedule.....	32
4.3.2 SSD System General Equipment Monitoring .....	32
4.3.3 SSD System Monitoring Devices and Alarms .....	32
4.3.4 SSD System Termination Sampling Protocol .....	33
<b>4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS.....</b>	<b>34</b>
4.4.1 Routine and Maintenance Reports .....	34
4.4.2 Non-Routine Maintenance Reports .....	34
<b>5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS.....</b>	<b>35</b>
<b>5.1 SITE INSPECTIONS .....</b>	<b>35</b>
5.1.1 Inspection Frequency .....	35
5.1.2 Inspection Reports .....	35



<b>5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS</b>	
.....	<b>35</b>
<b>5.3 PERIODIC REVIEW REPORT</b>	<b>37</b>
<b>5.4 CORRECTIVE MEASURES PLAN</b>	<b>38</b>
<b>REFERENCES</b>	<b>39</b>

## **LIST OF TABLES**

- 1 - Remedial Investigation Soil Contamination Summary
- 2 - Remedial Investigation On-Site Groundwater Contamination Summary
- 3 - Remedial Investigation Off-Site Groundwater Contamination Summary
- 4 - Remedial Investigation Soil Vapor Data
- 5 - Soil Cleanup Objectives for the Site

## **LIST OF FIGURES**

- 1 - Figure of Site and Site Boundaries
- 2 - Geologic Cross Section
- 3 - Groundwater Flow Figure
- 4 - Remedial Investigation Soil Contamination Summary
- 5 - Remedial Investigation On-Site Groundwater Contamination Summary
- 6 - Remedial Investigation Off-Site Groundwater Contamination Summary
- 7 - Remedial Investigation Soil Vapor Data
- 8 - Remedial Investigation Indoor and Outdoor Air Data
- 9 - Location of Initial Remedial Treatment Systems
- 10 – SSD System Layout with Fantech Fan
- 11 – Location of Soil Sample for complete TCL/TAL Analysis

## **LIST OF APPENDICES**

A - Metes and Bounds

B - Environmental Easement

C - Summary of Previous Investigations

D - Monitoring Well Boring and Construction Logs

E - Groundwater Monitoring Well Sampling Log Form

F - Quality Assurance Project Plan

G - EC System Component Manual

H – Health and Safety Plan

# **SITE MANAGEMENT PLAN**

## **1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM**

### **1.1 INTRODUCTION**

This document is required as an element of the remedial program at Elks Plaza LLC (hereinafter referred to as the “Site”) under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Order on Consent Index # W1-1120-08-04, Site #1-30-193, which was executed on August 27, 2008.

#### **1.1.1 General**

Elks Plaza LLC entered into an Order on Consent with the NYSDEC to remediate a 3.41-acre property located in Freeport, Nassau County, New York. This Order on Consent required the Remedial Party, Elks Plaza LLC, to investigate and remediate contaminated media at the site. A figure showing the location and boundaries of the property and this 0.22-acre tenant unit or “area subject to this plan” is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement.

After completion of the remedial work described in the Interim Remedial Measures Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as ‘remaining contamination.’ This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports

associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Stephen J. Osmundsen, P.E., on behalf of Elks Plaza LLC in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May, 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

### **1.1.2 Purpose**

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Nassau County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and

recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Order on Consent (Index #W1-1120-08-04; Site #1-30-193) for the site, and thereby subject to applicable penalties.

### **1.1.3 Revisions**

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

## **1.2 SITE BACKGROUND**

### **1.2.1 Site Location and Description**

The site is located in the Village of Freeport, County of Nassau, New York and is identified as Section 62; Block 114; and Lot 131 on the Nassau County Tax Map. The property is an approximately 3.41 acres area bounded by Merrick Road to the north, a vacant lot and Smith Street to the south, office buildings and Ocean Avenue to the east, and a private school, a bank and South Long Beach Avenue to the west (see Figure 1). The boundaries of the site are more fully described in Appendix A – Metes and Bounds.

This site consists of a tenant unit approximately 0.22-acres in size located in the southwest corner of a L-shaped, one-story concrete strip mall and the parking area to the south and west of that space. The current use of the site is an active Laundromat which

does not perform dry cleaning and is zoned commercial. The surrounding parcels are zoned commercial and residential.

### **1.2.2 Site History**

Previous reports for this site (Refs. 1, 2 and 3) indicate that the property was initially developed as residential dwellings and sheds from 1910 to 1925. The Sanborn maps indicate that buildings located on the property during this time included sheds, a carriage house, and a chicken coop. From 1928 to 1980 a structure on the property was utilized as an Elks Club House. The three commercial structures located at the property today were constructed in 1984 and are identified as Elks Plaza Shopping Center. A variety of tenants have occupied the units in the shopping center. For the purpose of this SMP, the area of concern is the former tenant that occupied units 179A and 181 of the shopping center from 1985 to 1996, the former King and Queen Valet Dry Cleaner.

The following investigations and associated reports were performed at this property between 2006 and 2011:

Phase II Subsurface Investigation (December 2006) – As part of a pre-purchase site investigation, seven borings were advanced at the Site by Associated Environmental Services, Ltd. Soil samples were collected from five of the borings and groundwater samples were collected from six of the borings. All of the samples were analyzed for Volatile Organic Compounds (VOCs). There were no detections of VOCs in any of the soil samples. Two of the groundwater samples collected in the southwest portion of the property contained PCE at 27 and 37 ug/l. This area is downgradient of the former dry cleaning tenant. A sample location map and data tables for this investigation is included as Appendix A

Site Characterization Report, Elks Plaza LLC (March 2010) – A Site Characterization Study was performed by Preferred Environmental. A geophysical survey was conducted to identify potential buried features of concern. Four soil samples were collected and analyzed for VOCs: one next to a geophysical anomaly in the parking lot; one next to a dry well; one next to the dumpster used by the former dry cleaner; and one below the location of the former dry cleaning machine. None of the samples detected PCE above their applicable Site Cleanup Objectives (SCOs).



The Laundromat has its own groundwater supply system. The two on-site private supply wells that comprise this system were sampled. In addition, another nine Geoprobe groundwater samples were collected. The groundwater results of these samples ranged from no detection of PCE to 180 ug/l. The highest PCE detection was located directly behind the geophysical anomaly in the parking lot.

One sub-slab vapor sample and one indoor air sample were collected in the Laundromat along with four exterior soil vapor samples and an outdoor air sample. The sub-slab vapor results ranged from no detection of PCE to 14,900 ug/m<sup>3</sup>. The indoor air sample result was 3.3 ug/m<sup>3</sup>. The highest PCE reading was in the sub-slab sample from the Laundromat. A sample location map and data tables for this investigation is included as Appendix A.

Supplemental Soil Vapor Investigation, Elks Plaza LLC (June 2010) – As a supplement to the initial Site Characterization Investigation, two additional sub-slab vapor samples and three additional indoor air samples were collected. The PCE in the sub slab vapor samples ranged from 2.17 to 54,000 ug/m<sup>3</sup>. The indoor air sample results ranged from 2.17 to 3.25 ug/m<sup>3</sup>. A sample location map and data tables for this investigation is included as Appendix A.

Pilot Test Report and Interim Remedial Measures Work Plan (September 2011) – A pilot test was performed by CA RICH as part of an Interim Remedial Measure (IRM) for this site. The pilot test included a boring with continuous soil samples from the ground surface to the water table in the area of the former dry cleaning machine. The cores were screen with a photoionization meter. Samples collected from 1 to 2 feet, 7 to 8 feet, 12 to 13 feet and 13 to 15 feet were submitted for laboratory analysis. The soil sample from 1 to 2 feet had a PCE detection of 21.6 ug/kg; there were not detections in the deeper soil samples. Four vapor extraction vents were installed in the Laundromat and pilot tested. Soil vapor samples were collected at the beginning and end of the test. The PCE results ranged from 94,990 ug/m<sup>3</sup> at the beginning of the test to 210,335 ug/m<sup>3</sup> at the end of the test. A sample location map and data tables for this investigation is included as Appendix A.

### **1.2.3 Geologic Conditions**

The shallow subsurface geology at the Property is composed primarily of sands with some silt and gravel. Groundwater occurs at approximately 10 to 12 feet below grade and the direction of flow at the Site is southerly towards Randall Bay. According to maps and reports published by the United States Geological Survey, the Property is underlain by unconsolidated Upper Glacial deposits composed of interbedded layers of silt, sand, and gravel. The Upper Glacial formation is followed, in turn, by the Magothy Formation, the basal portion of which is the primary drinking water aquifer for this area. The Magothy formation is followed by the Raritan Clay and then the Lloyd Sand which is underlain by crystalline bedrock.

A geologic section is shown in Figure 2.

A groundwater flow figure is shown in Figure 3.

### **1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS**

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following reports:

Generally, the RI determined that the on-site contamination at the property was limited to soil vapor underneath the former dry cleaning facility and, to a lesser degree, the shallow groundwater directly downgradient of the former dry cleaning facility (units 179A and 181). PCE vapors were also detected below the neighboring building to the west at concentrations of between 100 to 200 ug/m<sup>3</sup>. The PCE concentration in the indoor air of the neighboring building were below 3 ug/m<sup>3</sup>. PCE was detected in the groundwater off-site in samples collected below Smith Street at concentrations of between 5 and 10 ug/l. The soil samples collected for this project did not reveal PCE detections above the NYSDEC Part 375 unrestricted standards.

Below is a summary of site conditions when the RI was performed:

### **1.3.1 Soil**

#### **Investigation of Suspect Leaching Pool**

An investigation of the suspect leaching pool identified during a geophysical survey at the Site was performed on August 28, 2012. A backhoe was mobilized to the Site to expose and uncover the lid to the suspected pool, which was believed to be buried beneath the asphalt pavement at the southwest corner of the Site (see Figure 4). A manually operated pre-cleaned soil auger was then lowered into the leaching pool for the purposes of securing a sample of the bottom sediment. The soil auger was advanced into the top six inches of the bottom sediment within the pool. Analysis included VOCs using USEPA Method 8260 with NYSDEC ASP Category B deliverables.

The buried pool is a storm drain connected to the roof leaders located adjacent to the building. It is eight feet in diameter, 10 feet deep below grade and constructed of precast concrete. The top of the pool is two and a half feet below grade and is finished with new asphalt and a manhole cover set at grade.

The soil collected from the pool was brown sand. There was no discernible odor from the sample and no PID reading was measured from the sample. The water in the pool did not contain evidence of detergent nor did it have a septic odor. A detection of 21.5 ug/kg of PCE was recorded in this sample. This is significantly less than either the NYSDEC Part 375 commercial or protection of groundwater standards for this compound. Low levels of PCE degradation products were also measured, but were again significantly below both the commercial and protection of groundwater standards. The results of the laboratory analysis are summarized on Table 1 and Figure 4.

#### **Sub-Slab Soil Sampling**

As described in Section 1.2.2, sub-slab soil samples were collected during the IRM Pilot Test. Samples collected from 1 to 2 feet, 7 to 8 feet, 12 to 13 feet and 13 to 15 feet were submitted for laboratory analysis. The soil sample from 1 to 2 feet had a PCE detection of 21.6 ug/kg; there were not detections in the deeper soil samples. The results of the laboratory analysis are summarized in Appendix C.

### **1.3.2 Groundwater**

#### **On-Site Groundwater Monitoring Well Installation and Sampling**

A total of three permanent groundwater monitoring wells were installed along the west, southwest and south perimeters of the Site using the direct push methodology (Geoprobe®).

The monitoring wells were designated MW-1, MW-2 and MW-3 and installed to an approximate depth of twenty three feet below the existing surface grade (see Figure 3). The wells were constructed of 2-inch diameter, schedule 40 PVC riser pipe with fifteen feet of pre-packed well screen. The screen zone straddles the water table with approximately 10 feet in the water table and five feet above the water table. The well construction details are illustrated on the boring logs included in Appendix D.

The elevation of the top-of-inner PVC casing of each well was surveyed by a NYS-licensed land surveyor to the nearest 0.01 of a foot mean sea level (MSL). The survey is included on Figure 3. Based on the survey and depth to water measurements, the direction of groundwater flow is to the south-southeast.

Groundwater samples were collected from each of the monitoring wells. Static water levels were collected from each well to determine existing depth to groundwater and to calculate groundwater sample purge volumes. Depth to water measurements were used to generate a Site specific groundwater flow direction map. All groundwater samples were collected directly from the pump discharge tubing into laboratory issued containers and stored in an ice-filled cooler until delivery to an ELAP-approved laboratory. Analysis included VOCs using USEPA Method 8260 with NYSDEC ASP Category B deliverables.

The results indicate that PCE was only detected in one of the monitoring wells, MW-2, at a concentration of 17.7 ug/l. Well MW-2 is located directly downgradient of the on-site storm water/roof drain discussed in the Soil Section above and is in the same location that revealed the highest PCE detection during the Site Characterization study. A summary of the groundwater results are included on Table 2 and Figure 5.

### **Off-Site Groundwater Sampling**

A total of three temporary discreet groundwater sampling locations were installed south of the property along Smith Street using Geoprobe® direct push technology. Each groundwater sampling boring was advanced using a separate borehole for each sample interval. The borings were advanced to the desired depth, and then a four foot screen was deployed from the rods. The groundwater samples were collected from the following intervals; 11-15 feet below grade, 26-30 feet below grade, 41-45 feet below grade, and 56- 60 feet below grade. The samples were designated using the corresponding house address. As shown on Figure 6, the borings were placed in the grassy area right away between the street and sidewalk in front of house numbers 227 and 209 Smith Street. The boring identified as 189 Smith was placed within a grassy island in front of house number 189 Smith Street.

All groundwater samples were collected directly from the discharge of the new polyethylene tubing into laboratory issued containers and stored in an ice-filled cooler until delivery to an ELAP-approved laboratory. Analysis included VOCs using USEPA Method 8260 with NYSDEC ASP Category B deliverables.

The results indicate that PCE was detected in all three groundwater borings; however, only the 209 Smith samples collected from 41-45' and 56-60' exceed the NYS TOGS standards. The 209 Smith samples contained a PCE concentration of 5.6 ug/l at the 41-45' interval and 9.8 ug/l at the 56-60' interval. The groundwater boring located at 209 Smith Street is located directly south (downgradient) of Elks Plaza. A map illustrating the location of the groundwater borings and associated PCE detections is included as Figure 6 and Table 3 summarizes the groundwater results.

### **1.3.3 Soil Vapor**

#### **Interior Sub-Slab Vapor Samples**

As described in Section 1.2.2, sub-slab vapor samples were collected during the Site Characterization Study. PCE was detected at concentrations ranging from 2.17 to 54,000 ug/m<sup>3</sup>. The results are presented in Appendix C.

## **Exterior Soil Vapor Points**

A total of two permanent soil vapor sampling probe points designated “RISV-1” and “RISV-2” were installed on-site. Soil vapor sample point “RISV-1” was installed behind the former dry cleaner building space between the building and near the west property boundary. Soil vapor sample point “RISV-2” was installed off-site in the grass area southwest of the Laundromat at the Smith Harbor Apartments located at 222 Smith Street.

The points were sampled on August 21, 2012. The results of the soil vapor sampling indicated that the concentration of PCE ranged from 3.7 ug/m<sup>3</sup> to 26 ug/m<sup>3</sup> in the two points installed for this project. There are no standards for soil vapor beyond the footprint of a building. PCE was not detected in the ambient air sample. The results are summarized on Table 4 and on Figures 7 and 8.

## **Off-Site Sub-Slab Vapor Sampling**

On August 21, 2012 one permanent sub-slab vapor sampling point identified as SSV-Basement was installed in the basement of the Woodward Children’s Center (201 Merrick Road). A second and third temporary sub-slab vapor sampling point was installed on the ground floor of the building in classrooms B12 and G5 (Figure 7) were also installed on August 21, 2012.

The results for PCE at all three indoor air sample locations were either not detected or below the NYSDOH Matrix 2 No Further Action level for indoor air. The sub-slab vapor at the two classroom locations were either not detected or below the NYSDOH Matrix 2 No Further Action level sub-slab soil vapor for PCE. At the basement location, the sub-slab vapor concentration of PCE was 142 ug/m<sup>3</sup>, which is in the Monitor range. The sample results are summarized on Table 4 and Figures 7 & 8.

Additional air sampling was conducted on February 21, 2013 and February 20, 2014. The permanent sub-slab vapor sampling point SSV-Basement located in the basement of the Woodward Children’s Center (201 Merrick Road) was sampled. A second and third temporary sub-slab vapor sampling point was installed on the ground floor of the building in classrooms B12 and G5 were also installed, near the previous sampling locations

The results for PCE at all three indoor air sample locations were either not detected or below the NYSDOH Matrix 2 No Further Action level for indoor air. The sub-slab vapor

at the two classroom locations were either not detected or below the NYSDOH Matrix 2 No Further Action level in sub-slab soil vapor for PCE.

At the basement location, a sub-slab vapor PCE concentration of 163 ug/m<sup>3</sup> was measured on February 21, 2013 and 309 ug/m<sup>3</sup> was measured on February 20, 2014, both of which are in the NYSDOH Monitor range.

## **1.4 SUMMARY OF REMEDIAL ACTIONS**

The site was remediated in accordance with the NYSDEC-approved Interim Remedial Measure Work Plan dated January 2012 and Addendum #1 dated March 2012.

The following is a summary of the Remedial Actions performed at the site:

1. Installation of a sub-slab venting system consisting of four, 4-inch diameter vents.
2. Installation of duct work to extend the four vents to the roof.
3. Installation and operation of a Soil Vapor Extraction (SVE) system with a blower and carbon treatment to remove PCE vapors from beneath the slab of the building.
4. Conversion of the SVE system to a more energy efficient Sub-Slab Depressurization (SSD) system and continued operation of the system.
5. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Remedial activities were completed at the site in January, 2013

### **1.4.1 Removal of Contaminated Materials from the Site**

No removal of contaminated soil was required.

### **1.4.2 Site-Related Treatment Systems**

A SVE system was installed and operated from June 2012 to January 2013. The SVE system was then converted to a more energy efficient SSD system in January 2013.

#### **Installation of the Sub-Slab Venting System**

The sub-slab venting system design was focused to address the shallow soils below the Laundromat floor. As shown on Figure 9, four, 4-inch diameter vents extend approximately one foot below the bottom of the concrete slab floor. The locations of the four vents are displayed on Figure 9.

A core drill was used to penetrate the concrete floor. A hole was then advanced using a hand auger until the final depth required for the vent was achieved. Four-inch diameter perforated PVC pipe was then lowered into the ground and surrounded with pea gravel. A concrete seal was placed at the top of the vent.

#### **Installation of Duct Work**

During May, 2012, spiral welded sheet metal duct risers were connected to the vents installed in the floor and extend up to the roof. The riser ducts were then connected to a manifold above the roof. A six-inch riser was placed in the center of the manifold and capped for future use. A four-inch PVC pipe was connected to the sheet metal duct manifold and extended to the stairwell at unit 175.

#### **Installation of Moisture Knock-Out Drum, Blower and Carbon Drums**

During June, 2012, a moisture knock-out drum, a Fuji Model VFC40 1 HP regenerative blower and two General Carbon 55-gallon carbon drums were installed stair well at unit 175. The moisture knock-out drum was connected to the 4-inch diameter PVC pipe on the roof using 4-inch diameter sheet metal ducts. The moisture knock-out drum was then connected to the blower, which was, in turn connected to the carbon drums. The carbon drums were then connected to a 4-inch diameter sheet metal vent that extended above the roof. A schematic of the system is included on Figure 9.

#### **Conversion of SVE System to SSD System**

The concentration of PCE in the extracted soil vapor decreased as the operation of the SVE system continued. With approval from the NYSDEC, the SVE system was converted to a SSD system by removing the regenerative blower, moisture knock-out drum and carbon units and connecting a vapor abatement fan to the ducts located on the roof. A Fantech Model HP220 fan was installed and activated in January 2013. The



system includes a vacuum gauge that has a visual alarm that illuminates a red light if the fan fails to operate. The light is located in the office of the Laundromat next to a sign that includes the phone number to call if the light turns on. A drawing illustrating the final configuration of the SSD system is included as Figure 10.

#### **1.4.3 Remaining Contamination**

Remnant PCE soil vapors remain below the slab of the Laundromat. These concentrations do not exceed the DAR-1 emission criteria for this contaminant. Continued operation of the SSD system will ensure the vapors do not enter an inhabited structure.

## **2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN**

### **2.1 INTRODUCTION**

#### **2.1.1 General**

Since remaining contaminated soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

#### **2.1.2 Purpose**

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

## **2.2 ENGINEERING CONTROLS**

### **2.2.1 Engineering Control Systems**

#### **2.2.1.1 Sub-Slab Depressurization System**

Exposure to remnant PCE soil vapor beneath the site is prevented by the operation of a SSD system. This is comprised of four vents that are connected to four vertical ducts. The ducts run from the floor to the roof and are connected to a single riser. A 6-inch diameter Fantech Model HP 220 vapor abatement fan is mounted on top of the riser on the roof. The system includes a vacuum gauge that has a visual alarm that illuminates a red light if the fan fails to operate. The light is located in the office of the Laundromat next to a sign that includes the phone number to call if the light turns on.

Procedures for the inspection and maintenance of this SSD system are provided in the Monitoring Plan included in Section 4 of this SMP. Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

#### **2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems**

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

##### **2.2.2.1 Sub-Slab Depressurization System (SSDS)]**

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a request to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

Operation of the SSD system will be terminated when the following are demonstrated in accordance with Indoor Air Matrix 2 of the NYSDOH's 2006 Guidance document:

- Indoor air concentrations of PCE in the Laundromat is less than 3 ug/m<sup>3</sup>; and,
- Sub-slab vapor concentration of PCE below the Laundromat is less than 100 ug/m<sup>3</sup>.

This shall be demonstrated during the winter heating season, to represent the worst case scenario, and after the SSD system has been turned off for a period of 30 days.

## **2.3 INSTITUTIONAL CONTROLS**

A series of Institutional Controls is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to commercial uses only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater and soil vapor and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for commercial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted, restricted residential or residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

### **2.3.1 Soil Vapor Intrusion Evaluation**

Prior to the construction of any enclosed structures located over areas that contain remaining contamination and the potential for soil vapor intrusion (SVI) has been identified, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York”. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. Validated SVI data will be transmitted to the property owner within 30 days of validation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

## **2.4 INSPECTIONS AND NOTIFICATIONS**

### **2.4.1 Inspections**

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and

- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

#### **2.4.2 Notifications**

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375, and/or Environmental Conservation Law.
- Notice within 48-hours of any damage or defect to the foundation, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective

purchaser has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

## **2.5 CONTINGENCY PLAN**

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

### **2.5.1 Emergency Telephone Numbers**

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to CA Rich Consultants, Inc. These emergency contact lists must be maintained in an easily accessible location at the site.

#### **Emergency Contact Numbers**

Medical, Fire, and Police:	911, Fire-516-378-0400, Police-516-379-0047
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362



### **Contact Numbers**

CA Rich Consultants, Inc.	(516) 576-8844
Hospital	(516) 632-3000

\* Note: Contact numbers subject to change and should be updated as necessary

### **2.5.2 Map and Directions to Nearest Health Facility**

Site Location: Elks Plaza

Nearest Hospital Name: South Nassau Community Hospital

Hospital Location: 1 Healthy Way, Oceanside, NY 11572

Hospital Telephone: (516) 632-3000

Directions to the Hospital:

1. Drive west on Merrick Road for 2.4 miles
2. Turn left on Oceanside Road.

Total Distance: 2.5 miles

Total Estimated Time: 10 minutes

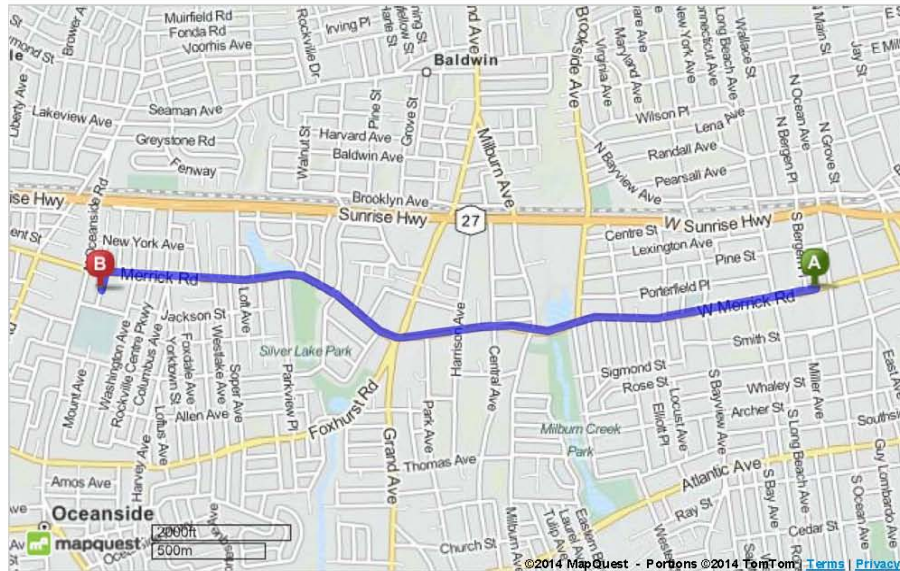
## Map Showing Route from the site to the Hospital:

Driving Directions from 157 W Merrick Rd, Freeport, New York 11520 to South Nassau ... Page 1 of 1



Trip to:  
**South Nassau Communities  
Hospital**  
**1 Healthy Way**  
Oceanside, NY 11572  
(516) 632-3000  
2.39 miles / 6 minutes

Notes



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### **2.5.3 Response Procedures**

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan.

## **3.0 SITE MONITORING PLAN**

### **3.1 INTRODUCTION**

#### **3.1.1 General**

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

#### **3.1.2 Purpose and Schedule**

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCO's for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;

- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Annual monitoring of the performance of the remedy and overall reduction in contamination on-site and off-site will be conducted for the first five years. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in air, soil, and/or groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in tabulation below and outlined in detail in Sections 3.2 and 3.3 below.

#### **Monitoring/Inspection Schedule**

<b>Monitoring Program</b>	<b>Frequency*</b>	<b>Matrix</b>	<b>Analysis</b>
3.3.1	Annual	Groundwater	VOCs
3.3.2	Annual	Soil Vapor and Indoor Air	VOCs
3.3.3	Once	Soil	TCL VOCs, SVOCs, PCBs, Pesticides & TAL Metals

\* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

### **3.2 COVER SYSTEM MONITORING**

Monitoring of a cover system is not required.

### 3.3 MEDIA MONITORING PROGRAM

#### 3.3.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The network of on-site wells has been designed to monitor the shallow groundwater both upgradient and downgradient of the site. A third side gradient well is installed to accurately measure the direction of groundwater flow. A drawing illustrating the locations of the wells is included as Figure 3. The direction of groundwater flow is to the south and the depth to water is approximately 12 to 13 feet below grade. The only well that displayed detections of PCE was the downgradient well, MW-2, with a detection of 17.7 ug/l. The boring logs and construction diagrams for the wells are included in Appendix E.

<u>Well #</u>	<u>Screen Interval</u>	<u>Analysis</u>	<u>Frequency</u>
MW-1	8 to 23 feet	VOCs by method 8260C	Annual
MW-2	8 to 23 feet	VOCs by method 8260C	Annual
MW-3	8 to 23 feet	VOCs by method 8260C	Annual

Each of the wells will be sample annually during the winter season and concurrently with the indoor air and sub-slab vapor sampling program. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

##### 3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix E. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

Groundwater samples will be collected from each of the monitoring wells. Static water levels will be collected from each well to determine existing depth to groundwater and to calculate groundwater sample purge volumes. Depth to water measurements will also be used to generate a Site specific groundwater flow direction map. The wells will be purged using an electrically operated submersible pump. The pump will be connected to dedicated polyethylene tubing. The well will then be purged of a minimum of three well casing volumes with the collection of conventional field parameters of pH, conductivity, turbidity (< 50 NTUs), and temperature until measurements have stabilized. All purge water will be contained in DOT-approved 55-gallon drums temporarily stored at the Site pending waste characterization sample results for proper disposal.

All groundwater samples will be collected directly from the pump discharge tubing into laboratory issued containers and stored in an ice-filled cooler until delivery to an ELAP-approved laboratory. Analysis will include VOCs using USEPA Method 8260C with NYSDEC ASP Category B deliverables. At this time, we anticipate Accutest Laboratories (NELAP-certification # 10983) will be conducting all of the laboratory analysis. Additional field and laboratory QA/QC protocol (a field duplicate, a trip blank, a field blank, a matrix spike and a matrix spike duplicate) is included in the attached Quality Assurance Project Plan (Appendix F).

#### **3.3.1.2 Monitoring Well Repairs, Replacement And Decommissioning**

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of

NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

### **3.3.2 Sub-Slab Vapor and Indoor Air Monitoring**

One permanent sub-slab vapor sampling point identified as SSV-Basement was installed in the basement of the Woodward Children's Center (201 Merrick Road). Two additional temporary sub-slab vapor locations are located in classrooms B-12 and G-5. In the basement, new sample tubing will be connected to the existing point. At the classroom locations, a small diameter hole will be drilled in the floor and a temporary sub-slab vapor point consisting of 1/4-inch diameter stainless steel tubing will be set at least 2-inches below the base of the concrete slab and sealed using either bees wax, bentonite or non-VOC putty. An inverted container will then be placed over the points and the interior of the container will be enriched with Helium tracer gas. Prior to sampling, the volume of the tubing and the sampling point will be purged using a portable sampling pump. The purge volume from the sampling tube will be screened for the tracer gas using a Gowmac® Model 21-250 or equivalent gas leak detector. The Helium readings will be recorded prior to sampling. A reading of below the 10% level outlined in the NYSDOH guidance manual will be used to confirm that the seal around the point is still intact. The sample will then be collected by placing a section of new plastic tubing from the sub-slab vapor point to the regulator of a SUMMA Canister.

Three indoor air samples will also be collected. The samples will be collected from the basement shop room, from classrooms B12 and G5. These will also be collected using SUMMA canisters.

The canisters will be order from the laboratory with regulators calibrated to fill over a period of approximately 8 hours. In addition, a Product Inventory will be conducted as part of the sampling procedures.

<u>Location #</u>	<u>Analysis</u>	<u>Frequency</u>
SS-Basement	VOCs by method TO-15	Annual

SS-B-12	VOCs by method TO-15	Annual
SS-G-5	VOCs by method TO-15	Annual
IA-Baseament	VOCs by method TO-15	Annual
IA-B-12	VOCs by method TO-15	Annual
IA-G-5	VOCs by method TO-15	Annual

A sample location map is included on Figure 7 and 8. A construction log of the sub-slab vapor point is included in Appendix D.

### 3.3.3 SOIL SAMPLING

During the first annual monitoring event, one soil sample (plus the associated QA/QC samples) will be collected from below the grass covered area adjoining the rear parking lot behind the Laundromat. A sample location map is included on Figure 11. The sample will be collected using a pre-cleaned sampling trowel and sterile wooden tongue depressors which will be used to place the soil into laboratory-issued sample bottles. This sample will be analyzed for the complete list of TCL VOCs, SVOCs, PCBs, Pesticides and TAL metals. The results will be included in the Periodic Review Report.

<u>Location</u>	<u>Analysis</u>	<u>Frequency</u>
Soil - 1	TCL VOCs, SVOCs, PCBs, Pesticides & TAL Metals	Once

### 3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. The inspection results will be compiled on the Period Review Report and will include sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;



- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

### **3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL**

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the site (Appendix F). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC ASP requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;

- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

### **3.6 MONITORING REPORTING REQUIREMENTS**

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table tabulation below.

### **Schedule of Monitoring/Inspection Reports**

<b>Task</b>	<b>Reporting Frequency*</b>
Groundwater	Annually
Indoor Air and Sub-Slab Vapor	Annually
Soil Sampling	Once

\* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

## **4.0 OPERATION AND MAINTENANCE PLAN**

### **4.1 INTRODUCTION**

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the SSD system.

### **4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE**

#### **4.2.1 Sub-Slab Depressurization System**

4.2.1.1 Operation and Maintenance - The Fantec fan described in Section 2.2.1.1 does not require any maintenance. It has no filters and does not require lubrication. If the fan should fail to work in the future, it should be replaced by an electrician with a similar make and model fan. Literature regarding the fan is included in Appendix G.

4.2.1.2 System Start-Up and Testing – A start-up test was performed when the system was installed. No additional start-up tests are required. There is a vacuum gauge installed in the office of the Laundromat that has a visual low vacuum alarm. The gauge should register approximately 2.0 to 2.25 inches of water. If the low vacuum alarm light is illuminated, the tenant should call the number on the sign next to the gauge for service.

#### **4.3.1 SSD System Monitoring Schedule**

Based on the manufactures literature, there are no maintenance requirements for the SSD fan. It has no filters and does not require lubrication. The system includes a vacuum gauge with a visual low vacuum alarm. If the fan fails to operate, a red light in the office of the Laundromat will illuminate. A sign with the phone number to call for service is posted next to the vacuum gauge and alarm.

The vacuum gauge, fan and duct work will be inspected on an annual basis to coincide with the soil vapor and groundwater monitoring.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSD system are specified later in this Plan.

#### **4.3.2 SSD System General Equipment Monitoring**

A visual inspection of the complete system will be conducted during the monitoring event. SSD system components to be monitored include, but are not limited to, the vacuum gauge/alarm, fan and duct work

If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSD system restarted.

#### **4.3.3 SSD System Monitoring Devices and Alarms**

The SSD system has a warning device (a visual alarm) to indicate that the system is not operating properly. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance

Plan, and the SSD system restarted. Operational problems will be noted in the subsequent Periodic Review Report.

#### **4.3.4 SSD System Termination Sampling Protocol**

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a request to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

Operation of the SSD system will be terminated when the following are demonstrated in accordance with Indoor Air Matrix 2 of the NYSDOH's 2006 Guidance document:

- Indoor air concentrations of PCE in the Laundromat is less than 3 ug/m<sup>3</sup>; and,
- Sub-slab vapor concentration of PCE below the Laundromat is less than 100 ug/m<sup>3</sup>.

This shall be demonstrated during the winter heating season, to represent the worst case scenario, and after the SSD system has been turned off for a period of 30 days.

One temporary sub-slab vapor sampling point will be installed in the central area of the Laundromat. A small diameter hole will be drilled into the floor. The sampling point will consist of a ¼-inch diameter stainless steel tube placed approximately 2-inches below the bottom of the slab and sealed with bees wax, bentonite or a non-voc putty. An inverted container will then be placed over the point and the interior of the container will be enriched with Helium tracer gas. Prior to sampling, the volume of the tubing and the sampling point will be purged using a portable sampling pump. The purge volume from the sampling tube will be screened for the tracer gas using a Gowmac® Model 21-250 or equivalent gas leak detector. The Helium readings will be recorded prior to sampling. A reading of below the 10% level outlined in the NYSDOH guidance manual will be used to confirm that the seal around the point is still intact. The sample will then be collected by placing a section of new plastic tubing from the sub-slab vapor point to the regulator of a SUMMA Canister.

One indoor air samples will also be collected. The sample will be collected from the central area of the Laundromat. This will also be collected using a SUMMA canister.

The canisters will be order from the laboratory with regulators calibrated to fill over a period of approximately 8 hours. In addition, a Product Inventory will be conducted as part of the sampling procedures.

<u>Location #</u>	<u>Analysis</u>	<u>Frequency</u>
SS-181	VOCs by method TO-15	As needed
IA-181	VOCs by method TO-15	As needed

#### **4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS**

All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

##### **4.4.1 Routine and Maintenance Reports**

Based on the manufactures literature, there are no maintenance requirements for the SSD fan. It has no filters and does not require lubrication. If the fan fails to operate, it will be removed and replaced with a similar make and model number fan. The replacement will be reported to the NYSDEC.

##### **4.4.2 Non-Routine Maintenance Reports**

During the annual inspection, the duct work will be inspected for leaks. If a leak is observed, it will be reported to the NYSDEC and repaired.

## **5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS**

### **5.1 SITE INSPECTIONS**

#### **5.1.1 Inspection Frequency**

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of the SSD system has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

#### **5.1.2 Inspection Reports**

A summary of the annual system inspection will be provided in electronic format in the Periodic Review Report.

### **5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS**

After the last inspection of the reporting period, a Qualified Environmental Professional or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;

- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Lois Reisman, of Galaxy Management, Inc., 28 Campbell Drive, Dix Hills, NY 11746, am certifying as Owner’s Designated Site Representative [I have been authorized and designated by all site owners to sign this certification] for the site.

The signed certification will be included in the Periodic Review Report described below.

- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.



### 5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year after the SMP is approved by the NYSDEC. Monitoring will begin during the 2014/2015 winter heating season. The PRR will be submitted after the laboratory data is received and compiled. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;

- The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
- Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
- Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
- The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

#### **5.4 CORRECTIVE MEASURES PLAN**

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

## REFERENCES

1. Impact Environmental, 2006, Phase I Environmental Site Assessment
2. Associated Environmental Services, Ltd., December 2006, Phase II Subsurface Investigation, 157-189 Merrick Road, Freeport, NY
3. Preferred Environmental Services, September 2008, Records Search Report, Elks Plaza LLC – Site # 130193, 157-189 West Merrick Road, Freeport, NY
4. Preferred Environmental Services, March 2010, Site Characterization Report, Elks Plaza LLC - Site # 1-30-193, 157 -189 West Merrick Road, Freeport, NY.
5. Preferred Environmental Services, June 2010, Supplemental Soil Vapor Investigation, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.
6. CA Rich Consultants, Inc., September 2011, Pilot Test Report and Interim Remedial Measures Work Plan, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.
7. CA Rich Consultants, Inc., September 2012, Sub-Slab Depressurization System Construction Completion Report, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.
8. CA Rich Consultants, Inc., January 2014 , Remedial Investigation Report, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.

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## TABLES

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**Table 1**  
**Validated Volatile Organic Compounds in Roof Drain Soil Samples**  
**Elks Plaza**  
**Freeport, NY**

Sample ID Matrix Date Sampled	Pool #1 Soil 8/28/2012	Pool XX Soil 8/28/2012	Field Blank Aqueous 8/28/2012	Trip Blank Aqueous 8/28/2012	*NYCRR Part 375 Commercial	**NYCRR Part 375 Protection of GW
<b>Volatile Organic Compounds</b>						
<b>Units</b>	<u>ug/kg</u>	<u>ug/kg</u>	<u>ug/l</u>	<u>ug/l</u>	<u>ug/kg</u>	<u>ug/l</u>
Acetone	19.1 J	14.9 J	ND	ND	500,000	50
Benzene	ND UJ	0.39 J	ND	ND	44,000	60
Bromochloromethane	ND	ND	ND	ND	NS	NS
Bromodichloromethane	ND	ND	ND	ND	NS	NS
Bromoform	ND	ND	ND	ND	NS	NS
Bromomethane	R	R	ND	ND	NS	NS
2-Butanone (MEK)	ND	ND	R	R	NS	NS
Carbon disulfide	ND	ND	ND	ND	NS	NS
Carbon tetrachloride	ND	ND	ND	ND	22,000	760
Chlorobenzene	ND UJ	ND	ND	ND	500,000	1,100
Chloroethane	ND	ND	ND	ND	NS	NS
Chloroform	ND	ND	ND	ND	350,000	370
Chloromethane	ND	ND	ND	ND	NS	NS
Cyclohexane	ND	ND	ND	ND	NS	NS
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	NS	NS
Dibromochloromethane	ND	ND	ND	ND	NS	NS
1,2-Dibromoethane	ND	ND	ND	ND	NS	NS
1,2-Dichlorobenzene	ND UJ	ND UJ	ND	ND	500,000	1,100
1,3-Dichlorobenzene	ND UJ	ND UJ	ND	ND	280,000	2,400
1,4-Dichlorobenzene	ND UJ	ND UJ	ND	ND	130,000	1,800
Dichlorodifluoromethane	ND	ND	ND	ND	NS	NS
1,1-Dichloroethane	ND	ND	ND	ND	240,000	270
1,2-Dichloroethane	ND	ND	ND	ND	30,000	20
1,1-Dichloroethene	ND	ND	ND	ND	500,000	330
cis-1,2-Dichloroethene	32.4 J	14.7 J	ND	ND	500,000	250
trans-1,2-Dichloroethene	2.8 J	1.8 J	ND	ND	500,000	190
1,2-Dichloropropane	ND	ND	ND	ND	NS	NS
cis-1,3-Dichloropropene	ND	ND	ND	ND	NS	NS
trans-1,3-Dichloropropene	ND	ND	ND	ND	NS	NS
1,4-Dioxane	ND	ND	ND	ND	130,000	100
Ethylbenzene	ND	ND	ND	ND	390,000	1,000
Freon 113	ND	ND	ND	ND	NS	NS
2-Hexanone	ND	ND	ND	ND	NS	NS
Isopropylbenzene	1.6 J	ND UJ	ND	ND	NS	NS
Methyl Acetate	19.3 J	36.1 J	ND	ND	NS	NS
Methylcyclohexane	ND	ND	ND	ND	NS	NS
Methyl Tert Butyl Ether	ND	ND	ND	ND	500,000	930
4-Methyl-2-pentanone(MIBK)	R	R	ND	ND	NS	NS
Methylene chloride	ND	ND	ND	ND	500,000	50
Styrene	ND UJ	ND	ND	ND	NS	NS
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	NS	NS
Tetrachloroethene	21.5	17.0	ND	ND	150,000	1,300
Toluene	24.9 J	12.4 J	ND	ND	500,000	700
1,2,3-Trichlorobenzene	ND UJ	ND UJ	ND	ND	NS	NS
1,2,4-Trichlorobenzene	ND UJ	ND UJ	ND	ND	NS	NS
1,1,1-Trichloroethane	ND	ND	ND	ND	NS	NS
1,1,2-Trichloroethane	ND	ND	ND	ND	NS	NS
Trichloroethene	8.0	7.2	ND	ND	200,000	470
Trichlorofluoromethane	ND	ND	ND	ND	NS	NS
Vinyl chloride	14.9 J	3.3 J	ND	ND	13,000	20
m,p-Xylene	ND UJ	ND	ND	ND	NS	NS
o-Xylene	ND UJ	ND	ND	ND	NS	NS
Xylene (total)	ND UJ	ND	ND	ND	500,000	1,600

Notes: ug/kg= micrograms per kilogram or parts per billion  
J- Analyte detected below quantitation limits. ug/L= micrograms per liter or parts per billion  
ND- Not detected at or above laboratory detection limits. \*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6.8(b): Commercial Use  
NS- No standard for specific compound \*\*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6.8(b): Protection of Groundwater  
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.  
R - The sample results are rejected due to deficiencies in the ability to analyze the sample Pool XX is a duplicate of Pool #1  
and meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Table 2**  
**Validated Volatile Organic Compounds in Groundwater Samples**  
**Elks Plaza**  
**Freeport, NY**

Sample ID Matrix Date Sampled Units	*NYS TOGS Groundwater Standards ug/l	MW-1 Ground Water 11/19/2012 ug/l	MW-2 Ground Water 11/19/2012 ug/l	MW-3 Ground Water 11/19/2012 ug/l	MW-XX Ground Water 11/19/2012 ug/l	PURGE WATER Ground Water 11/19/2012 ug/l	11/19 FIELD Field Blank Water 11/19/2012 ug/l	TRIP BLANK Trip Blank Water 11/19/2012 ug/l
Volatiles (SW846 8260B)								
Acetone	NS	R	R	R	R	R	R	R
Benzene	1	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	5	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND	ND
Bromomethane	5	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	NS	R	R	R	R	R	R	R
Carbon disulfide	60	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	NS	ND	ND	ND	ND	ND	ND	ND
1,1-Dibromo-3-chloropropane	0.04	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.0006	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	6.7	0.68	J 6.5	0.99	J ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	NS	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	ND	ND	ND	ND	ND	ND
Freon 113	5	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	NS	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	NS	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	NS	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether	10	ND	ND	ND	ND	ND	ND	ND
Methyl-2-pentanone(MIBK)	NS	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	5	ND	ND	ND	ND	ND	ND	ND
Styrene	5	ND	ND	ND	ND	ND	ND	ND
1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	17.5	ND	17.7	2.1	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	9.9	0.41	J 10.2	1.4	ND	ND
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	5	ND	ND	ND	ND	ND	ND	ND
o-Xylene	5	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	5	0.32	J ND	ND	ND	ND	ND	ND

**Notes:**

J- Analyte detected below quantitation limits.

ND- Not detected at or above laboratory detection limits.

NS- No standard for specific compound

\*NYSDEC Technical and Operational Guidance Series (1.1.1)

Ambient water Quality Standards and Guidance Values

and Groundwater Effluent Limitations June 1998

- Value Exceeds Standard - Monitoring Required

MW-XX is a duplicate of MW-2

ug/l= micrograms per liter or parts per billion

R - The sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Table 3**  
**Volatile Organic Compounds in Discreet Geoprobe Groundwater Samples**  
**Elks Plaza**  
**Freeport, NY**

Sample ID Depth Matrix Date Sampled	189 Smith 11-15 ft Groundwater 8/9/2013 ug/l	189 Smith 26-30 ft Groundwater 8/9/2013 ug/l	189 Smith 41-45 ft Groundwater 8/9/2013 ug/l	189 Smith 56-60 ft Groundwater 8/9/2013 ug/l	209 Smith 11-15 ft Groundwater 8/8/2013 ug/l	209 Smith 26-30 ft Groundwater 8/8/2013 ug/l	209 Smith 41-45 ft Groundwater 8/8/2013 ug/l	209 Smith 56-60 ft Groundwater 8/8/2013 ug/l	227 Smith 11-15 ft Groundwater 8/8/2013 ug/l	227 Smith 26-30 ft Groundwater 8/8/2013 ug/l	227 Smith 41-45 ft Groundwater 8/8/2013 ug/l	227 Smith 56-60 ft Groundwater 8/8/2013 ug/l	MW-XX Groundwater 8/8/2013 ug/l	Field Blank 8/9 Field Blank Water 8/9/2013 ug/l	TRIP BLANK Trip Blank Water 8/9/2013 ug/l	*NYS TOGS Groundwater Standards ug/l
Volatiles (SW846 8260B)																
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Carbon disulfide	ND	ND	0.21 J	ND	0.27 J	ND	0.22 J	0.20 J	ND	0.23 J	0.24 J	0.22 J	0.22 J	ND	ND	60
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroform	ND	ND	ND	0.22 J	ND	ND	ND	0.27 J	ND	ND	ND	ND	ND	ND	ND	7
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006
1,2-Dichlorobenzene	ND	ND	0.37 J	0.22 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.48 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Methyl Tert Butyl Ether	ND	ND	0.58 J	0.67 J	ND	ND	0.46 J	0.46 J	ND	ND	0.36 J	0.46 J	ND	ND	ND	10
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	ND	0.51 J	0.93 J	0.67 J	1.5 ND		5.6	9.8	ND	ND	1.6	3.1	1.4	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Trichloroethene	ND	ND	ND	ND	ND	0.41 J	0.89 J	ND	ND	ND	ND	ND	ND	ND	ND	5
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

**Notes:**

J- Analyte detected below quantitation limits.

ND- Not detected at or above laboratory detection limits.

NS- No standard for specific compound

\*NYSDEC Technical and Operational Guidance Series (1.1.1)

Ambient water Quality Standards and Guidance Values

and Groundwater Effluent Limitations June 1998

**Bold and Boxed Indicates Value Exceeds Standard**

MW-XX is a duplicate of 209 Smith (11-15')

ug/l= micrograms per liter or parts per billion





Freeport, NY								
Sample ID	B-12	G-5	Basement	*NYSDOH 2006	B-12	G-5	Basement	*NYSDOH 2006
Matrix	Indoor Air	Indoor Air	Indoor Air	Matrix1/Matrix 2	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Matrix1/Matrix 2
Date Sampled	8/29/2012	8/29/2012	8/29/2012	Indoor Air	8/29/2012	8/29/2012	8/29/2012	Sub-Slab Vapor
Volatile Organic Compounds								
Units	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>
Acetone	26.6	16	15	NS	ND	26.6	12	NS
1,3-Butadiene	ND	ND	ND	NS	ND	ND	ND	NS
Benzene	0.45 J	0.51 J	0.45 J	NS	5.1	2.0 J	3.1	NS
Bromodichloromethane	ND	ND	ND	NS	ND	ND	ND	NS
Bromoform	ND	ND	ND	NS	ND	ND	ND	NS
Bromomethane	ND	ND	ND	NS	ND	ND	ND	NS
Bromoethene	ND	ND	ND	NS	ND	ND	ND	NS
Benzyl Chloride	ND	ND	ND	NS	ND	ND	ND	NS
Carbon disulfide	ND	ND	ND	NS	ND	1.5 J	ND	NS
Chlorobenzene	ND	ND	ND	NS	ND	ND	ND	NS
Chloroethane	ND	ND	ND	NS	ND	ND	ND	NS
Chloroform	ND	ND	ND	NS	ND	ND	ND	NS
Chloromethane	1.2	1.2	1.3	NS	ND	ND	ND	NS
3-Chloropropene	ND	ND	ND	NS	ND	ND	ND	NS
2-Chlortoluene	ND	ND	ND	NS	ND	ND	ND	NS
Carbon tetrachloride	ND	ND	ND	< 0.25	ND	ND	ND	< 5
Cyclohexane	ND	ND	ND	NS	141	ND	ND	NS
1,1-Dichloroethane	ND	ND	ND	NS	ND	ND	ND	NS
1,1-Dichloroethylene	ND	ND	ND	< 3	ND	ND	ND	< 100
1,2-Dibromoethane	ND	ND	ND	NS	ND	ND	ND	NS
1,2-Dichloroethane	ND	ND	ND	NS	ND	ND	ND	NS
1,2-Dichloropropane	ND	ND	ND	NS	ND	ND	ND	NS
1,4-Dioxane	ND	ND	ND	NS	ND	ND	ND	NS
Dichlorodifluoromethane	2.5	2.6	2.6	NS	2.3 J	2.1 J	2.4 J	NS
Dibromochloromethane	ND	ND	ND	NS	ND	ND	ND	NS
trans-1,2-Dichloroethylene	ND	ND	ND	NS	ND	ND	ND	NS
cis-1,2-Dichloroethylene	ND	ND	ND	< 3	ND	ND	ND	<100
cis-1,3-Dichloropropene	ND	ND	ND	NS	ND	ND	ND	NS
m-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	NS
o-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	NS
p-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	NS
trans-1,3-Dichloropropene	ND	ND	ND	NS	ND	ND	ND	NS
Ethanol	46.5	51.8	121 E	NS	8.5	18	25.8	NS
Ethylbenzene	0.61 J	ND	ND	NS	5.2	5.2	7.4	NS
Ethyl acetate	3.1	2.4	1.9	NS	5.4	12	2.7 J	NS
4-Ethyltoluene	2.3	1.2	0.54 J	NS	3.1 J	2.3 J	2.4 J	NS
Freon 113	ND	ND	ND	NS	ND	ND	ND	NS
Freon 114	ND	ND	ND	NS	ND	ND	ND	NS
Heptane	ND	ND	ND	NS	8.2	ND	ND	NS
Hexachlorobutadiene	ND	ND	ND	NS	ND	ND	ND	NS
Hexane	0.46 J	0.46 J	ND	NS	94.5	2.8	1.4 J	NS
2-Hexanone	ND	ND	ND	NS	ND	ND	ND	NS
Isopropyl Alcohol	36.4	23	13	NS	2.9	7.4	2.7	NS
Methylene chloride	ND	ND	4.2	NS	ND	ND	2.9	NS
Methyl ethyl ketone	1.8	1.2	0.91	NS	ND	19	10	NS
Methyl Isobutyl Ketone	ND	ND	ND	NS	ND	1.6 J	ND	NS
Methyl Tert Butyl Ether	ND	ND	ND	NS	ND	ND	ND	NS
Methylmethacrylate	ND	ND	ND	NS	ND	ND	ND	NS
Propylene	ND	ND	ND	NS	ND	ND	ND	NS
Styrene	ND	ND	ND	NS	ND	1.7 J	2.0 J	NS
1,1,1-Trichloroethane	ND	ND	ND	< 3	ND	ND	ND	< 100
1,1,2,2-Tetrachloroethane	ND	ND	ND	NS	ND	ND	ND	NS
1,1,2-Trichloroethane	ND	ND	ND	NS	ND	ND	ND	NS
1,2,4-Trichlorobenzene	ND	ND	ND	NS	ND	ND	ND	NS
1,2,4-Trimethylbenzene	12	6.9	2.6	NS	11	8.8	8.4	

## Notes:

J- Analyte detected below quantitation limits.

ND- Not detected at or above laboratory detection limits.

NS- No standard for specific compound

a -Result is from run #2

ug/m<sup>3</sup> - micrograms per cubic meters

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

\*NYSDOH guidance for evaluating Soil Vapor in the State of New York Oct. 2006 Matrix 1 & 2 levels for "No Further Action"

- Value Exceeds Standard - Monitoring Required

TABLE 5

375-6.8

**Soil cleanup objective tables.**

(a) Unrestricted use soil cleanup objectives.

**Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives**

Contaminant	CAS Number	Unrestricted Use
<b>Metals</b>		
Arsenic	7440-38-2	13 <sup>c</sup>
Barium	7440-39-3	350 <sup>c</sup>
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 <sup>c</sup>
Chromium, hexavalent <sup>e</sup>	18540-29-9	1 <sup>b</sup>
Chromium, trivalent <sup>e</sup>	16065-83-1	30 <sup>c</sup>
Copper	7440-50-8	50
Total Cyanide <sup>e, f</sup>		27
Lead	7439-92-1	63 <sup>c</sup>
Manganese	7439-96-5	1600 <sup>c</sup>
Total Mercury		0.18 <sup>c</sup>
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9 <sup>c</sup>
Silver	7440-22-4	2
Zinc	7440-66-6	109 <sup>c</sup>
<b>PCBs/Pesticides</b>		
2,4,5-TP Acid (Silvex) <sup>f</sup>	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 <sup>b</sup>
4,4'-DDT	50-29-3	0.0033 <sup>b</sup>
4,4'-DDD	72-54-8	0.0033 <sup>b</sup>
Aldrin	309-00-2	0.005 <sup>c</sup>
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

**Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives**

<b>Contaminant</b>	<b>CAS Number</b>	<b>Unrestricted Use</b>
delta-BHC <sup>g</sup>	319-86-8	0.04
Dibenzofuran <sup>f</sup>	132-64-9	7
Dieldrin	60-57-1	0.005 <sup>c</sup>
Endosulfan I <sup>d, f</sup>	959-98-8	2.4
Endosulfan II <sup>d, f</sup>	33213-65-9	2.4
Endosulfan sulfate <sup>d, f</sup>	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
<b>Semivolatile organic compounds</b>		
Acenaphthene	83-32-9	20
Acenaphthylene <sup>f</sup>	208-96-8	100 <sup>a</sup>
Anthracene <sup>f</sup>	120-12-7	100 <sup>a</sup>
Benz(a)anthracene <sup>f</sup>	56-55-3	1 <sup>c</sup>
Benzo(a)pyrene	50-32-8	1 <sup>c</sup>
Benzo(b)fluoranthene <sup>f</sup>	205-99-2	1 <sup>c</sup>
Benzo(g,h,i)perylene <sup>f</sup>	191-24-2	100
Benzo(k)fluoranthene <sup>f</sup>	207-08-9	0.8 <sup>c</sup>
Chrysene <sup>f</sup>	218-01-9	1 <sup>c</sup>
Dibenz(a,h)anthracene <sup>f</sup>	53-70-3	0.33 <sup>b</sup>
Fluoranthene <sup>f</sup>	206-44-0	100 <sup>a</sup>
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene <sup>f</sup>	193-39-5	0.5 <sup>c</sup>
m-Cresol <sup>f</sup>	108-39-4	0.33 <sup>b</sup>
Naphthalene <sup>f</sup>	91-20-3	12
o-Cresol <sup>f</sup>	95-48-7	0.33 <sup>b</sup>

**Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives**

<b>Contaminant</b>	<b>CAS Number</b>	<b>Unrestricted Use</b>
p-Cresol <sup>f</sup>	106-44-5	0.33 <sup>b</sup>
Pentachlorophenol	87-86-5	0.8 <sup>b</sup>
Phenanthrene <sup>f</sup>	85-01-8	100
Phenol	108-95-2	0.33 <sup>b</sup>
Pyrene <sup>f</sup>	129-00-0	100
<b>Volatile organic compounds</b>		
1,1,1-Trichloroethane <sup>f</sup>	71-55-6	0.68
1,1-Dichloroethane <sup>f</sup>	75-34-3	0.27
1,1-Dichloroethene <sup>f</sup>	75-35-4	0.33
1,2-Dichlorobenzene <sup>f</sup>	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 <sup>c</sup>
cis -1,2-Dichloroethene <sup>f</sup>	156-59-2	0.25
trans-1,2-Dichloroethene <sup>f</sup>	156-60-5	0.19
1,3-Dichlorobenzene <sup>f</sup>	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 <sup>b</sup>
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene <sup>f</sup>	104-51-8	12
Carbon tetrachloride <sup>f</sup>	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene <sup>f</sup>	100-41-4	1
Hexachlorobenzene <sup>f</sup>	118-74-1	0.33 <sup>b</sup>
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether <sup>f</sup>	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

**Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives**

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene <sup>f</sup>	103-65-1	3.9
sec-Butylbenzene <sup>f</sup>	135-98-8	11
tert-Butylbenzene <sup>f</sup>	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene <sup>f</sup>	95-63-6	3.6
1,3,5-Trimethylbenzene <sup>f</sup>	108-67-8	8.4
Vinyl chloride <sup>f</sup>	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

#### Footnotes

<sup>a</sup> The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See [Technical Support Document \(TSD\)](#), section 9.3.

<sup>b</sup> For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

<sup>c</sup> For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

<sup>d</sup> SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

<sup>e</sup> The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

<sup>f</sup> Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with “NS”. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

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## FIGURES

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*Adapted from Google Earth 2012*



**CA RICH CONSULTANTS, INC.**  
17 Dupont Street,  
Plainview, NY 11803

**TITLE:**

**SITE PLAN WITH PROPERTY  
BOUNDARIES**

**DATE:**

**5/16/2014**

**SCALE:**

**Not to scale**

**FIGURE:**

**1**

**DRAWING:**

**Elks Plaza, LLC  
157-189 W. Merrick Road  
Freeport, New York  
Site No. 130193**

**DRAWN BY:**

**JTC**

**APPR. BY:**

**EAW**

North

South

ELKS PLAZA

SITE

MW-1

MW-2

Fence

Upper Glacial Sand and Gravel

Direction of groundwater flow



CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

TITLE: Geologic Cross-Section		DATE: 5/16/2014
FIGURE: 2		SCALE: As Shown
DRAWING NO: 2013-A1		DRAWN BY: J.T.C.
		APPR. BY: E.A.W.



Groundwater Flow

6.21 MW-1

6.20

6.10

Former dry cleaner machine

Laundromat

6.02 MW-2

6.00

# LEGEND

Sub slab vent

Units have basement, basement unit is # 165

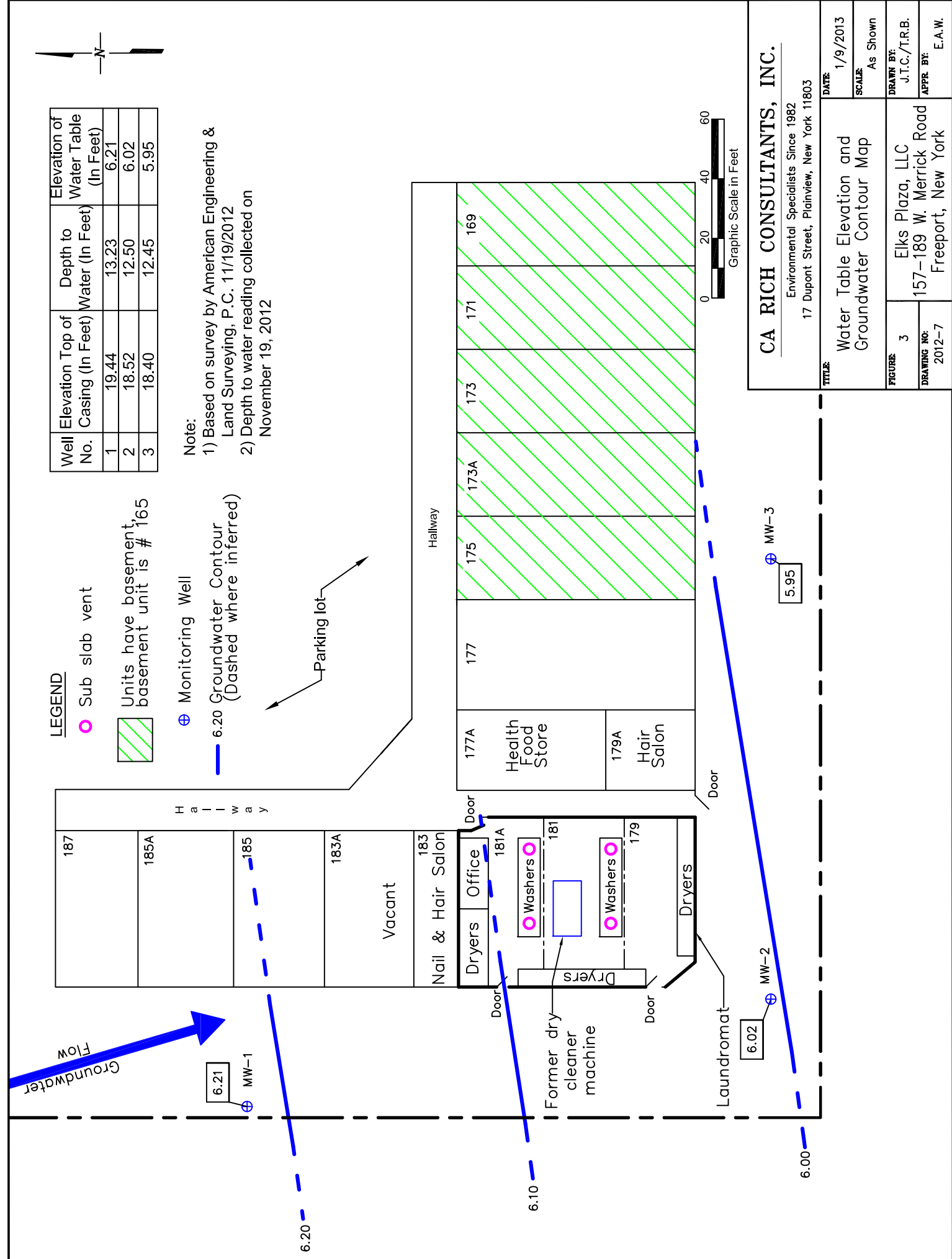
Monitoring Well

6.20 Groundwater Contour (Dashed where inferred)

Parking lot

Well No.	Elevation Top of Casing (In Feet)	Depth to Water (In Feet)	Elevation of Water Table (In Feet)
1	19.44	13.23	6.21
2	18.52	12.50	6.02
3	18.40	12.45	5.95

Note:  
 1) Based on survey by American Engineering & Land Surveying, P.C. 11/19/2012  
 2) Depth to water reading collected on November 19, 2012



Hallway

Door

Door

Door

Door

MW-3

5.95

MW-2

6.02

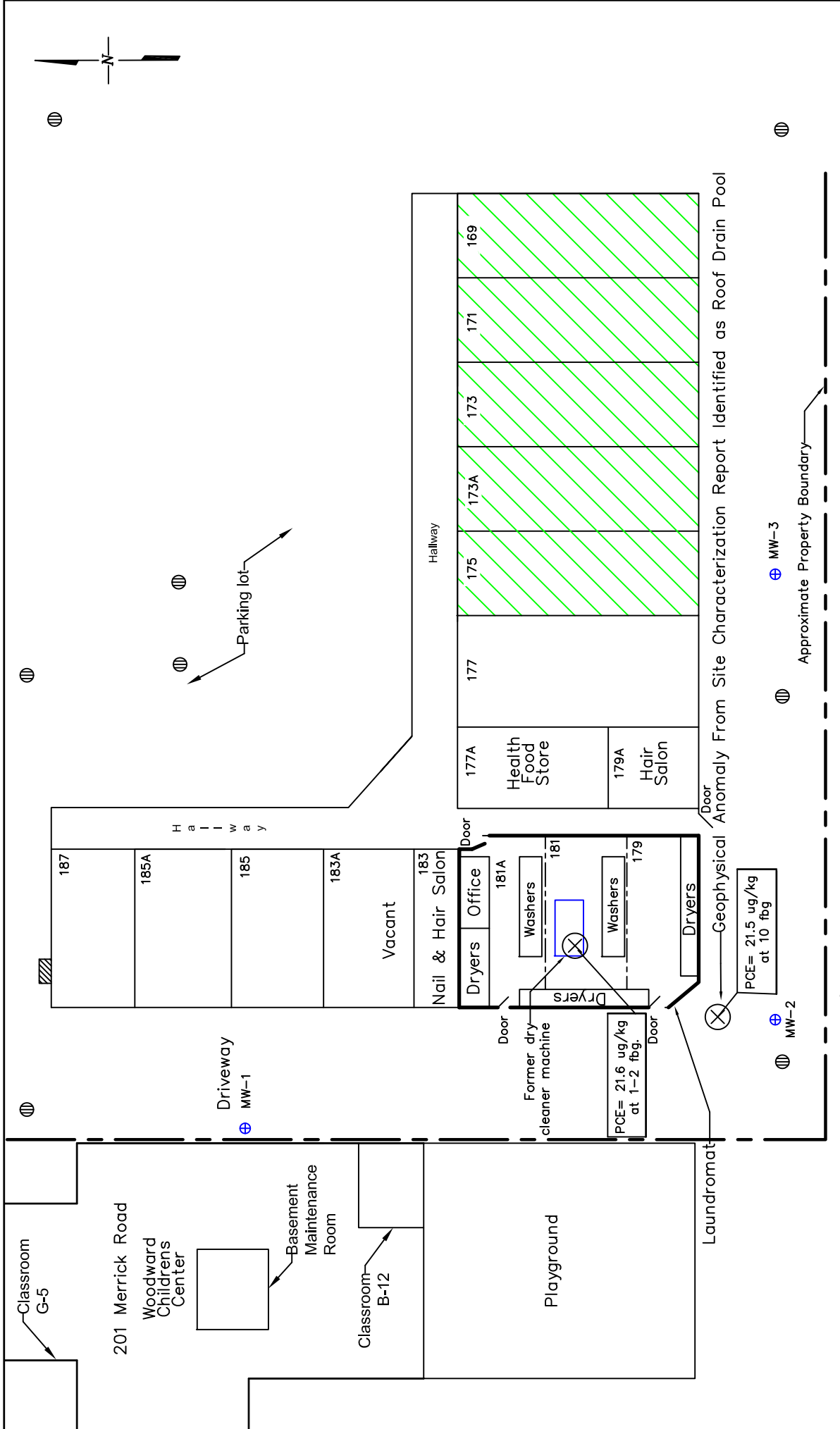
MW-3

5.95

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
 17 Dupont Street, Plainview, New York 11803

TITLE		DATE	1/9/2013
Water Table Elevation and Groundwater Contour Map		SCALE	As Shown
FIGURE	3	DRAWN BY:	J.T.C./T.R.B.
DRAWING NO:	2012-7	APPR. BY:	E.A.W.



**CA RICH CONSULTANTS, INC.**  
Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

**Locations of PCE Detections in Soil Samples**

DATE: 5/16/2014  
SCALE: As Shown  
DRAWN BY: J.T.C.  
APPR. BY: E.A.W.

FIGURE 4

DRAWING NO: 2014-2

Elks Plaza, LLC  
157-189 W. Merrick Road  
Freeport, New York

Grass Area

Parking

Units have basement, basement unit is # 165

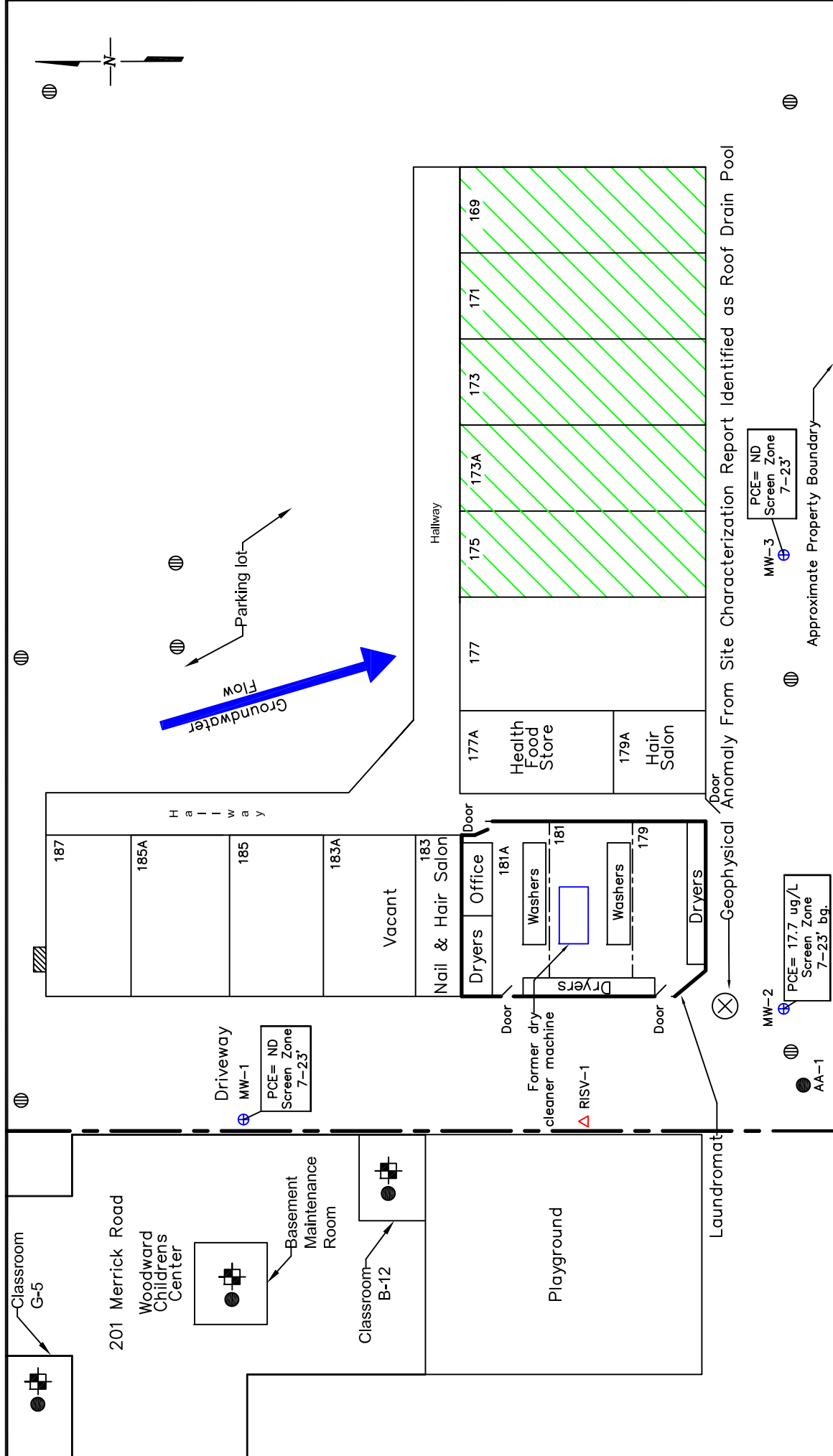
Storm Drains

LEGEND

- Monitoring Well
- Soil Sample
- Units have basement, basement unit is # 165
- Storm Drains

Graphic Scale in Feet

0 20 40 60



### LEGEND

- Monitoring Well
- Soil Vapor Point
- Units have basement, basement unit is #165
- Storm Drains
- Sub-slab Vapor Point
- Indoor & Ambient Air
- Soil Sample

Note: Groundwater flow direction was determined from a gauging event conducted on 11/19/2012



<b>CA RICH CONSULTANTS, INC.</b> Environmental Specialists Since 1982 17 Dupont Street, Plainview, New York 11803	
<b>TITLE:</b> Locations of PCE Detections in on-Site Groundwater Samples 11/19/2012	<b>DATE:</b> 5/20/2014
<b>FIGURE:</b> 5	<b>SCALE:</b> As Shown
<b>DRAWING NO:</b> 2012-9A	<b>DRAWN BY:</b> T.R.B./J.T.C.
<b>FIGURE:</b> 5	<b>APPR. BY:</b> E.A.W.



209 Smith
11-15' = 1.5
26-30' = ND
41-45' = 5.6
56-60' = 9.8

189 Smith
11-15' = ND
26-30' = 0.51 J
41-45' = 0.93 J
56-60' = 0.67 J

227 Smith
11-15' = ND
26-30' = ND
41-45' = 1.6
56-60' = 3.1

Site Location

Elks Plaza

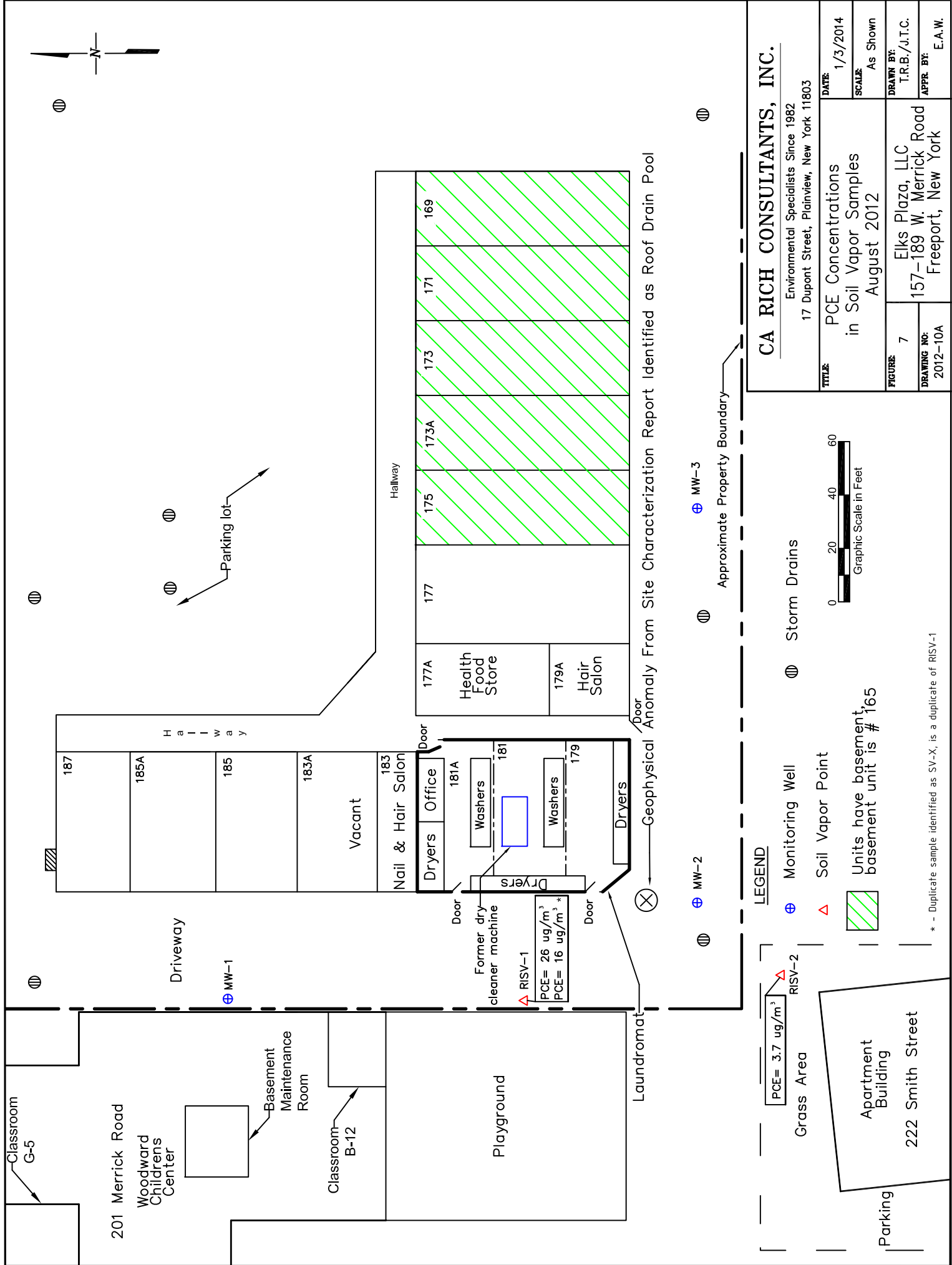
<b>CA RICH CONSULTANTS, INC.</b> Environmental Specialists Since 1982 17 Duport Street, Plainview, New York 11803	
<b>TITLE:</b> Locations of PCE Detections in Discreet Off-Site Groundwater Borings	<b>DATE:</b> 2/3/2014 <b>SCALE:</b> As Shown <b>DRAWN BY:</b> T.R.B./J.T.C. <b>APPR BY:</b> E.A.W.
<b>FIGURE:</b> 6 <b>DRAWING NO:</b> 2013-3	<b>FIGURE:</b> 6 <b>DRAWING NO:</b> 2013-3

**Legend**

Temporary Groundwater Boring

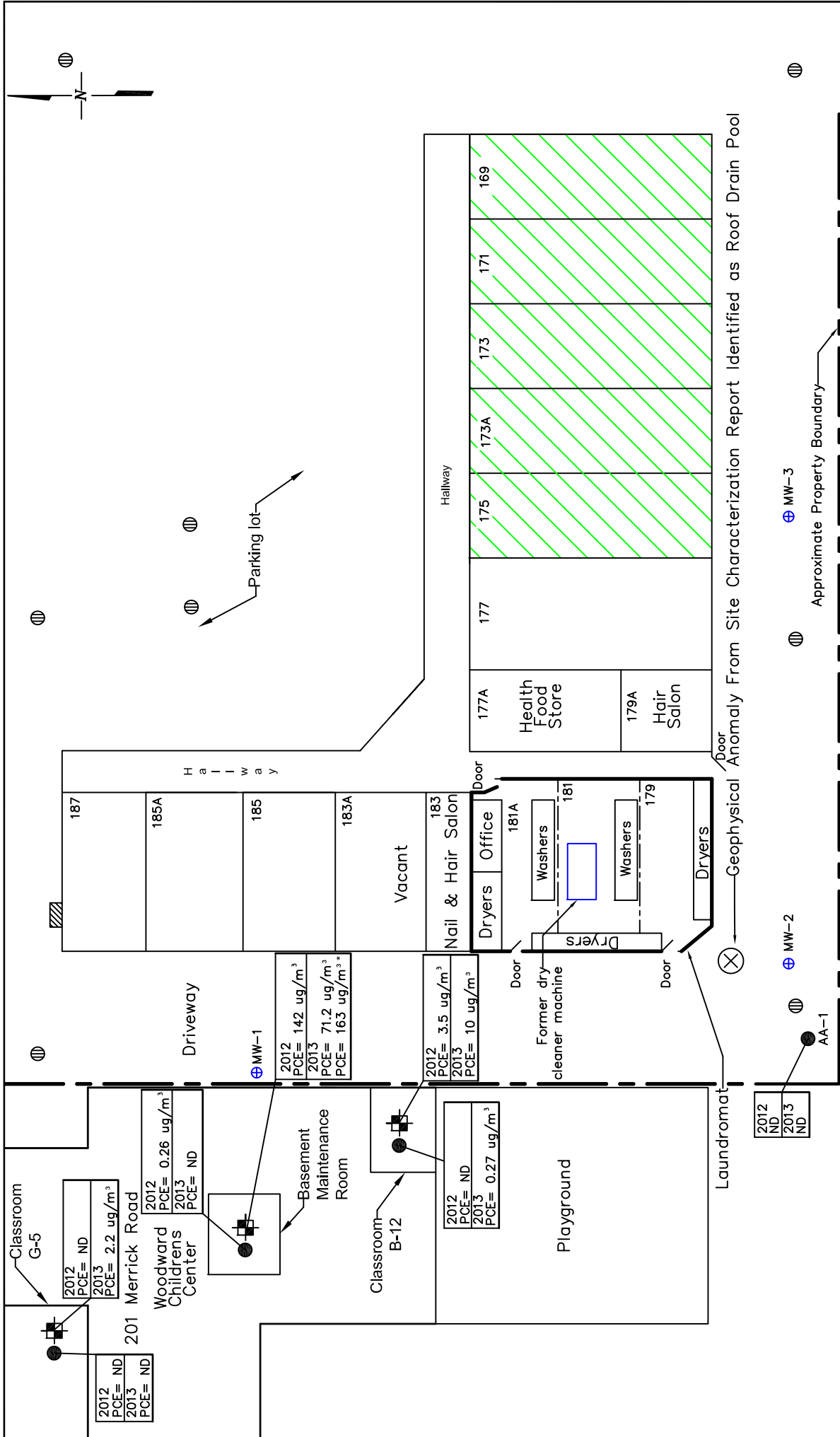
**Note:**  
 1. Groundwater concentration are in ug/L or parts per billion.

Date: 3/6/2012



\* - Duplicate sample identified as SV-X, is a duplicate of RISV-1





## CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
17 Dupont Street, Plainville, New York 11803

**TITLE:** PCE Concentrations at Sub-Slab, Indoor and Outdoor Air Samples 2012 & 2013

**DATE:** 1/3/2014

**SCALE:** As Shown

**DRAWN BY:** T.R.B./J.T.C.

**APPR. BY:** E.A.W.

**FIGURE:** 8

**DRAWING NO.:** 2012-11A

**FIGURE:** 8

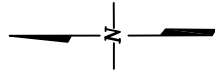
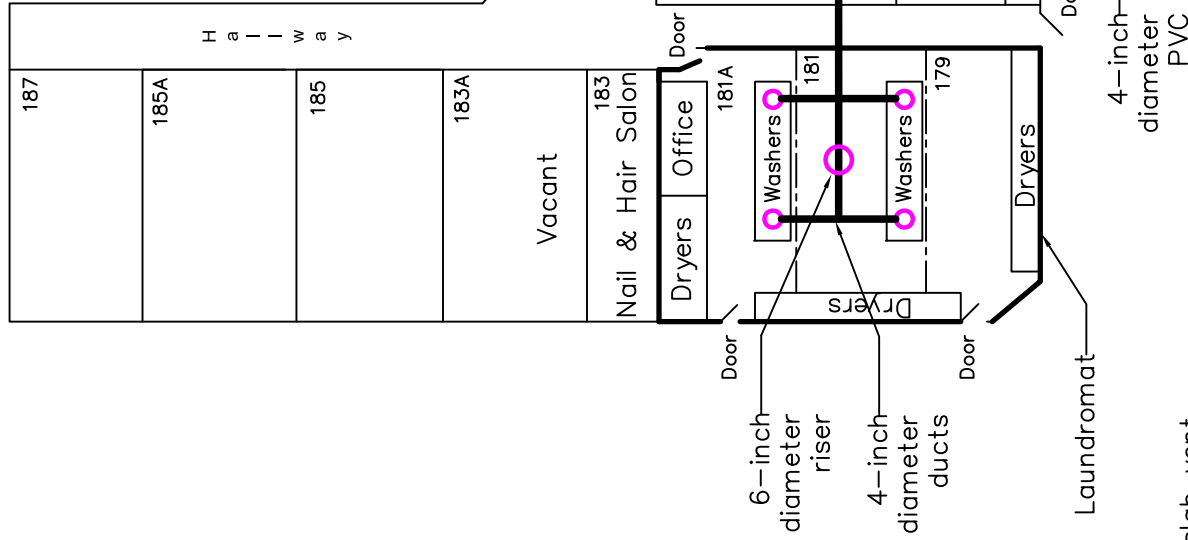
**DRAWING NO.:** 2012-11A

**FIGURE:** 8

**DRAWING NO.:** 2012-11A

\* - PCE concentration is for duplicate sub-slab soil vapor sample collected from basement maintenance room.

### Detail of SSD System



## LEGEND

Sub slab vent

Units have basement, 165  
basement unit is #



CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

**STILL**

DATE: 3/19/2013

## Remedial System

SCALE:

100

**FIGURE:**

111

9

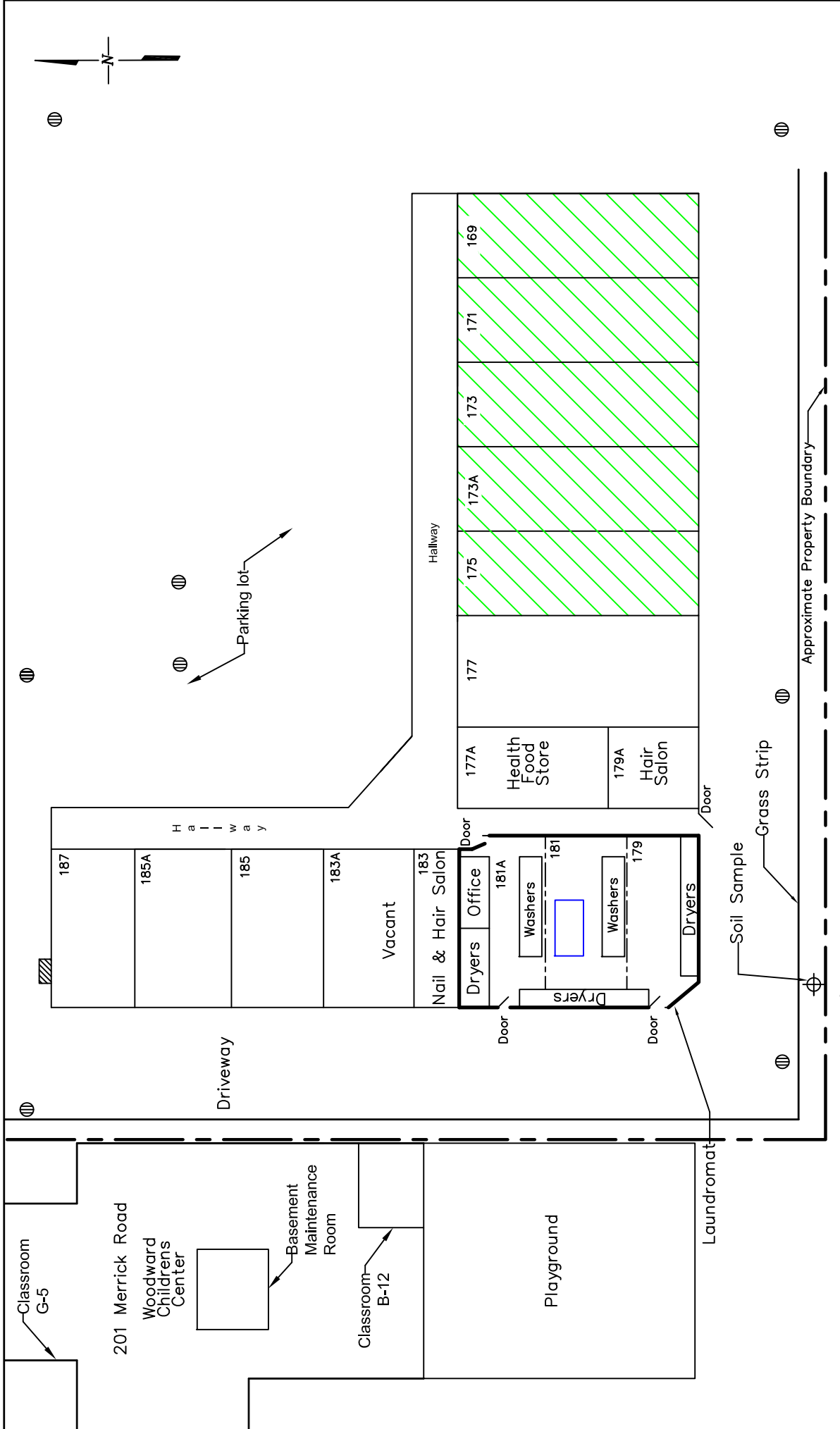
Elks Plaza, LLC  
157-189 W. Merrick Rd.  
Freeport, New York

APPR BY:

0.10







**Grass Area**

**Apartment Building**

**222 Smith Street**

**Parking**

**LEGEND**

- Units have basement, basement unit is # 165
- Storm Drains
- Soil Sample

**CA RICH CONSULTANTS, INC.**

Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

**TITLE:** Locations of Soil Sample for Complete TCL/TAL Analysis

**DATE:** 5/19/2014

**SCALE:** As Shown

**FIGURE:** 11

**DRAWN BY:** J.T.C.

**DRAWING NO.:** 2014-3

**APPR. BY:** E.A.W.

## APPENDIX A – METES AND BOUNDS

**SCHEDULE "A" PROPERTY DESCRIPTION**

**Environmental Easement Description**

**For Elks Plaza Site**

**Site No. 130193**

All that a certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, being a part of the parcel known as Nassau County Tax Map number 62-114-128,130 & 131, lying and being in the Village of Freeport, Town of Hempstead, County of Nassau and State of New York, being more particularly bounded and described as follows:

BEGINNING at a point on the new Southerly side of Merrick Road, distant 244.66 feet from the corner formed by the intersection of the new Southerly side of Merrick Road and the Westerly side of Ocean Avenue;

Following the following two courses and distances to the point or place of Beginning:

1) Running thence South 5 Degrees 38 Minutes 00 Seconds West. 471.36 Feet to a point;

2) Running thence North 83 Degrees 31 Minutes 30 Seconds West, 231.23 Feet to a point;

Running thence North 5 Degrees 38 Minutes 00 Seconds East, 143.04 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 101.02 Feet to a point;

Running thence South 07 Degrees 13 Minutes 20 Seconds West, 143.25 Feet to a point;

Running thence South 83 Degrees 59 Minutes 00 Seconds East, 25.87 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 79.12 Feet to the point or place of BEGINNING

Being .22 acres more or less.

## APPENDIX B – ENVIRONMENTAL EASEMENT

**ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36  
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW**

**THIS INDENTURE** made this 10<sup>th</sup> day of April, 2015, between Owner(s) Elks Plaza LLC, having an office at 28 Campbell Drive, Dix Hills, NY 11746, County of Nassau, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

**WHEREAS**, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

**WHEREAS**, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

**WHEREAS**, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

**WHEREAS**, Grantor, is the owner of real property located at the address of 157-189 W. Merrick Road in the Village of Freeport, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 62 Block 114 Lots 128, 130 and 131, being the same as that property conveyed to Grantor by deed dated June 19, 1997 and recorded in the Nassau County Clerk's Office in Liber and Page 10794/809. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately .34 +/- acres, and is hereinafter more fully described in the Land Title Survey dated June 7, 2014 prepared by Scalice Land Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

**WHEREAS**, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

**NOW THEREFORE**, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: W1-1120-08-04, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

**Residential as described in 6 NYCRR Part 375-1.8(g)(2)(i), Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)**

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;



(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for raising livestock or producing animal products for human consumption, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section  
Division of Environmental Remediation  
NYSDEC  
625 Broadway  
Albany, New York 12233  
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

**This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.**

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;



5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:      Site Number: 130193  
Office of General Counsel  
NYSDEC  
625 Broadway  
Albany New York 12233-5500

With a copy to:                                      Site Control Section  
Division of Environmental Remediation  
NYSDEC  
625 Broadway  
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

**IN WITNESS WHEREOF**, Grantor has caused this instrument to be signed in its name.

Elks Plaza LLC:

By:  \_\_\_\_\_

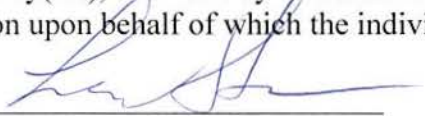
Print Name: GEORGE TSILOGIANNIS

Title: M. member Date: 4/7/15

**Grantor's Acknowledgment**

STATE OF NEW YORK     )  
  ) ss:  
COUNTY OF                    )

On the 7<sup>th</sup> day of APRIL, in the year 2015, before me, the undersigned, personally appeared GEORGE TSILOGIANIS personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.



\_\_\_\_\_  
Notary Public - State of New York



**THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK**, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By:   
Robert W. Schick, Director  
Division of Environmental Remediation

**Grantee's Acknowledgment**

STATE OF NEW YORK     )  
  ) ss:  
COUNTY OF ALBANY     )

On the 10 day of April, in the year 2015, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

  
Notary Public - State of New York

**David J. Chiusano**  
**Notary Public, State of New York**  
No. 01CH5032146  
Qualified in Schenectady County  
Commission Expires August 22, 2019

**SCHEDULE "A" PROPERTY DESCRIPTION**

**Environmental Easement Description**  
**For Elks Plaza Site**  
**Site No. 130193**

All that a certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, being a part of the parcel known as Nassau County Tax Map number 62-114-128,130 & 131, lying and being in the Village of Freeport, Town of Hempstead, County of Nassau and State of New York, being more particularly bounded and described as follows:

BEGINNING at a point on the new Southerly side of Merrick Road, distant 244.66 feet from the corner formed by the intersection of the new Southerly side of Merrick Road and the Westerly side of Ocean Avenue;

Following the following two courses and distances to the point or place of Beginning:

- 1) Running thence South 5 Degrees 38 Minutes 00 Seconds West, 471.36 Feet to a point;
- 2) Running thence North 83 Degrees 31 Minutes 30 Seconds West, 231.23 Feet to a point;

Running thence North 5 Degrees 38 Minutes 00 Seconds East, 143.04 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 101.02 Feet to a point;

Running thence South 07 Degrees 13 Minutes 20 Seconds West, 143.25 Feet to a point;

Running thence South 83 Degrees 59 Minutes 00 Seconds East, 25.87 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 79.12 Feet to the point or place of BEGINNING

Being .22 acres more or less.



SURVEY OF PROPERTY

157-189 West Merrick Road, Freeport, NY 11520

SITUATE

VILLAGE OF FREEPORT, TOWN OF HEMPSTEAD  
NASSAU COUNTY, NEW YORK

NassauTax Map No.:62-114-128, 130 & 131

DATE SURVEYED: 6/7/2014

GUARANTEED TO:  
Core Title Services, LLC  
First American Title Insurance Company  
Elks Plaza LLC  
Bank United.

All that a certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, being a part of the parcel known as Nassau County Tax Map number 62-114-128,130 & 131, lying and being in the Village of Freeport, Town of Hempstead, County of Nassau and State of New York, being more particularly bounded and described as follows:

BEGINNING at a point on the new Southerly side of Merrick Road, distant 244.66 feet from the corner formed by the intersection of the new Southerly side of Merrick Road and the Westerly side of Ocean Avenue;

Following the following two courses and distances to the point or place of Beginning:

- 1) Running thence South 5 Degrees 38 Minutes 00 Seconds West. 471.36 Feet to a point;
- 2) Running thence North 83 Degrees 31 Minutes 30 Seconds West, 231.23 Feet to a point;

Running thence North 5 Degrees 38 Minutes 00 Seconds East, 143.04 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 101.02Feet to a point;

Running thence South 07 Degrees 13 Minutes 20 Seconds West, 143.25 Feet to a point;

Running thence South 83 Degrees 59 Minutes 00 Seconds East, 25.87 Feet to a point;

Running thence South 83 Degrees 31 Minutes 30 Seconds East, 79.12 Feet to the point or place of BEGINNING

Area described is the limited area that is subject to the engineering control of the Sub Slab Depressurization System

NOTES:

- 1. UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF NEW YORK STATE EDUCATION LAW.
- 2. ONLY BOUNDARY SURVEY MAPS WITH THE SURVEYOR'S EMBOSSED SEAL ARE GENUINE TRUE AND CORRECT COPIES OF THE SURVEYOR'S ORIGINAL WORK AND OPINION.
- 3. CERTIFICATIONS ON THIS BOUNDARY SURVEY MAP SIGNIFY THAT THE MAP WAS PREPARED IN ACCORDANCE WITH THE CURRENT EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, INC. THE CERTIFICATION IS LIMITED TO PERSONS FOR WHOM THE BOUNDARY SURVEY MAP IS PREPARED, TO THE TITLE COMPANY, TO THE GOVERNMENTAL AGENCY, AND TO THE LENDING INSTITUTION LISTED ON THIS BOUNDARY SURVEY MAP.
- 4. THE CERTIFICATIONS HEREIN ARE NOT TRANSFERABLE.
- 5. THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. IF ANY UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS EXIST OR ARE SHOWN, THE IMPROVEMENTS OR ENCROACHMENTS ARE NOT COVERED BY THIS SURVEY.
- 6. THE OFFSET (OR DIMENSIONS) SHOWN HEREON FROM THE STRUCTURES TO THE PROPERTY LINES ARE FOR A SPECIFIC PURPOSE AND USE AND THEREFORE ARE NOT INTENDED TO GUIDE THE ERECTION OF FENCES, RETAINING WALLS, POOLS, PATIOS PLANTING AREAS, ADDITIONS TO BUILDINGS, AND ANY OTHER TYPE OF CONSTRUCTION.
- 7. PROPERTY CORNER MONUMENTS WERE NOT SET AS PART OF THIS SURVEY.
- 8. THIS SURVEY WAS PERFORMED WITH A SPECTRA FOCUS 30 ROBOTIC TOTAL STATION.



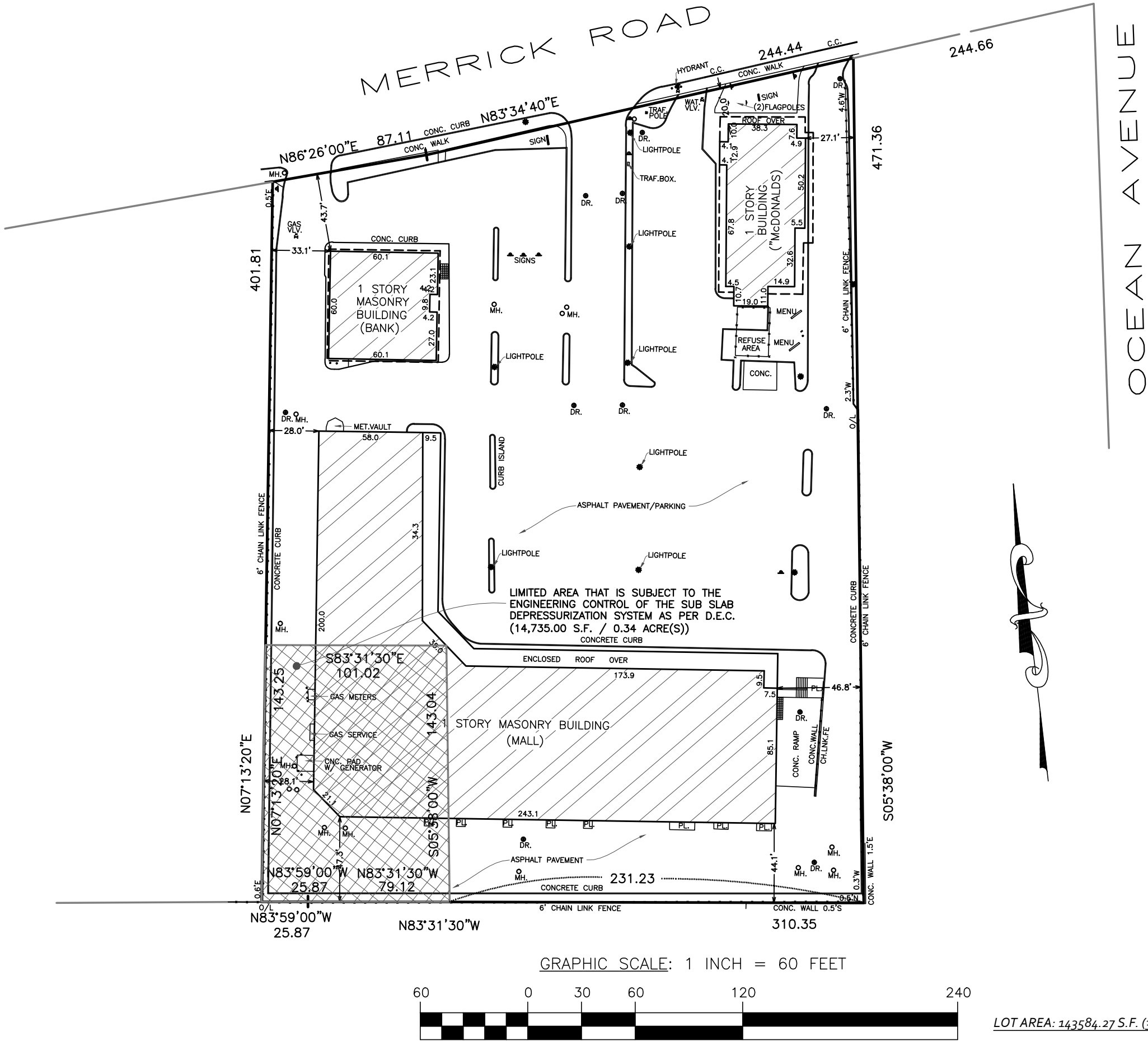
SCALICE LAND SURVEYING P.C.

110 South 4th Street, Lindenhurst, NY  
MJScalice@mjslandsurvey.com  
P: 631-957-2400 F: 631-226-2400

SCALE: 1"=60'

SURVEYED BY: J.S.  
MAPPED BY: A.C.

JOB NO. N14-0151

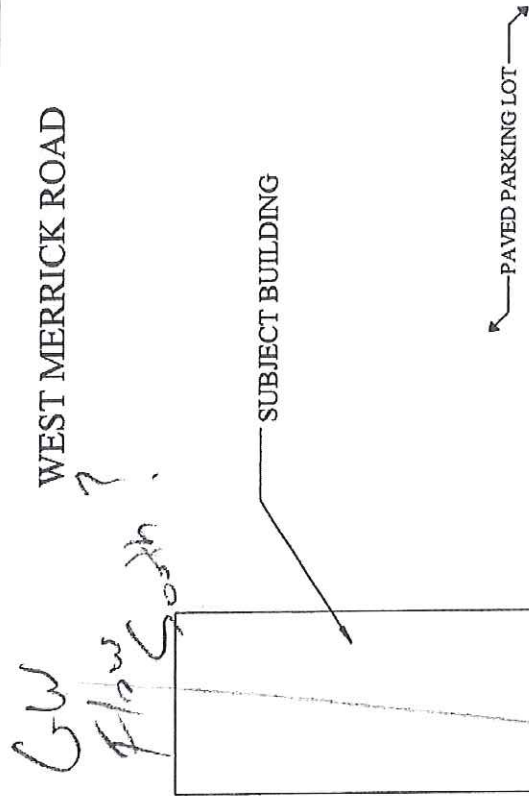


LOT AREA: 143584.27 S.F. (3.296 ACRES)

## C - SUMMARY OF PREVIOUS INVESTIGATIONS


## Phase II Subsurface Investigation (December 2006)





LEGEND	
	FORMER DRY CLEANER
	BORING LOCATION

RCE in gw

	FIGURE 1.0 - SITE DIAGRAM
ASSOCIATED ENVIRONMENTAL SERVICES, Ltd. 25 CENTRAL AVENUE HAUPPAUGE, NEW YORK 11788	SITE LOCATION: 157-189 MERRICK ROAD FREEPORT, NEW YORK
	DATE: DECEMBER 18, 2006
	SCALE: NOT TO SCALE

ASSOCIATED ENVIRONMENTAL  
SERVICES, Ltd.  
25 CENTRAL AVENUE  
HAUPPAUGE, NEW YORK 11788

**TABLE 1**  
**Soil Analytical Data**  
**EPA Method 8260 - Volatile Organic Compounds (VOCs)**

ANALYTICAL PARAMETERS	NYS DEC RSCO	B-1 8-12 ft.	B-2 8-12 ft.	B-3 8-12 ft.	B-4 8-12 ft.	B-7 0-4 ft.
Benzene	60	<5	<5	<5	<5	<5
Bromobenzene	NL	<5	<5	<5	<5	<5
Bromochloromethane	NL	<5	<5	<5	<5	<5
Bromodichloromethane	NL	<5	<5	<5	<5	<5
Bromoform	NL	<5	<5	<5	<5	<5
Bromomethane	NL	<5	<5	<5	<5	<5
n-Butylbenzene	10,000	<5	<5	<5	<5	<5
sec-Butylbenzene	10,000	<5	<5	<5	<5	<5
tert-Butylbenzene	10,000	<5	<5	<5	<5	<5
Carbon Tetrachloride	600	<5	<5	<5	<5	<5
Chlorobenzene	1,700	<5	<5	<5	<5	<5
Chlorodibromomethane	NL	<5	<5	<5	<5	<5
Chloroethane	1,900	<5	<5	<5	<5	<5
Chloroform	300	<5	<5	<5	<5	<5
Chloromethane	NL	<5	<5	<5	<5	<5
2-Chlorotoluene	NL	<5	<5	<5	<5	<5
4-Chlorotoluene	NL	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	NL	<5	<5	<5	<5	<5
1,2-Dibromoethane	NL	<5	<5	<5	<5	<5
Dibromomethane	NL	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	7,900	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	1,600	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	8,500	<5	<5	<5	<5	<5
Dichlorodifluoromethane	NL	<5	<5	<5	<5	<5



**TABLE 1**  
**Soil Analytical Data**  
**EPA Method 8260 - Volatile Organic Compounds (VOCs)**

ANALYTICAL PARAMETERS	NYS DEC RSCO	B-1 8-12 ft.	B-2 8-12 ft.	B-3 8-12 ft.	B-4 8-12 ft.	B-7 0-4 ft.
1,1-Dichloroethane	200	<5	<5	<5	<5	<5
1,2-Dichloroethane	100	<5	<5	<5	<5	<5
1,1-Dichloroethene	400	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	NL	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	300	<5	<5	<5	<5	<5
1,2-Dichloropropane	NL	<5	<5	<5	<5	<5
1,3-Dichloropropane	300	<5	<5	<5	<5	<5
2,2-Dichloropropane	NL	<5	<5	<5	<5	<5
1,1-Dichloropropene	NL	<5	<5	<5	<5	<5
Ethylbenzene	5,500	<5	<5	<5	<5	<5
Hexachlorobutadiene	NL	<5	<5	<5	<5	<5
Isopropylbenzene	2,300	<5	<5	<5	<5	<5
p-Isopropyltoluene	NL	<5	<5	<5	<5	<5
Methylene Chloride	100	<5	<5	<5	<5	<5
Naphthalene	13,000	<5	<5	<5	<5	<5
n-Propylbenzene	3,700	<5	<5	<5	<5	<5
Styrene	NL	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	NL	<5	<5	<5	<5	<5
1,1,1,2,2-Tetrachloroethane	600	<5	<5	<5	<5	<5
Tetrachloroethene	1,400	<5	<5	<5	<5	<5
Toluene	1,500	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	NL	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	3,400	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	800	<5	<5	<5	<5	<5



**TABLE 1**  
**Soil Analytical Data**  
**EPA Method 8260 - Volatile Organic Compounds (VOCs)**

ANALYTICAL PARAMETERS	NYS DEC RSCO	B-1 8-12 ft.	B-2 8-12 ft.	B-3 8-12 ft.	B-4 8-12 ft.	B-7 0-4 ft.
1,1,2-Trichloroethane	NL	<5	<5	<5	<5	<5
Trichloroethene	NL	<5	<5	<5	<5	<5
Trichlorofluoromethane	NL	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	400	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	10,000	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	10,000	<5	<5	<5	<5	<5
Vinyl Chloride	200	<5	<5	<5	<5	<5
Acetone	200	<50	<50	<50	<50	<50
Carbon Disulfide	2,700	<5	<5	<5	<5	<5
2-Butanone (MEK)	300	<10	<10	<10	<10	<10
Vinyl Acetate	NL	<5	<5	<5	<5	<5
2-Hexanone	NL	<5	<5	<5	<5	<5
Total Xylenes	1,200	<15	<15	<15	<15	<15
MTBE	120	<5	<5	<5	<5	<5

- Notes: 1. All results are in parts per billion (ppb) - ug/Kg.  
2. RSCOs listed in NYSDEC TAGM 4046.  
3. NL = No RSCO listed.  
4. Total VOCs not to exceed 10,000 ppb.

**TABLE 2**  
**Groundwater Analytical Data**  
**EPA Method 8260 - Volatile Organic Compounds (VOCs)**

Analytical Parameter	NYSDEC Groundwater Standards	B-3 GW	B-2 GW	B-3 GW	B-4 GW	B-5 GW	B-6 GW
Benzene	0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Bromobenzene	5	<5	<5	<5	<5	<5	<5
Bromochloromethane	5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50	<5	<5	<5	<5	<5	<5
Bromoform	50	<5	<5	<5	<5	<5	<5
Bromomethane	5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	5	<5	<5	<5	<5	<5	<5
Sec-Butylbenzene	5	<5	<5	<5	<5	<5	<5
Tert-Butylbenzene	5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5
Chlorodibromomethane	5	<5	<5	<5	<5	<5	<5
Chloroethane	5	<5	<5	<5	<5	<5	<5
Chloroform	5	<5	<5	<5	<5	<5	<5
Chloromethane	5	<5	<5	<5	<5	<5	<5
2-Chlorotoluene	5	<5	<5	<5	<5	<5	<5
4-Chlorotoluene	5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	5	<5	<5	<5	<5	<5	<5
Dibromomethane	5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5	<5	<5



Analytical Parameter	NYSDEC Groundwater Standards	B-3 GW	B-2 GW	B-3 GW	B-4 GW	B-5 GW	B-6 GW
1,1-Dichloroethane	5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5	<5	6	<5	<5	7	<5
trans-1,2-Dichloroethene	5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	5	<5	<5	<5	<5	<5	<5
1,3-Dichloropropane	5	<5	<5	<5	<5	<5	<5
2,2-Dichloropropane	5	<5	<5	<5	<5	<5	<5
1,1-Dichloropropene	5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5
Hexachlorobutadiene	5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	5	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	5	<5	<5	<5	<5	<5	<5
Methylene Chloride	5	<5	<5	<5	<5	<5	<5
Naphthalene	5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	5	<5	<5	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5



**TABLE 2**  
**Groundwater Analytical Data**  
**EPA Method 8260 - Volatile Organic Compounds (VOCs)**

Analytical Parameter	NYSDEC Groundwater Standards	B-3 GW	B-2 GW	B-3 GW	B-4 GW	B-5 GW	B-6 GW
1,1,2-Trichloroethane	5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	<5	7	<5	<5	7	<5
Trichlorofluoromethane	5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	5	<5	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5	<5	<5	<5	<5	<5	<6
Vinyl Chloride	2	<5	<5	<5	<5	<5	<5
Acetone	5	<50	<50	<50	<50	<50	<50
Carbon Disulfide	5	<5	<5	<5	<5	<5	<5
2-Butanone (MEK)	5	<10	<10	<10	<10	<10	<10
Vinyl Acetate	5	<5	<5	<5	<5	<5	<5
2-Hexanone	5	<5	<5	<5	<5	<5	<5
Total Xylenes	5	<15	<15	<15	<15	<15	<15
MTBE	10	<5	<5	<5	<5	<5	<5

Notes: 1. All results are in parts per billion (ppb) - ug/L.  
2. Groundwater Standards are listed in the New York State Department of Environmental Conservation (NYSDEC) 6 NYCRR Part 703 - Surface Water and Groundwater Quality Standards.



## Site Characterization Report, Elks Plaza LLC (March 2010)





### Current Occupants

157 - McDonald's  
 165 - NY Elite Limousine  
 169 - The Wine Cellar Liquor Store  
 171 - Ebony Beauty Supply  
 173 - Jade Garden Chinese Food

173 - 99c Super Discount Store  
 175 - South Shore Medical & Rehabilitation  
 177 - Bagel Store  
 177A - Solgar Health Foods  
 179 - XTC Hair Salon

179A-181A - Laundry Palace  
 183 - Five Star Nails & Spa  
 183A - Rene's Gift Shop and 30 Minute Photo  
 185 - Eye World Optical  
 185A - Vacant  
 187 - Raimo's Pizzeria  
 189 - Bank of America

**Figure 2 - Current Site Occupants**



323 Merrick Avenue - North Merrick, New York 11566  
 Tel: (516) 546-1100 Fax: (516) 213-8156

--- - Property Border

Client: Elks Plaza LLC.  
 Site: 157 through 189 West Merrick Road  
 Freeport, New York  
 Date: 9-19-2008





Scale: 0 35 ft

Tenant Units 181 and 171 are former Dry Cleaners

**Figure 4 - April 2009 Site Characterization Sampling Locations**

**PREFERRED ENVIRONMENTAL SERVICES**

323 Merrick Avenue - North Merrick, New York 11566  
Tel: (516) 546-1100 Fax: (516) 213-8156

⊕ - Soil Sample Location

⊗ - Water Sample Location

● - Soil Vapor Sample Location

⊕ - Temporary Groundwater Monitoring Well Location

⊗ - Soil Boring and Temporary Monitoring Well Location

● - Soil Sample Locations & Indoor Air and Sub-slab Vapor Sampling

Client: Elks Plaza LLC.

Site: 157 through 189 West Merrick Road  
Freeport, New York

Date: April 2009





# **NOTES:**

- Soil Sample Location
  - Water Sample Location
  - Soil Vapor Sample Location
  - Temporary Groundwater Monitoring Well Location
  - Soil Boring and Temporary Monitoring Well Location
  - Soil Sample Locations & Indoor Air and Sub-slab Vapor Sampling
- Concentrations are in micrograms per cubic meter (ug/m3)
- VC - Vinyl Chloride  
 1,2, DCE - 1,2 - Dichloroethene  
 TCE - Trichloroethene  
 PCE - Tetrachloroethene  
 Tenant Units 181 and 171 are former Dry Cleaners

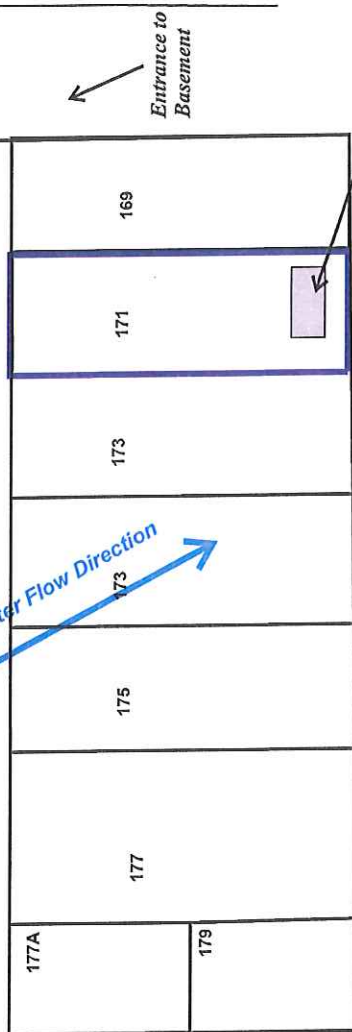
ELKS-OA-1	
VC	ND
1,2-DCE (gis)	ND
TCE	ND
PCE	ND

Regional Groundwater Flow Direction

ELKS-SS-1	
VC	ND
1,2-DCE (gis)	ND
TCE	171
PCE	14,900

ELKS-IA-1	
VC	ND
1,2-DCE (gis)	ND
TCE	0.186
PCE	3.33

ELKS-SV-1	
VC	ND
1,2-DCE (gis)	ND
TCE	ND
PCE	73.8



ELKS-SV-2	
VC	ND
1,2-DCE (gis)	22.3
TCE	46.7
PCE	71.3

ELKS-SV-3	
VC	ND
1,2-DCE (gis)	ND
TCE	ND
PCE	ND

ELKS-SV-4	
VC	ND
1,2-DCE (gis)	ND
TCE	ND
PCE	7.56

Figure 5 - April 2009 Subslab Vapor, Soil Vapor, Indoor Air and Outdoor Air Sampling Data

Client: Elks Plaza, LLC.

Date: April 2009

Site: 157-189 West Merrick Road  
 Freeport, New York

Scale: 0 35 ft



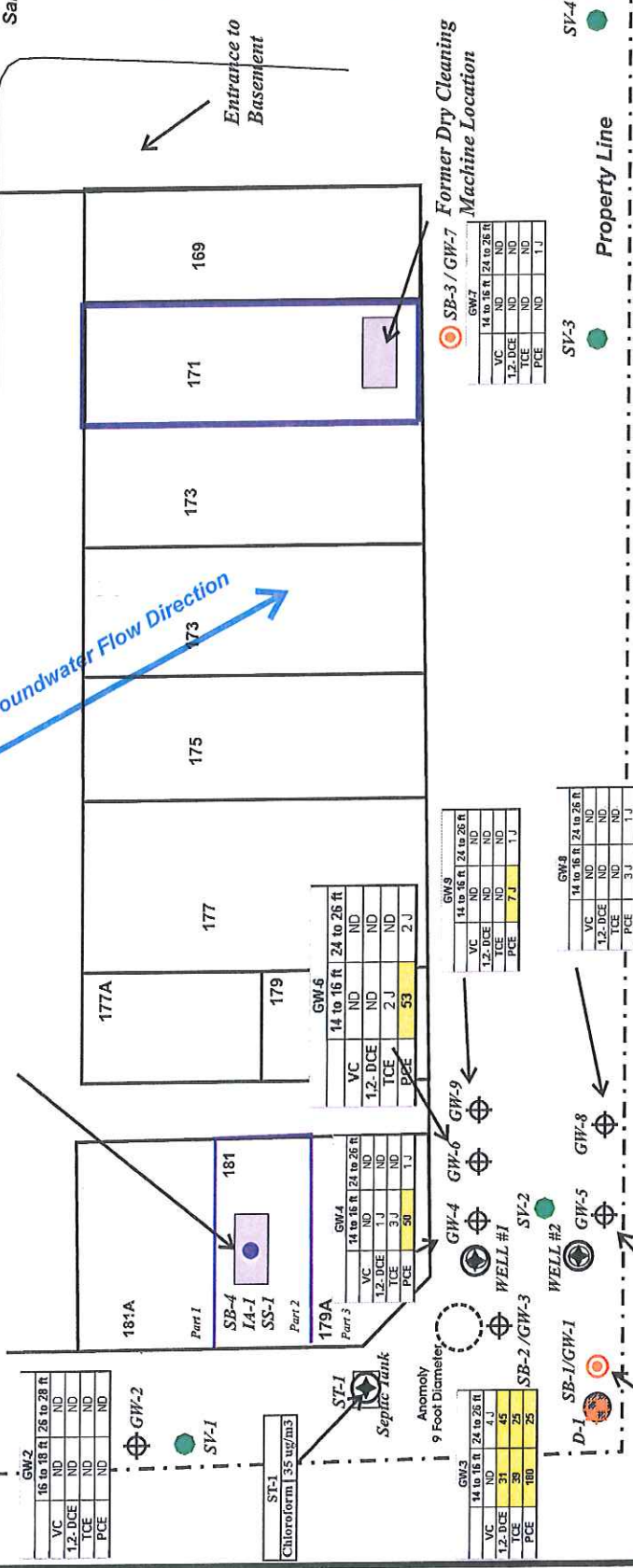
PREFERRED ENVIRONMENTAL SERVICES

323 Merrick Avenue - North Merrick, New York 11566  
 Tel: (516) 546-1100 Fax: (516) 213-8156



Regional Groundwater Flow Direction

Former Dry Cleaning Machine Location



**NOTES:**

- Soil Sample Location
  - Water Sample Location
  - Soil Vapor Sample Location
  - Temporary Groundwater Monitoring Well Location
  - Soil Sample and Temporary Monitoring Well Location
  - Soil Sample Locations & Indoor Air and Sub-slab Vapor Sampling
- Concentrations are in micrograms per liter (ug/L)
- VC - Vinyl Chloride  
1,2-DCE - 1,2-Dichloroethene  
TCE - Trichloroethene  
PCE - Tetrachloroethene  
Tenant Units 181 and 171 are former Dry Cleaners

SB-3 / GW-7

VC	ND	ND	ND
1,2-DCE	ND	ND	ND
TCE	ND	ND	ND
PCE	ND	ND	1 J

SV-3

SV-4

Property Line

Well # 2

VC	ND
1,2-DCE	ND
TCE	ND
PCE	ND

Well # 1

VC	ND
1,2-DCE	ND
TCE	ND
PCE	12

GW-5

VC	ND
1,2-DCE	8 J
TCE	3 J
PCE	68

GW-1

VC	ND
1,2-DCE	ND
TCE	ND
PCE	4 J

GW-9

VC	ND
1,2-DCE	ND
TCE	7 J
PCE	1 J

GW-8

VC	ND
1,2-DCE	ND
TCE	3 J
PCE	1 J

GW-5

VC	ND
1,2-DCE	ND
TCE	2 J
PCE	53

GW-4

VC	ND
1,2-DCE	1 J
TCE	3 J
PCE	50

GW-3

VC	ND
1,2-DCE	ND
TCE	25
PCE	180

GW-2

VC	ND
1,2-DCE	ND
TCE	ND
PCE	ND

Chloroform 35 ug/m3

ST-1

SV-1

GW-2

ST-1

GW-2

Figure 6-April 2009 - Groundwater, Septic Tank and Private Supply Well Sampling Data

Date: April 2009

Scale:



Client: Elks Plaza, LLC.

Site: 157-189 West Merrick Road  
Freeport, New York



323 Merrick Avenue - North Merrick, New York 11566  
Tel: (516) 546-1100 Fax: (516) 213-8156





**Figure 7- Aerial Photograph of Elks Plaza and Surrounding Properties**



**PREFERRED ENVIRONMENTAL SERVICES**

323 Merrick Avenue - North Merrick, New York 11566  
Tel: (516) 546-1100 Fax: (516) 213-8156



-Approximate Lot Line of Subject Property



-Soil Vapor Sample Location

Client: Elks Plaza LLC.  
Site: 157 through 189 West Merrick Road  
Freeport, New York  
Date: 9/14/2009



Elks Plaza  
Freeport, New York  
Soil Samples- April 2009

**TABLE 2 - SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED  
AND/OR ELEVATED ABOVE NYSDEC SOIL CLEAN-UP OBJECTIVES**

Sampling Date: Project Location: Sample ID: Laboratory ID:			4/9/2009 Elks Plaza D-1 (12-14) 0904473-001A	Qualifier	4/9/2009 Elks Plaza SB-1 (1-3) 0904473-002A	Qualifier	4/10/2009 Elks Plaza SB-3 (1-3) 0904506-001A	Qualifier	4/17/2009 Elks Plaza SB-4 (3-4 FT BG) 0904747-001A	Qualifier	Part 375 Table 375 - 6.8 (a) Unrestricted Use Soil Cleanup Objectives (ug/kg)
Cas #	Analyte	Units:									
74-87-3	Chloromethane	ug/kg	ND		ND		ND		ND		NA
75-01-4	Vinyl Chloride	ug/kg	ND		ND		ND		ND		20
75-00-3	Chloroethane	ug/kg	ND		ND		ND		ND		NA
75-35-4	1,1-Dichloroethene	ug/kg	ND		ND		ND		ND		330
540-59-0	1,2-Dichloroethene (total)	ug/kg	ND		ND		ND		ND		NA
67-64-1	Acetone	ug/kg	24		ND		ND		ND		50
75-15-0	Carbon Disulfide	ug/kg	ND		ND		ND		ND		NA
75-09-2	Methylene Chloride	ug/kg	6	BJ	4	BJ	3	BJ	6	BJ	50
1634-04-4	Methyl tert-butyl ether	ug/kg	ND		ND		ND		ND		930
75-34-3	1,1-Dichloroethane	ug/kg	ND		ND		ND		ND		270
78-93-3	2-Butanone	ug/kg	ND		ND		ND		ND		NA
67-66-3	Chloroform	ug/kg	ND		ND		ND		ND		370
71-55-6	1,1,1-Trichloroethane	ug/kg	ND		ND		ND		ND		680
56-23-5	Carbon Tetrachloride	ug/kg	ND		ND		ND		ND		760
71-43-2	Benzene	ug/kg	ND		ND		ND		ND		60
107-06-2	1,2-Dichloroethane	ug/kg	ND		ND		ND		ND		20 c
79-01-6	Trichloroethene	ug/kg	ND		ND		ND		ND		470
78-87-5	1,2-Dichloropropane	ug/kg	ND		ND		ND		ND		NA
75-27-4	Bromodichloromethane	ug/kg	ND		ND		ND		ND		NA
10061-01-5	cis-1,3-Dichloropropene	ug/kg	ND		ND		ND		ND		NA
108-10-1	4-Methyl-2-pentanone	ug/kg	ND		ND		ND		ND		NA
108-88-3	Toluene	ug/kg	5	J	ND		ND		ND		700
10061-02-6	trans-1,3-Dichloropropene	ug/kg	ND		ND		ND		ND		NA
79-00-5	1,1,2-Trichloroethane	ug/kg	ND		ND		ND		ND		NA
127-18-4	Tetrachloroethene	ug/kg	ND		ND		ND		26		1,300
591-78-6	2-Hexanone	ug/kg	ND		ND		ND		ND		NA
124-48-1	Dibromochloromethane	ug/kg	ND		ND		ND		ND		NA
108-90-7	Chlorobenzene	ug/kg	ND		ND		ND		ND		1,100
100-41-4	Ethylbenzene	ug/kg	ND		ND		ND		ND		1,000
1330-20-7	Xylene (total)	ug/kg	4	J	ND		ND		ND		260
100-42-5	Styrene	ug/kg	ND		ND		ND		ND		NA
75-25-2	Bromoform	ug/kg	ND		ND		ND		ND		NA
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg	ND		ND		ND		ND		NA

Notes:

NYSDEC - Soil Cleanup Objectives

Part 375 Table 375 - 6.8(a)

ND - Analyte was not detected above method detection limit.

NA - Not Analyzed / Not Available.

Bolded values indicates detected concentration exceeded NYSDEC.

MDL - Method Detection Limit

c- For constituents where the calculated SCO is lower than the rural background concentrations as determined by the DEC/DOH rural soil survey the rural soil background concentration is used as the Track 1 SCO value for the use of this site.

J - Indicates that the contaminant was detected at a concentration below its applicable MDL.

B - Analyte detected is associated blank as well as the sample

**TABLE 3 - SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED AND/OR ELEVATED ABOVE NYSDEC CLASS GA AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES IN GROUNDWATER SAMPLES GW-1 TO GW-5**

Elits Plaza,  
Freeport, New York  
Soil Samples-April 2009

Cas #	Analyte	Units:	GW-1		GW-2		GW-3		GW-4		GW-5		NYSDEC Class GA Ambient Water Quality Standards and Guidance Values (ug/L)
			4/9/2009 Elits Plaza GW-1 (22-24) 0904471-002A	Qualifier	4/9/2009 Elits Plaza GW-2 (16-18) 0904471-003A	Qualifier	4/9/2009 Elits Plaza GW-3 (24-26) 0904471-006A	Qualifier	4/9/2009 Elits Plaza GW-4 (14-16) 0904471-007A	Qualifier	4/9/2009 Elits Plaza GW-5 (14-16) 0904471-008A	Qualifier	
74-87-3	Chloromethane	ug/L	ND		ND		ND		ND		ND		NA
75-01-4	Vinyl Chloride	ug/L	ND		ND		ND		ND		ND		2
75-00-3	Chloroethane	ug/L	ND		ND		ND		ND		ND		50
75-35-4	1,1-Dichloroethene	ug/L	ND		ND		ND		ND		ND		5
540-59-0	1,2-Dichloroethene (total)	ug/L	ND		ND		ND		ND		ND		5
67-64-1	Acetone	ug/L	7	UJ	6	UJ	31	UJ	1	J	8	J	5
75-15-0	Carbon Disulfide	ug/L	ND	UJ	ND	UJ	ND	UJ	3	UJ	ND	UJ	50
75-09-2	Methylene Chloride	ug/L	ND		ND		ND		ND		ND		5
1634-04-4	Methyl tert-butyl ether	ug/L	ND		ND		ND		ND		ND		10
75-34-3	1,1-Dichloroethane	ug/L	ND		ND		ND		ND		ND		5
78-93-3	2-Butanone	ug/L	ND		ND		ND		ND		ND		50
67-66-3	Chloroform	ug/L	2	J	ND	UJ	ND	UJ	ND	UJ	ND	UJ	7
71-55-6	1,1,1-Trichloroethane	ug/L	ND		ND		ND		ND		ND		5
56-23-5	Carbon Tetrachloride	ug/L	ND		ND		ND		ND		ND		0.7
71-43-2	Benzene	ug/L	ND		ND		ND		ND		ND		5
107-06-2	1,2-Dichloroethane	ug/L	ND		ND		ND		ND		ND		5
79-01-6	Trichloroethene	ug/L	ND		ND		ND		ND		ND		1
78-87-5	1,2-Dichloropropane	ug/L	ND		ND		ND		ND		ND		50
75-27-4	Bromodichloromethane	ug/L	ND		ND		ND		ND		ND		5
10061-01-5	cis-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		5
108-10-1	4-Methyl-2-pentanone	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	5
108-88-3	Toluene	ug/L	ND		ND		ND		ND		ND		5
10061-02-6	trans-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		NA
79-00-5	1,1,2-Trichloroethane	ug/L	ND		ND		ND		ND		ND		5
127-18-4	Tetrachloroethene	ug/L	4	J	ND		ND		ND		ND		5
591-78-6	2-Hexanone	ug/L	ND	UJ	ND	UJ	180	UJ	50	J	68	J	5
124-48-1	Dibromochloromethane	ug/L	ND		ND		ND		ND		ND		50
108-90-7	Chlorobenzene	ug/L	ND		ND		ND		ND		ND		NA
100-41-4	Ethylbenzene	ug/L	ND		ND		ND		ND		ND		5
1330-20-7	Xylene (total)	ug/L	ND		ND		ND		ND		ND		5
100-42-5	Styrene	ug/L	ND		ND		ND		ND		ND		5
75-25-2	Bromoform	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	50
79-34-5	1,1,2,2-Tetrachloroethane	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	5

1. Values are estimated values.  
2. Indicates that the analyte is found in the associated blank as well as the sample.  
NYSDEC Class GA Ambient Water Quality Standards and Guidance Values.  
Revised June 1998  
NA - Not Available  
Bolded values indicate detected above NYSDEC Class GA Ambient Water Quality Standards



TABLE 4 - SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED AND/OR ELEVATED ABOVE NYSDEC CLASS GA AMBIENT WATER QUALITY STANDARDS IN  
GROUNDWATER SAMPLES GW-6 to GW-9 & SEPTIC TANK, & WELL #1 AND 2

Elks Plaza, Freeport New York Soil Samples-April 2009		Sampling Date: 4/15/2009 Soil Sample ID: 090405-001A Laboratory ID: 090405-001A		GW-6		GW-7		GW-8		GW-9		Septic Tank		Supply Well		NYSDEC Class GA Ambient Water Quality Standards and Guidance Values (ug/L)
Cas #	Analyte	Units:	4/15/2009 Elks Plaza GW-6 (15-16) 090405-001A	4/15/2009 Elks Plaza GW-7 (20-21) 090405-001A	4/15/2009 Elks Plaza GW-8 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	4/15/2009 Elks Plaza GW-9 (14-16) 090405-001A	
74-87-3	Chloromethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
75-01-4	Vinyl Chloride	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
75-00-3	Chloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
75-35-4	1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
540-59-0	1,2-Dichloroethene (total)	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
67-64-1	Acetone	ug/L	5	3	3	3	3	3	3	3	3	3	3	3	3	50
75-15-0	Carbon Disulfide	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
75-09-2	Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1634-04-4	Methyl tert-butyl ether	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
75-34-3	1,1-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
78-93-3	2-Butanone	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
67-66-3	Chloroform	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
71-55-6	1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
56-23-5	Carbon Tetrachloride	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
71-43-2	Benzene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
707-06-2	1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
79-04-6	Trichloroethene	ug/L	2	J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
78-87-5	1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
75-27-4	Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
10061-01-5	cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
108-10-1	4-Methyl-2-pentanone	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
108-88-3	Toluene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
10061-02-6	trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
79-00-5	1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
127-18-4	Tetrachloroethene	ug/L	53	2	J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
591-78-6	2-Hexanone	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
124-48-1	Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
108-90-7	Chlorobenzene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
100-41-4	Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1330-20-7	Xylene (total)	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
100-42-5	Styrene	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
75-25-2	Bromoform	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
75-34-5	1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

Notes:  
 1. Indicates an estimated value.  
 2. Indicates a value is greater than the analytical detection limit.  
 3. Indicates a value is greater than the analytical detection limit and is also greater than the NYSDEC Class GA Ambient Water Quality Standard and Guidance Value.  
 NA = Not Available  
 Bolded values indicate detected above NYSDEC Class GA Ambient Water Quality Standards



**TABLE 5 - SUMMARY OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL GAS AND/OR  
ELEVATED ABOVE NYSDOH AIR GUIDANCE VALUES**

Elks Plaza  
Freeport New York  
Air Samples- April 2009

CAS #	Analyte	Units:	4/10/2009 Elks Plaza Elks-IA-1 0904888-01	Qualifier	4/17/2009 Elks Plaza Elks-SS-1 0904793-002A	Qualifier	4/17/2009 Elks Plaza Elks-SV-1 0904793-003A	Qualifier	4/17/2009 Elks Plaza Elks-SV-2 0904793-004A	Qualifier	4/17/2009 Elks Plaza Elks-SV-3 0904793-005A	Qualifier	4/17/2009 Elks Plaza Elks-SV-4 0904793-006A	Qualifier	NYSDOH Study		NYSDOH Air Guidance Values (Specific to Indoor Air)	BASE Values (90th Percentile)
															Indoor: Homes in NYS 1997 - 2003 to 75%	Outdoor: 25% to 75%		
74-87-3	Chloromethane	ug/m3	2.91		ND		ND		ND		ND		ND		<0.25 - 1.8	<0.25 - 1.8	NA	NA
75-01-4	Vinyl Chloride (SIM)	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	<1.9
75-00-3	Chloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
75-35-4	1,1-Dichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	<1.4
95-53-6	1,2,4-Trimethylbenzene	ug/m3	0.985		ND		24.4		37.2		16.2		45.8		0.69 - 4.3	<0.25 - 0.81	NA	NA
108-76-8	1,3,5-Trimethylbenzene	ug/m3	ND		ND		8.04		12.0		ND		14.2		<0.27 - 1.7	<0.25 - 0.34	NA	NA
67-64-1	Acetone	ug/m3	969	E	ND		653	J	192		105	J	207		9.9 - 52	3.4 - 14	NA	NA
75-15-0	Carbon Disulfide	ug/m3	ND		ND		ND		5.76		ND		ND		NA	NA	NA	NA
75-09-2	Methylene Chloride	ug/m3	ND		ND		ND		ND		ND		ND		0.31 - 6.6	<0.25 - 0.73	60	10
1634-04-4	Methyl tert-butyl ether	ug/m3	ND		ND		ND		ND		ND		ND		<0.25 - 5.6	<0.25 - 0.66	NA	NA
75-34-3	1,1-Dichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
78-93-3	2-Butanone	ug/m3	2.21		ND		279		33.0		15.9		34.9		<0.25 - 0.54	<0.25	NA	NA
67-66-3	Chloroform	ug/m3	4.13		ND		56.3		4.25		2260		ND		<0.25 - 1.1	<0.25 - 0.33	NA	20.6
71-55-6	1,1,1-Trichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25 - 0.59	<0.25 - 0.6	NA	NA
56-23-5	Carbon Tetrachloride (SIM)	ug/m3	0.583		ND		15.1		15.2		10.5		16.4		1.1 - 5.9	0.57 - 2.3	NA	NA
71-43-2	Benzene	ug/m3	2.15		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
107-06-2	1,2-Dichloroethane	ug/m3	0.906		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
79-01-6	Trichloroethane (SIM)	ug/m3	0.186		171		ND		46.7		ND		ND		<0.25	<0.25	5	4.2
78-37-5	1,2-Dichloropropane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
75-27-4	Bromodichloromethane	ug/m3	ND		ND		ND		ND		51.6		ND		NA	NA	NA	NA
156-59-2	cis-1,2-Dichloroethane	ug/m3	ND		ND		ND		22.3		ND		ND		<0.25	<0.25	NA	<1.9
10051-01-5	cis-1,3-Dichloropropene	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
108-10-1	4-Methyl-2-pentanone	ug/m3	ND		ND		2.34		2.85		ND		4.43		NA	NA	NA	NA
108-88-3	Toluene	ug/m3	19.8		125		299		393		168		368		3.5 - 24.8	0.60 - 2.4	NA	NA
156-60-5	trans-1,2-Dichloroethene	ug/m3	ND		ND		ND		2.92		ND		ND		NA	NA	NA	NA
1061-02-6	trans-1,3-Dichloropropene	ug/m3	ND		ND		ND		ND		ND		ND		NA	NA	NA	NA
79-00-5	1,1,2-Trichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
127-18-4	Tetrachloroethene	ug/m3	3.33		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
591-78-6	2-Hexanone	ug/m3	ND		14,900		73.8		71.3		ND		7.56		<0.25 - 1.1	<0.25 - 0.34	100	15.9
124-48-1	Dibromochloromethane	ug/m3	ND		ND		ND		ND		ND		ND		NA	NA	NA	NA
75-71-8	Dichlorodifluoromethane	ug/m3	2.27		ND		ND		2.63		ND		ND		NA	NA	NA	NA
108-90-7	Chlorobenzene	ug/m3	ND		ND		ND		ND		ND		3.05		<0.25 - 4.1	<0.25 - 4.2	NA	NA
100-41-4	Ethylbenzene	ug/m3	ND		ND		29.7		47.2		14.7		45.0		<0.25	<0.25	NA	NA
1330-20-7	m/p-Xylene	ug/m3	2.00		ND		103		147		49.1		142		0.41 - 2.8	<0.25 - 0.48	NA	NA
95-47-6	o-Xylene	ug/m3	ND		ND		31.2		50.8		17.1		44.7		0.50 - 4.6	<0.25 - 0.48	NA	NA
100-42-5	Styrene	ug/m3	ND		ND		7.29		10.5		ND		10.9		0.39 - 3.1	<0.25 - 0.56	NA	NA
75-25-2	Bromoform	ug/m3	ND		ND		ND		ND		ND		ND		0.25 - 0.64	<0.25	NA	NA
75-69-4	Trichlorofluoromethane	ug/m3	6.81		ND		ND		ND		ND		ND		NA	NA	NA	NA
106-46-7	1,4-Dichlorobenzene	ug/m3	1.22		ND		ND		ND		ND		ND		1.1 - 5.4	<0.25 - 2.2	NA	NA
79-34-5	1,1,2,2-Tetrachloroethane	ug/m3	ND		ND		ND		ND		ND		ND		<0.25 - 0.54	<0.25	NA	NA

Notes:  
NYSDOH Study is the Summary of Indoor and Outdoor Levels of Volatile Organic Compounds From Fuel Oil Heated Home in NYS, 1997 to 2003.  
Unpublished. New York State Department of Health, Bureau of Toxic Substance Assessment.

Target Indoor Shallow Soil Concentration are presented in the November 2002 USEPA Draft Guidance For Evaluating The Vapor Intrusion to Indoor Air Pathway From Groundwater and Soils

The NYSDOH Air Guidelines Values are provided in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion

in the State of New York. Issued for Public Comment in February of 2005

Building Assessment and Survey Evaluation (BASE '94-99). Unpublished. Indoor Environments Division, United States Environmental Protection Agency, Washington D.C.

ug/m<sup>3</sup> - micrograms per cubic meter

Bolded Value indicates that the VOC was detected at a concentration exceeding its USEPA BASE 90th Percentile Value

NA - Not Available/Not Analyzed

B - Analyte detected is associated blank as well as the sample

ND - Analyte no detected at concentration exceeding method detection limit

E- Elevated detection limits due to the dilutions required by the elevated concentrations of non-target compounds in the samples

SIM-Indicates the analyte was quantitated using SIM Analysis

TABLE 6- QA/QC SAMPLES SUMMARY

Cas #	Analyte	Units:	4/17/2009 Elks Plaza Trip Blank 0904738-002A	Qualifier	4/19/2009 Elks Plaza TB #1 0904471-012A	Qualifier	4/10/2009 Elks Plaza TB #2 0904503-011A	Qualifier	4/19/2009 Elks Plaza FB#1 Soil 0904473-003A	Qualifier	4/19/2009 Elks Plaza FB #2 0904471-011A	Qualifier	4/19/2009 Elks Plaza SB 040909 0904471-013A	Qualifier
74-87-3	Chloromethane	ug/L	ND		ND		ND	UJ	ND		ND		ND	U
75-01-4	Vinyl Chloride	ug/L	ND		ND		ND		ND		ND		ND	
75-00-3	Chloroethane	ug/L	ND		ND		ND		ND		ND		ND	
75-35-4	1,1-Dichloroethene	ug/L	ND		ND		ND		ND		ND		ND	
540-59-0	1,2-Dichloroethene (total)	ug/L	ND		ND		ND		ND		ND		ND	
67-64-1	Acetone	ug/L	ND	UJ	ND		2	BJ	3	UJ	3	UJ	2	UJ
75-15-0	Carbon Disulfide	ug/L	ND	UJ	ND		ND	UJ	ND	UJ	ND	UJ	ND	UJ
75-09-2	Methylene Chloride	ug/L	ND		ND		ND		ND		ND		4	J
1634-04-4	Methyl tert-butyl ether	ug/L	ND		ND		ND		ND		ND		ND	
75-34-3	1,1-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND	
78-93-3	2-Butanone	ug/L	ND	UJ	ND		ND	UJ	ND		ND		ND	UJ
67-66-3	Chloroform	ug/L	ND		ND		ND		ND		ND		ND	
71-55-6	1,1,1-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND	
56-23-5	Carbon Tetrachloride	ug/L	ND		ND		ND		ND		ND		ND	
71-43-2	Benzene	ug/L	ND		ND		ND		ND		ND		ND	
107-06-2	1,2-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND	
79-01-6	Trichloroethene	ug/L	ND		ND		ND		ND		ND		ND	
78-87-5	1,2-Dichloropropane	ug/L	ND		ND		ND		ND		ND		ND	
75-27-4	Bromodichloromethane	ug/L	ND		ND		ND		ND		ND		ND	
10061-01-5	cis-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		ND	
108-10-1	4-Methyl-2-pentanone	ug/L	ND	UJ	ND		ND	UJ	ND	UJ	ND	UJ	ND	UJ
108-88-3	Toluene	ug/L	ND		ND		ND		ND		ND		ND	
10061-02-6	trans-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		ND	
79-00-5	1,1,2-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND	
127-18-4	Tetrachloroethene	ug/L	ND		ND		ND		ND		ND		ND	
591-78-6	2-Hexanone	ug/L	ND	UJ	ND		ND	UJ	ND	UJ	ND	UJ	ND	UJ
124-48-1	Dibromochloromethane	ug/L	ND		ND		ND		ND		ND		ND	
108-90-7	Chlorobenzene	ug/L	ND		ND		ND		ND		ND		ND	
100-41-4	Ethylbenzene	ug/L	ND		ND		ND		ND		ND		ND	
1330-20-7	Xylene (total)	ug/L	ND		ND		ND		ND		ND		ND	
100-42-5	Styrene	ug/L	ND		ND		ND		ND		ND		ND	
75-25-2	Bromoform	ug/L	ND		ND		ND		ND		ND		ND	
79-34-5	1,1,2,2-Tetrachloroethane	ug/L	ND	UJ	ND		ND	UJ	ND	UJ	ND	UJ	ND	UJ

Notes:

ND - Analyte was not detected above method detection limit.

## Supplemental Soil Vapor Investigation, Elks Plaza LLC (June 2010)



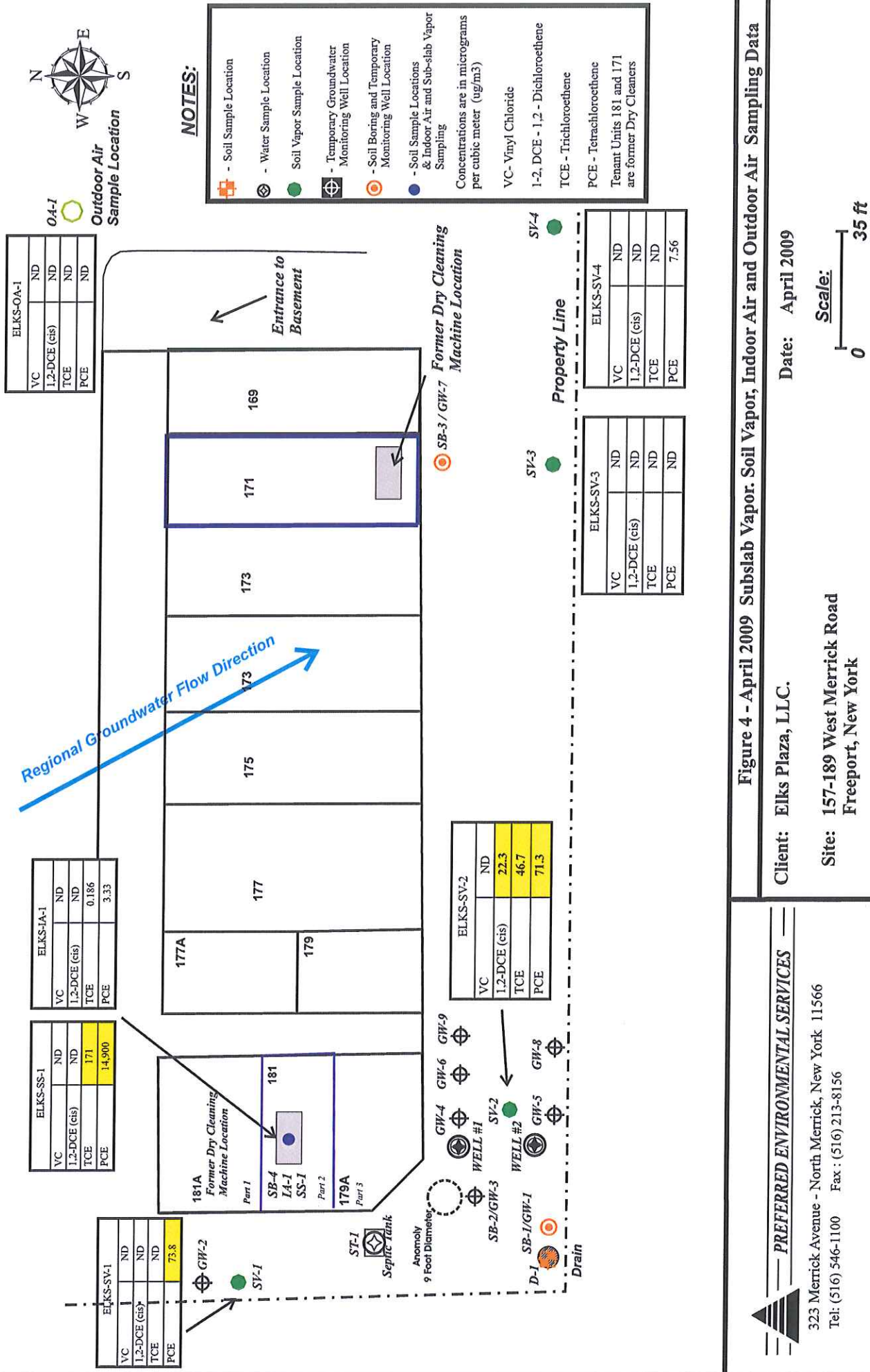


Figure 4 - April 2009 Subslab Vapor, Indoor Air and Outdoor Air Sampling Data

Client: Elks Plaza, LLC.

Date: April 2009

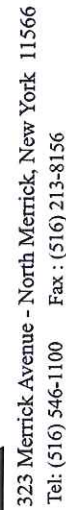
Site: 157-189 West Merrick Road  
Freeport, New York

Scale: 0 35 ft



PREFERRED ENVIRONMENTAL SERVICES

323 Merrick Avenue - North Merrick, New York 11566  
Tel: (516) 546-1100 Fax: (516) 213-8156



**Table 1- Summary of Volatile Organic Compounds Detected and/or Elevated in Subslab Vapor, Indoor and Outdoor Air Samples - March 16, 2010**

Eiks Plaza, Freeport, NY										
SDG PES013										
Preferred Sample ID: 1003693-001										
Laboratory ID: 1003693-006										
Sampling Date: 3/16/2010										
Dilution: 1 and 5										
IA-2 (UNIT 181A)										
1003693-001										
3/16/2010										
1 and 5										
IA-3 (UNIT 179A)										
1003693-002										
3/16/2010										
1 and 5										
IA-4 (UNIT 171)										
1003693-003										
3/16/2010										
2 and 4										
SS-2 (UNIT 181A)										
1003693-005										
3/16/2010										
10 and 600										
Case #	Analyte	Units:	IA-2 (UNIT 181A)	IA-3 (UNIT 179A)	IA-4 (UNIT 171)	SS-2 (UNIT 181A)	SS-3 (UNIT 179A)			
75-71-8	Dichlorodifluoromethane	ug/m3	2.32	2.23	2.62	2.08	2.77	8.85	8.85	U
76-14-2	1,2-Dichlorotetrafluoroethane	ug/m3	0.699	0.699	0.699	0.699	1.40	6.68	6.68	U
74-47-3	Chloromethane	ug/m3	1.92	1.92	1.30	1.01	1.81	9.25	9.25	U
74-83-9	Bromomethane	ug/m3	0.971	0.971	0.971	0.971	1.84	9.71	9.71	U
75-01-4	Vinyl Chloride	ug/m3	0.230	0.230	0.230	0.230	0.460	2.30	2.30	U
75-00-3	Chloroethane	ug/m3	0.924	0.924	0.924	0.924	1.85	9.24	9.24	U
75-09-2	Methylene Chloride	ug/m3	1.98	2.74	5.70	1.91	3.13	9.38	9.38	U
87-64-1	Acetone	ug/m3	226	226	46.3	0.850	2.78	110	110	U
75-15-0	Carbon Disulfide	ug/m3	0.934	0.934	0.934	0.934	1.87	9.34	9.34	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.766	0.766	0.766	0.766	1.53	7.66	7.66	U
75-35-4	1,1-Dichloroethene	ug/m3	0.991	0.991	0.991	0.991	1.98	9.91	9.91	U
75-34-3	1,1-Dichloroethane	ug/m3	0.809	0.809	0.809	0.809	1.62	8.09	8.09	U
75-69-4	Trichlorofluoromethane	ug/m3	3.37	3.37	12.8	1.07	4.05	9.55	9.55	U
106-05-4	Vinyl Acetate	ug/m3	0.704	0.704	0.704	0.704	1.41	7.04	7.04	U
1634-04-4	Methyl tert-butyl ether	ug/m3	0.901	0.901	0.901	0.901	1.80	9.01	9.01	U
156-60-5	trans-1,2-Dichloroethene	ug/m3	0.991	0.991	0.991	0.991	1.98	9.91	9.91	U
156-50-2	cis-1,2-Dichloroethene	ug/m3	0.991	0.991	0.991	0.991	1.98	9.91	9.91	U
78-93-3	Methyl ethyl ketone	ug/m3	1.77	1.77	3.19	1.24	2.89	5.60	5.60	U
67-66-3	Chloroform	ug/m3	2.20	2.20	0.977	0.977	1.95	9.77	9.77	U
107-06-2	1,2-Dichloroethane	ug/m3	1.23	0.912	0.793	0.793	1.59	7.93	7.93	U
71-55-6	1,1,1-Trichloroethane	ug/m3	0.818	0.818	0.818	0.818	1.64	8.18	8.18	U
56-30-5	Carbon Tetrachloride	ug/m3	0.503	0.503	0.629	0.629	1.26	2.52	2.52	U
75-27-4	Bromodichloromethane	ug/m3	1.00	1.00	1.00	1.00	2.01	10.0	10.0	U
75-27-5	1,2-Dichloropropane	ug/m3	0.924	0.924	0.924	0.924	1.85	9.24	9.24	U
1001-01-5	cis-1,3-Dichloropropene	ug/m3	2.27	2.27	2.27	2.27	4.54	22.7	22.7	U
79-01-6	Trichloroethene	ug/m3	0.242	0.242	0.242	0.242	0.484	525	525	U
71-43-2	Benzene	ug/m3	1.95	1.66	1.28	0.767	2.24	5.58	5.58	U
124-46-1	Dibromochloromethane	ug/m3	0.852	0.852	0.852	0.852	1.70	8.52	8.52	U
10061-02-6	trans-1,3-Dichloropropene	ug/m3	2.27	2.27	2.27	2.27	4.54	22.7	22.7	U
79-00-5	1,1,2-Trichloroethane	ug/m3	0.818	0.818	0.818	0.818	1.64	8.18	8.18	U
75-25-2	Bromoforn	ug/m3	1.03	1.03	1.03	1.03	2.07	10.3	10.3	U
106-10-1	Methyl Isobutyl ketone	ug/m3	4.10	0.920	0.820	0.820	1.64	8.20	8.20	U
891-76-6	Methyl Butyl Ketone	ug/m3	2.05	2.05	2.05	2.05	4.10	20.5	20.5	U
106-93-4	1,2-Dibromethane	ug/m3	0.769	0.769	0.769	0.769	1.54	7.69	7.69	U
127-18-4	Tetrachloroethene	ug/m3	2.17	2.17	3.25	1.83	2.17	54000	54000	U
73-34-5	1,1,2,2-Tetrachloroethane	ug/m3	0.687	0.687	0.687	0.687	1.37	6.87	6.87	U
106-88-3	Toluene	ug/m3	13.4	11.4	11.1	1.81	14.0	24.1	24.1	U
106-96-7	Chlorobenzene	ug/m3	0.921	0.921	0.921	0.921	1.84	9.21	9.21	U
100-41-4	Ethylbenzene	ug/m3	1.04	0.889	0.889	0.889	1.74	8.89	8.89	U
100-42-5	Styrene	ug/m3	0.852	0.852	0.852	0.852	1.70	8.52	8.52	U
1330-20-7	Xylene (m,p)	ug/m3	2.17	2.17	1.95	0.956	1.82	8.69	8.69	U
95-47-6	Xylene (o)	ug/m3	0.912	0.889	0.889	0.889	1.74	8.89	8.89	U
95-63-6	1,3,5-Trimethylbenzene	ug/m3	2.48	0.993	0.993	0.993	1.97	9.93	9.93	U
641-73-1	1,2,4-Trimethylbenzene	ug/m3	1.26	1.08	1.13	0.541	1.80	9.83	9.83	U
104-67-1	1,3-Dichlorobenzene	ug/m3	4.51	0.902	0.902	0.902	1.80	9.02	9.02	U
95-50-1	1,4-Dichlorobenzene	ug/m3	3.65	2.53	0.902	0.902	1.80	9.02	9.02	U
87-86-3	1,2-Dichlorobenzene	ug/m3	0.902	0.902	0.902	0.902	1.80	9.02	9.02	U
120-82-1	Hexachlorobutadiene	ug/m3	1.07	1.07	1.07	1.07	2.13	10.7	10.7	U
	1,2,4-Trichlorobenzene	ug/m3	0.564	0.742	0.742	0.742	1.48	7.42	7.42	U

Notes:

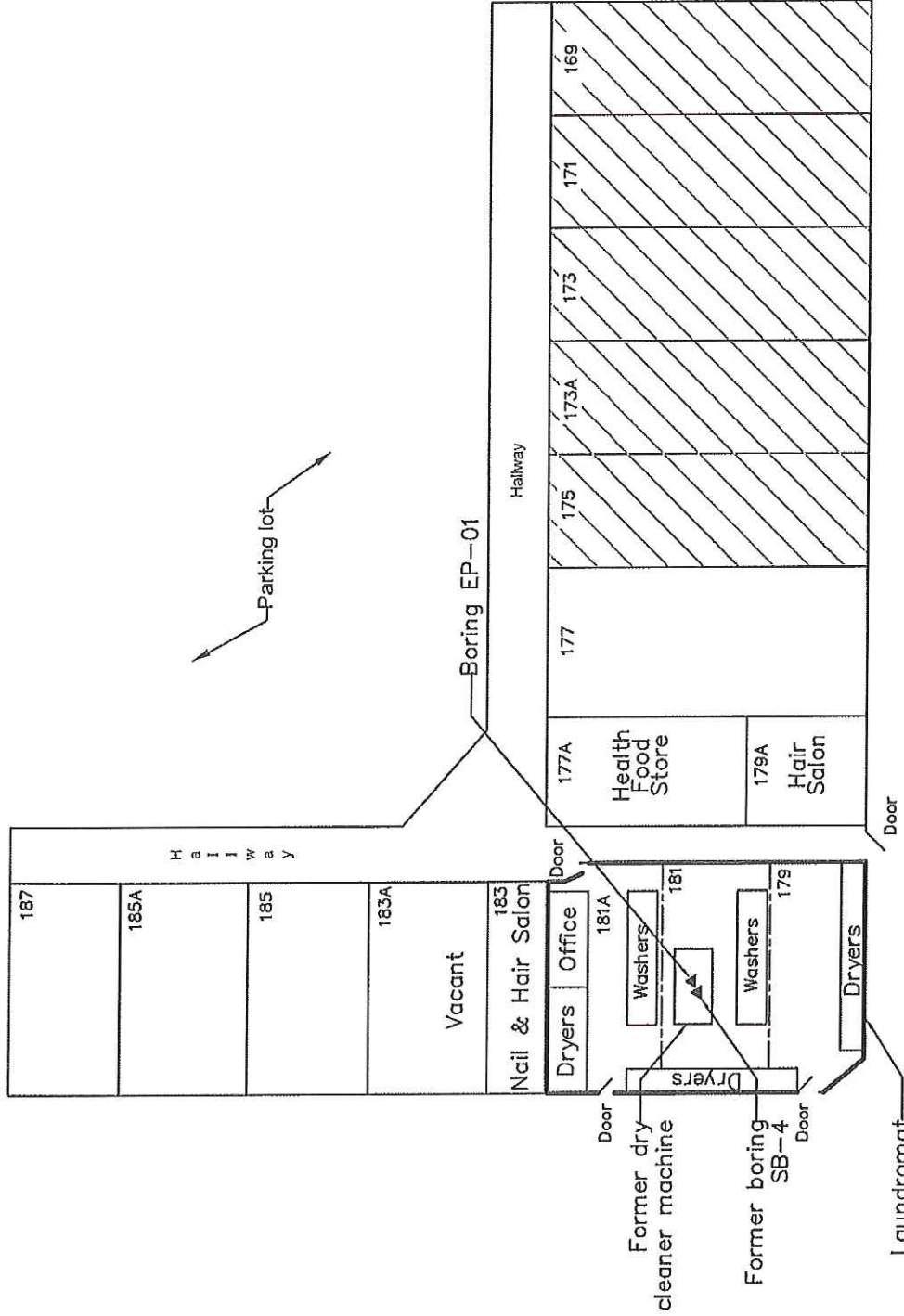
ug/m<sup>3</sup> - micrograms per cubic meter

NA - Not Available/Not Analyzed

B - Analyte detected is associated blank as well as the sample

Pilot Test Report and Interim Remedial Measures Work Plan  
(September 2011)





# **CA RICH CONSULTANTS, INC.**

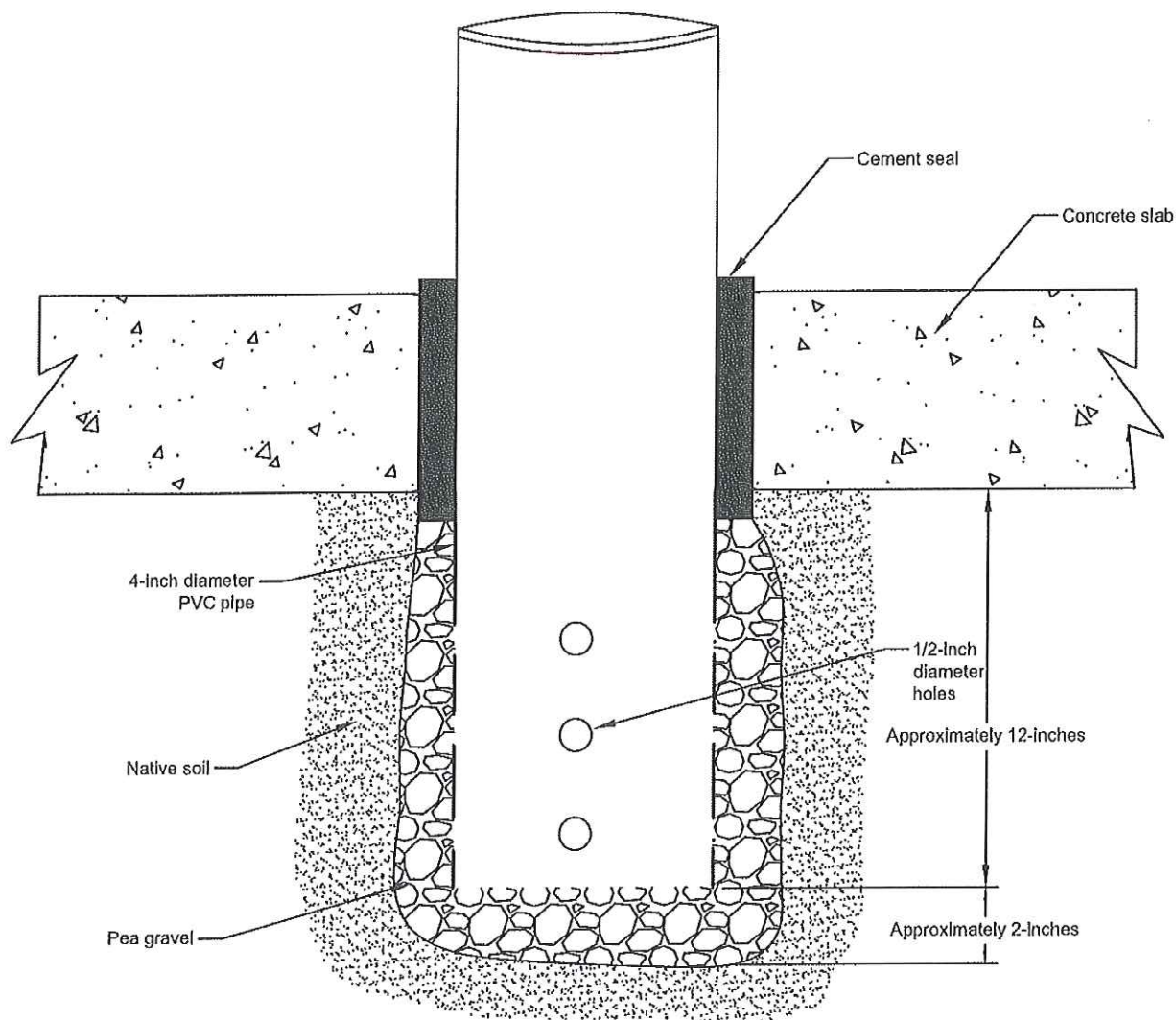
Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

<b>TITLE</b>	Location of Test Boring EP-01		
<b>DATE</b>	9/22/2011		
<b>SCALE</b>	1"=40'		
<b>DRAWN BY</b>	J.T.C.		
<b>APPR. BY</b>	E.A.W.		



**PROJECT** 1  
**DRAWING NO.** 2011-M3C  
**CLIENT** Elks Plaza, LLC  
157-189 W. Merrick Road  
Freeport, New York





# **CA RICH CONSULTANTS, INC.**

Environmental Specialists Since 1982  
17 Dupont Street, Plainville, New York 11803

TITLE:

Typical Soil Vapor Vent

DATE:

9/22/2011

SCALE:

N.T.S.

FIGURE:

2

DRAWING NO:

2011-M4

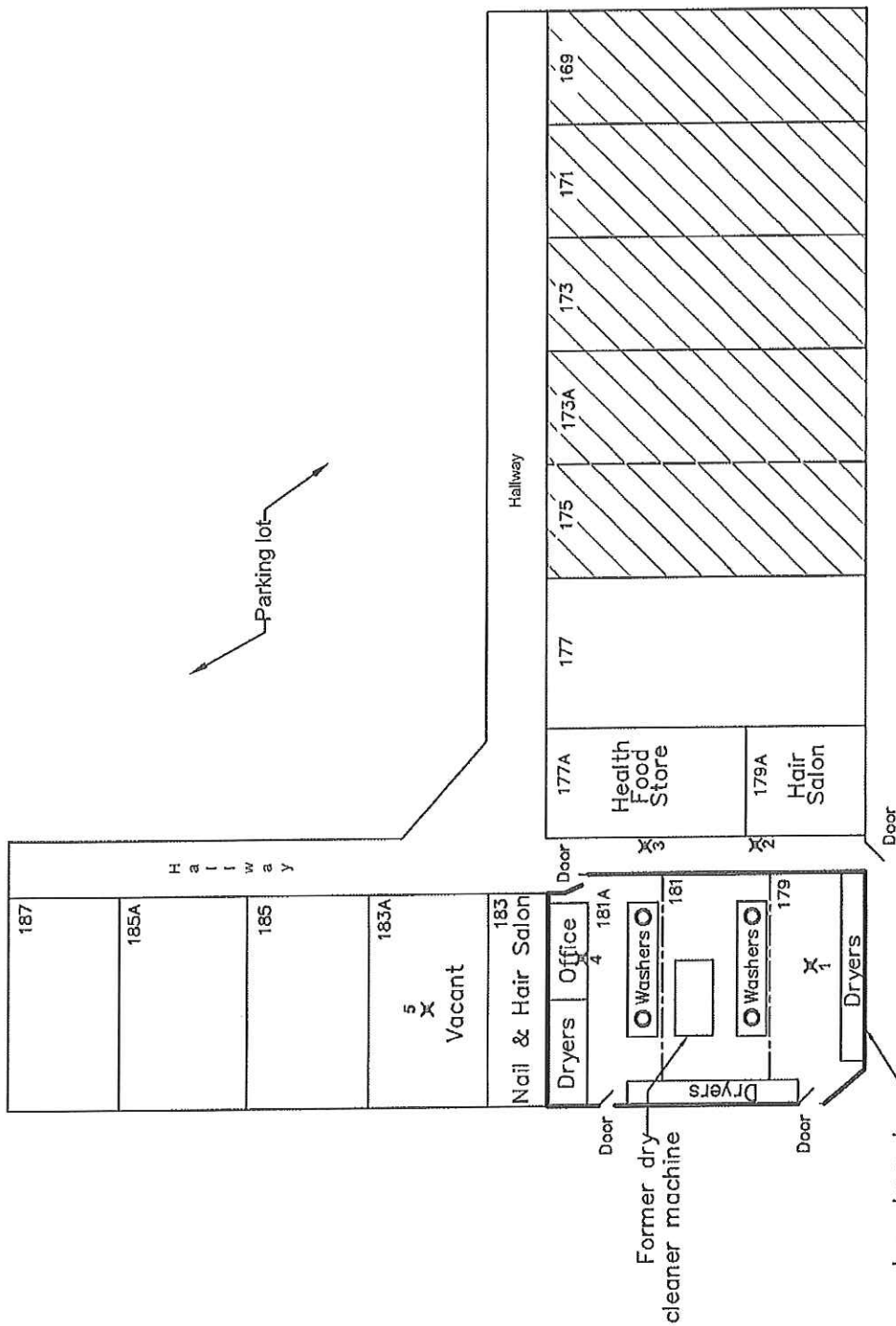
Elks Plaza, LLC  
157-189 W. Merrick Road  
Freeport, New York

DRAWN BY:

J.T.C.

APPR. BY:

E.A.W.



### LEGEND

- ☐ Sub slab vent
  - ☒ Temporary vacuum point
- Units have basement,  
basement unit is #165

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982

Environmental specialists since 1962.  
17 Dupont Street, Plainview, New York 11803

DATE \_\_\_\_\_

DATE	TIME	LOCATION	REMARKS
9/22/2011		Layout of Sub Slab Vents and	

SCALE	$10^3 - 10^5$
Temporary Vacuum Points	

FIGURE	DEATH BY	1942
--------	----------	------

3  
157  
Elks Plaza, LLC  
180 W. Main St.  
J.T.C.

DRAWING NO: 2011-M3  
137-109 W. Merrick Road  
Freeport, New York  
APPRO: EAW

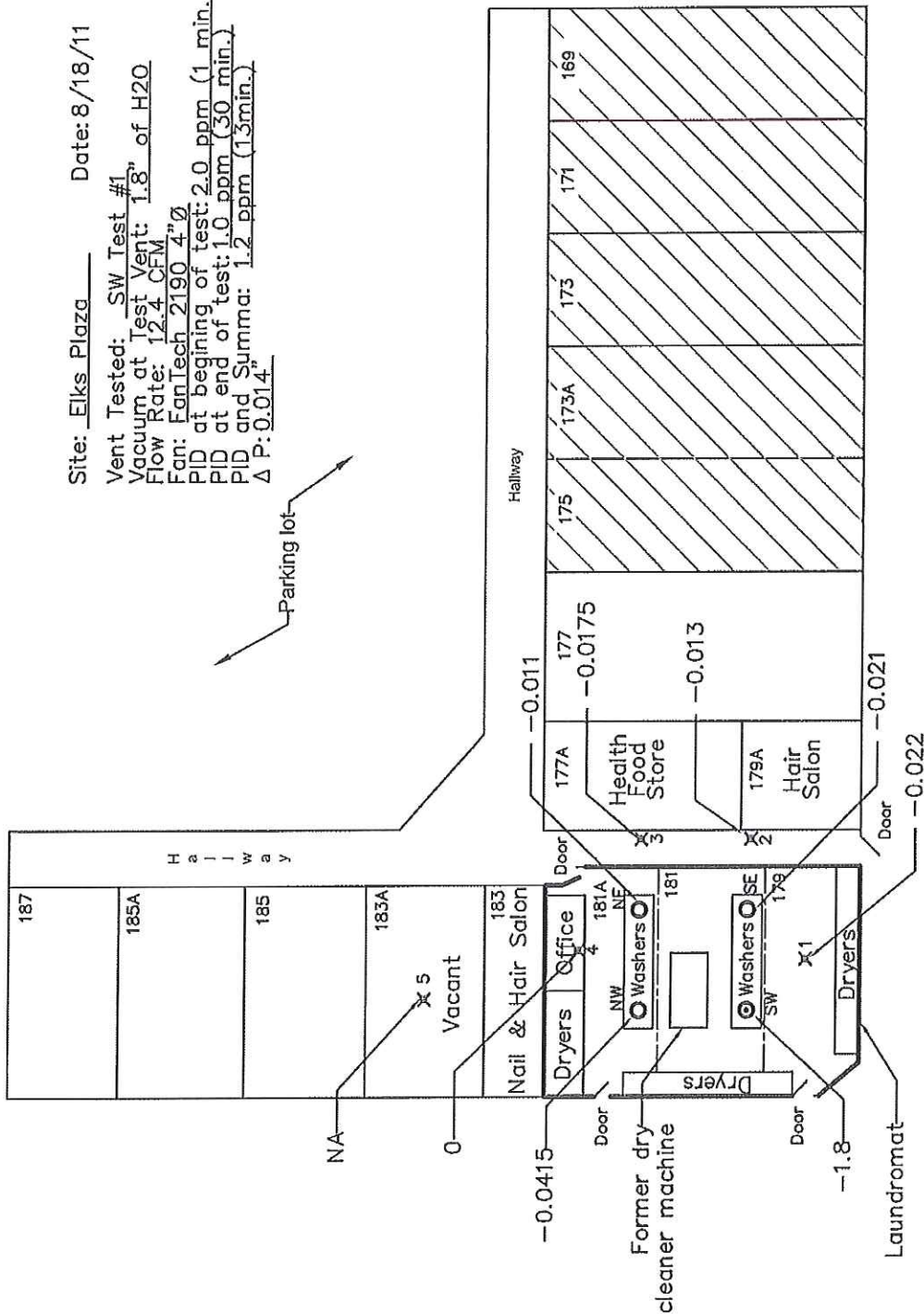
Graphic Scale in Feet



Site: Elks Plaza Date: 8/18/11

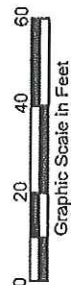
Vent Tested: SW Test #1  
 Vacuum at Test Vent: 1.8" of H2O  
 Flow Rate: 12.4 CFM  
 Fan: FanTech 2190 4" Ø  
 PID at beginning of test: 2.0 ppm (1 min.)  
 PID at end of test: 1.0 ppm (30 min.)  
 PID and Summa: 1.2 ppm (13min.)  
 Δ P: 0.014"

Parking lot



# LEGEND

- Vent
- Vent pilot tested
- × Temporary vacuum point
- 0.022 Vacuum in inches of water
- Units have basement, basement unit is #165



## CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
 17 Dupont Street, Plainville, New York 11803

TITLE		DATE
Results of Pilot Test, SW Vent		9/22/2011
FIGURE	4A	SCALE 1"=40'
DRAWING NO.	SW-1	DRAWN BY T.R.B.
		APPROVED E.A.W.

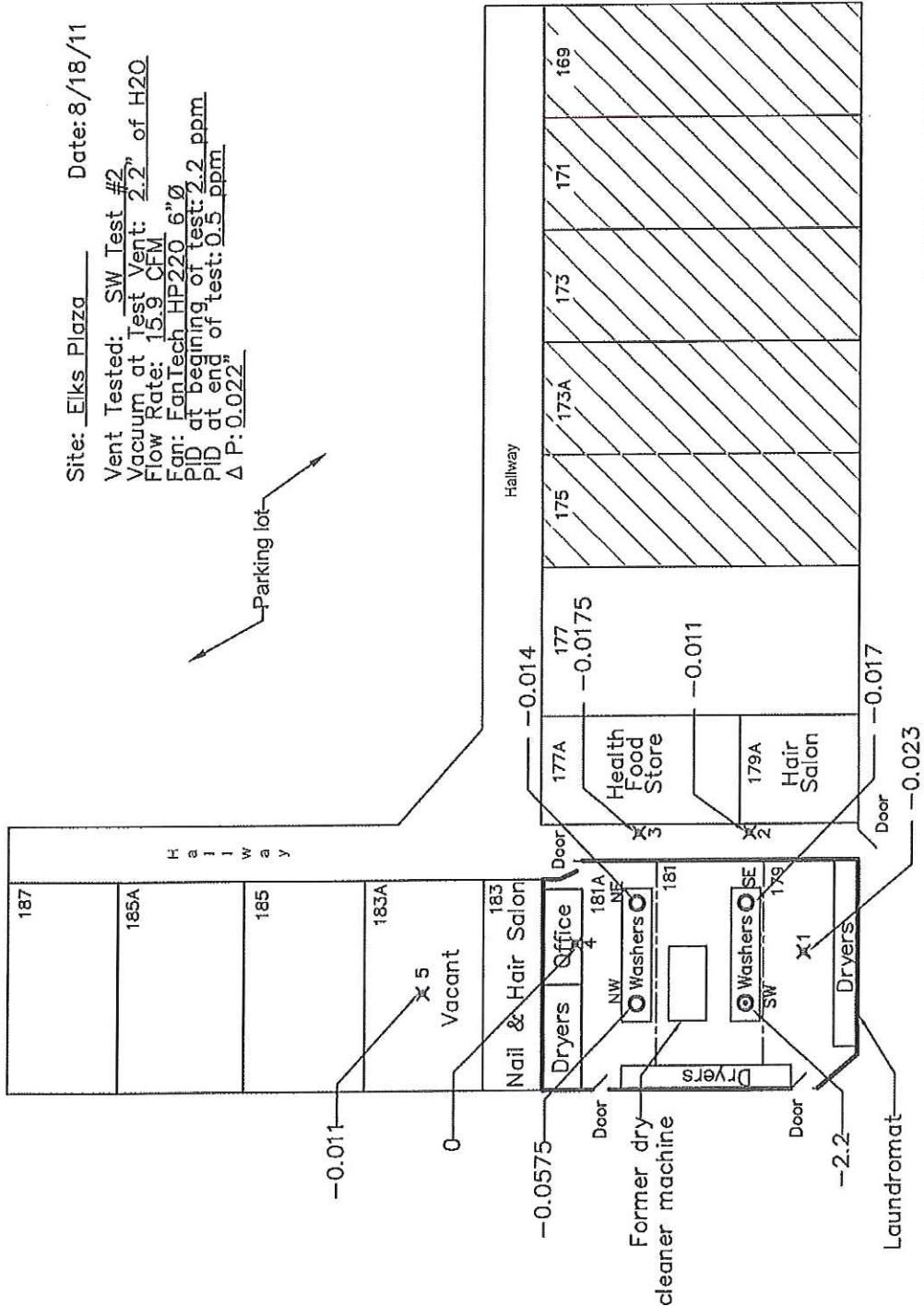




Site: Elks Plaza Date: 8/18/11

Vent Tested: SW Test #2  
Vacuum at Test Vent: 2.2" of H<sub>2</sub>O  
Flow Rate: 15.9 CFM  
Fan: EcoTech HP220 6"Ø  
PID at beginning of test: 2.2 ppm  
PID at end of test: 0.5 ppm  
 $\Delta P$ : 0.022

Parking lot



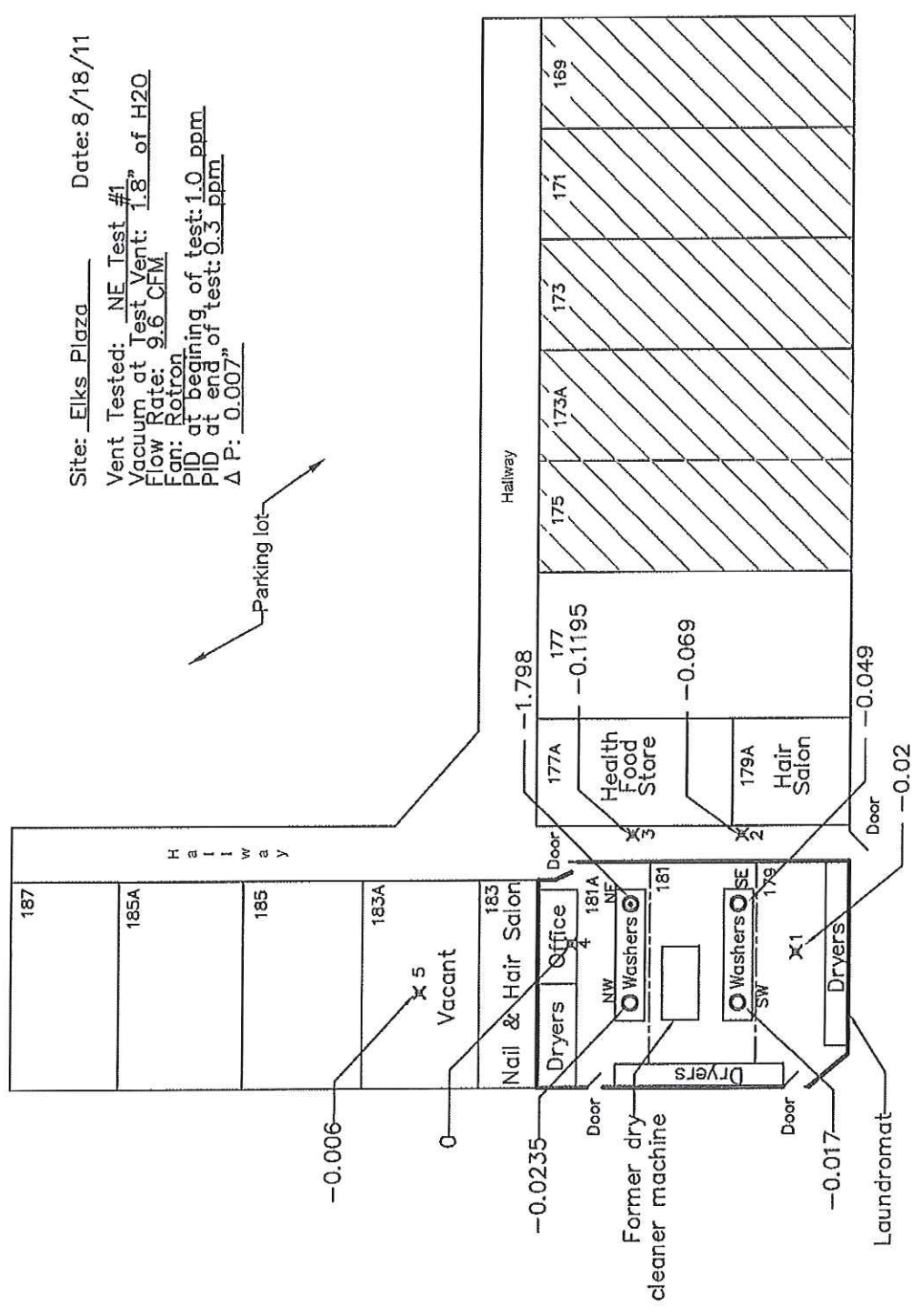
**LEGEND**

- Vent
- Vent pilot tested
- × Temporary vacuum point
- 0.023 Vacuum in inches of water
- Units have basement, basement unit is # 165




CA RICH CONSULTANTS, INC.		Environmental Specialists Since 1982		
17 Dupont Street, Plainview, New York 11803		DATE:	9/22/2011	
Results of Pilot Test, SW Vent		SCALE:	1"=40'	
FIGURE: 4B	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York		DESIGN BY:	T.R.B.
	DRAWING NO: SW-2		AFTER:	E.A.W.

\_\_\_\_\_



### LEGEND

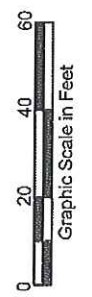
- ☒ Vent  
 • Vent pilot tested  
☒ Temporary vacuum point  
 -0.02 Vacuum in inches of water  
 Units have basement, basement unit is # 165

**CA RICH CONSULTANTS, INC.**

**Environmental Specialists Since 1982**  
17 Dupont Street, Plainview, New York 118

Results of Pilot Test, NE Vent

FIGURE	5A	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York
DRAWING NO:	NE-1	



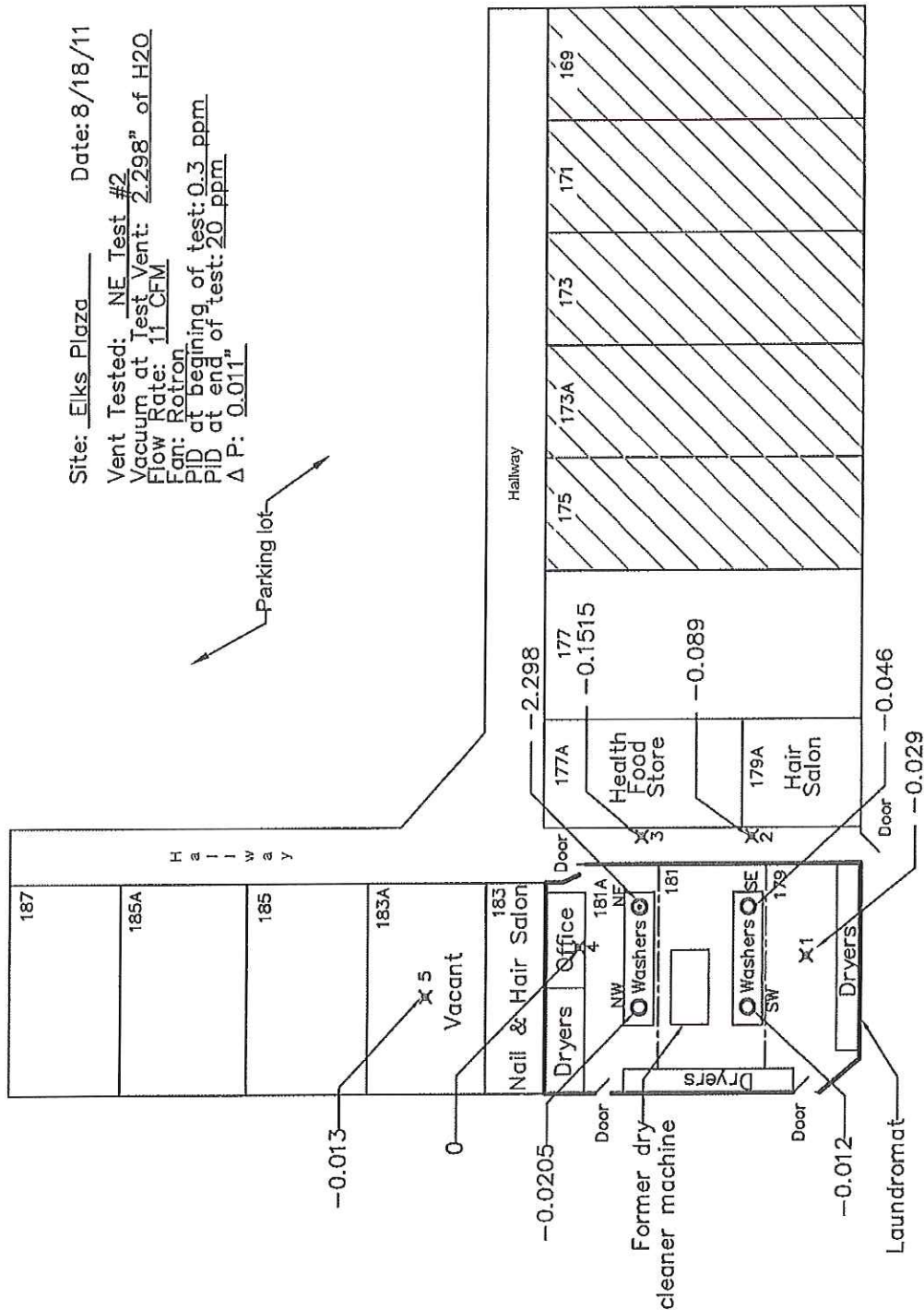




Site: Elks Plaza Date: 8/18/11

Vent Tested: NE Test #2  
Vacuum at Test Vent: 2.298" of H<sub>2</sub>O  
Flow Rate: 11 CFM  
Fan: Rotron  
PID at beginning of test: 0.3 ppm  
PID at end of test: 20 ppm  
 $\Delta P$ : 0.011"

Parking lot



#### LEGEND

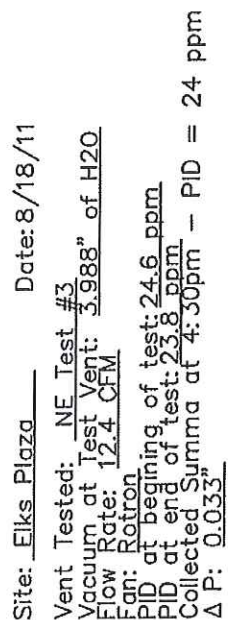
- Proposed vent
- Vent to be pilot tested
- x Temporary vacuum point
- 0.029 Vacuum in inches of water
- Units have basement, basement unit is # 165







#### CA RICH CONSULTANTS, INC.

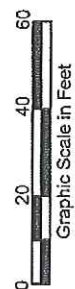
Environmental Specialists Since 1982  
17 Dupont Street, Plainville, New York 11803

TITLE		DATE
Results of Pilot Test, NE Vent		9/22/2011
FIGURE		SCALE
59		1"=40'
DRAWING NO.		DESIGN BY
NE-2		T.R.B.
		APP'D BY
		E.A.W.



- |   |               |
|---|---------------|
|  | Vent          |
|  | Vent          |
|  | Temp          |
| -0.048  | Vacu          |
|  | Units<br>base |

<b>CA RICH CONSULTANTS, INC.</b> Environmental Specialists Since 1982 17 Dupont Street, Plainville, New York 11803		<b>DATE</b> 9/22/2011
<b>TITLE</b> Results of Pilot Test, NE Vent		<b>SCALE</b> 1" = 40'
<b>FIGURES</b> SC	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York	<b>DRAWN BY</b> T.R.B.
<b>DRAWING NO.</b> NE-3		<b>APPR. BY</b> E.A.W.





# Plan View

4-inch diameter  
vents and stacks

Fantech Model HP220 fan  
with rain cap connected  
to 6-inch diameter riser

4-inch diameter  
header duct

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

TITLE	Proposed SSD Layout		DATE	9/22/2011
			SCALE	N.T.S.
FIGURE	6	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York	DRAWN BY	T.R.B.
DRAWING NO.	2011-M5		APPRO. BY	E.A.W.

TABLE 1  
Analytical Results for Volatile Organic Compounds in Soil Samples  
Elks Plaza, LLC  
157-189 West Merrick Road  
Freeport, New York

Sample ID	EP-01 (1-2)	EP-01 (7-8)	EP-01 (12-13)	*EP-01 (XX)	EP-01 (13-15)	*Part 376	*Part 375	*Part 375
Sample Depth	1-2 ft	7-8 ft	12-13 ft	12-13 ft	13-15 ft	Soil Cleanup	Soil Cleanup	Soil Cleanup
Matrix	Soil	Soil	Soil	Soil	Soil	Commercial	for Protection	Unrestricted
Date Sampled	6/15/2011	6/15/2011	6/15/2011	6/15/2011	6/15/2011	Use	of Groundwater	Use
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics								
Acetone	ND	ND	ND	ND	ND	500,000	50	50
Benzene	ND	ND	ND	ND	ND	44,000	60	60
Bromochloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	500,000	300	120
Carbon disulfide	ND	ND	ND	ND	ND	NVG	2,700	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	22,000	760	760
Chlorobenzene	ND	ND	ND	ND	ND	500,000	1,100	1,100
Chloroethane	ND	ND	ND	ND	ND	NVG	1,000	NVG
Chloroform	ND	ND	ND	ND	ND	350,000	370	370
Chloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	500,000	1,100	1,100
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	280,000	2,400	2,400
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	130,000	1,600	1,600
Dichlorodifluoromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	240,000	270	270
1,2-Dichloroethane	ND	ND	ND	ND	ND	30,000	20	20
1,1-Dichloroethene	ND	ND	ND	ND	ND	500,000	330	330
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	500,000	250	250
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	600,000	190	190
1,2-Dichloropropane	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	130,000	100	100
Ethylbenzene	ND	ND	ND	ND	ND	390,000	1,000	1,000
Freon 113	ND	ND	ND	ND	ND	NVG	6,000	NVG
2-Hexanone	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	NVG	2,300	NVG
Methyl Acetate	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	500,000	930	930
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	NVG	1,000	NVG
Methylene chloride	ND	ND	ND	ND	ND	500,000	50	50
Styrene	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	NVG	600	NVG
Tetrachloroethene	21.6	ND	ND	ND	ND	150,000	1,300	1,300
Toluene	ND	ND	ND	ND	ND	500,000	700	700
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	NVG	3,400	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	500,000	680	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	200,000	470	470
Trichlorofluoromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Vinyl chloride	ND	ND	ND	ND	ND	13,000	20	20
m,p-Xylene	ND	ND	ND	ND	ND	500,000	1,600	260
o-Xylene	ND	ND	ND	ND	ND	500,000	1,600	260
Xylene (Total)	ND	ND	ND	ND	ND	500,000	1,600	260

**Notes:**

All concentrations are reported in micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NYG=No value given

\*EP-01 (XX)12-13fl is the duplicate of EP-01 (12-13fl)

<sup>6</sup> NYCRR Part 375: Environmental Remediation Programs: Subparts 375-1 to 375-4 & 375-6; December 14, 2006.

**Table 2**  
**Pre Test Data**  
**Elks Plaza, LLC**  
**157-189 West Merrick Road**  
**Freeport, NY**

<u>Locations</u>	<u>High</u>	<u>Low</u>	<u>Avg.</u>
NW	-0.002	-0.003	-0.0025
NE	0.001	-0.005	-0.002
SW	NA	NA	Test Vent
SE	0.006	0.006	0.006
#1	0.003	-0.001	0.001
#2	0.003	-0.001	0.001
#3	-0.001	0.004	0.0015
#4	-0.001	-0.001	-0.001
#5	-0.006	-0.008	-0.007

**Table 3**  
**South West Vent Test**  
**Elks Plaza, LLC**  
**157-189 West Merrick Road**  
**Freeport, NY**

SW Vent Test # 1				
<u>Locations</u>	<u>Field Reading</u> (Inches of H2O)	<u>Pre Test Data</u> (Inches of H2O)	<u>Adjusted Field</u> Readings(Inches of H2O)	<u>Approx. Distance</u> from SW Vent (Feet)
NW	-0.044	-0.0025	-0.0415	28
NE	-0.013	-0.002	-0.011	43
SW	-1.8	No Value	-1.8	NA
SE	-0.015	0.006	-0.021	32
#1	-0.021	0.001	-0.022	22
#2	-0.012	0.001	-0.013	38
#3	-0.016	0.0015	-0.0175	55
#4	0	-0.001	Non-Responsive	50
#5	0.001 to -0.009	-0.007	NA	77
SW Vent Test # 2				
<u>Locations</u>	<u>Field Reading</u> (Inches of H2O)	<u>Pre Test Data</u> (Inches of H2O)	<u>Adjusted Field</u> Readings(Inches of H2O)	<u>Approx. Distance</u> from SW Vent (Feet)
NW	-0.06	-0.0025	-0.0575	28
NE	-0.016	-0.002	-0.014	43
SW	-2.2	No Value	-2.2	NA
SE	-0.011	0.006	-0.017	32
#1	-0.022	0.001	-0.023	22
#2	-0.01	0.001	-0.011	38
#3	-0.016	0.0015	-0.0175	55
#4	0	-0.001	Non-Responsive	50
#5	-0.018	-0.007	-0.011	77
SW Vent Test # 3				
<u>Locations</u>	<u>Field Reading</u> (Inches of H2O)	<u>Pre Test Data</u> (Inches of H2O)	<u>Adjusted Field</u> Readings(Inches of H2O)	<u>Approx. Distance</u> from SW Vent (Feet)
NW	-0.11	-0.0025	-0.1075	28
NE	-0.02	-0.002	-0.018	43
SW	-4.1	No Value	-4.1	NA
SE	-0.03	0.006	-0.036	32
#1	-0.044	0.001	-0.045	22
#2	-0.017	0.001	-0.018	38
#3	-0.02	0.0015	-0.0215	55
#4	0	-0.001	Non-Responsive	50
#5	-0.01	-0.007	-0.003	77



Table 4  
South West Vent Test  
Elks Plaza, LLC  
157-189 West Merrick Road  
Freeport, NY

NE Vent Test # 1				
Locations	Field Reading (Inches of H2O)	Pre Test Data (Inches of H2O)	Adjusted Field Readings(Inches of H2O)	Approx. Distance from NE Vent (Feet)
NW	-0.026	-0.0025	-0.0235	28
NE	-1.8	-0.002	-1.798	NA
SW	-0.017	No Value	-0.017	43
SE	-0.043	0.006	-0.049	32
#1	-0.019	0.001	-0.02	37
#2	-0.068	0.001	-0.069	27
#3	-0.118	0.0015	-0.1195	14
#4	0	-0.001	Non-Responsive	20
#5	-0.013	-0.007	-0.006	48
NE Vent Test # 2				
Locations	Field Reading (Inches of H2O)	Pre Test Data (Inches of H2O)	Adjusted Field Readings(Inches of H2O)	Approx. Distance from NE Vent (Feet)
NW	-0.023	-0.0025	-0.0205	28
NE	-2.3	-0.002	-2.298	NA
SW	-0.012	No Value	-0.012	43
SE	-0.04	0.006	-0.046	32
#1	-0.028	0.001	-0.029	37
#2	-0.088	0.001	-0.089	27
#3	-0.15	0.0015	-0.1515	14
#4	0	-0.001	Non-Responsive	20
#5	-0.02	-0.007	-0.013	48
NE Vent Test # 3				
Locations	Field Reading (Inches of H2O)	Pre Test Data (Inches of H2O)	Adjusted Field Readings(Inches of H2O)	Approx. Distance from NE Vent (Feet)
NW	-0.045	-0.0025	-0.0425	28
NE	-4	-0.002	-3.998	NA
SW	-0.013	No Value	-0.013	43
SE	-0.082	0.006	-0.088	32
#1	-0.047	0.001	-0.048	37
#2	-0.147	0.001	-0.148	27
#3	-0.285	0.0015	-0.2865	14
#4	0	-0.001	Non-Responsive	20
#5	-0.04	-0.007	-0.033	48

**Table 5**  
**Pilot Test Laboratory Data**  
**Elks Plaza, Freeport, NY**

Sample ID: Date Collected ANALYTE	EP-SW-Grab 8/18/2011 UG/M3	EP-NE-Grab 8/18/2011 UG/M3
1,1 Dichloroethane	< 8.10	< 8.10
1,1 Dichloroethane	< 3.97	< 3.97
1,2 Dibromoethane	< 15.38	< 15.38
1,2 Dichlorobenzene (v)	< 30.08	< 30.08
1,2 Dichloroethane	< 20.26	< 20.26
1,2 Dichloropropane	< 23.12	< 23.12
1,2-Dichlorotetrafluoroethane	< 13.99	< 13.99
1,3 Butadiene	< 22.10	< 22.10
1,3 Dichlorobenzene (v)	< 12.03	< 12.03
1,4 Dichlorobenzene (v)	< 30.08	< 30.08
1,4-Dioxane	< 36.01	< 36.01
111 Trichloroethane	< 10.92	< 10.92
112 Trichloroethane	< 10.92	< 10.92
1122Tetrachloroethane	< 13.74	< 13.74
124-Trimethylbenzene	< 24.60	< 24.60
135-Trimethylbenzene	< 24.60	< 24.60
2,2,4-Trimethylpentane	< 23.33	< 23.33
2-Hexanone	< 20.46	< 20.46
3-Chloropropene	< 15.66	< 15.66
Acetone	< 23.78	< 23.78
Acrylonitrile	< 21.69	< 21.69
Benzene	< 6.38	< 6.38
Benzyl Chloride	< 10.36	< 10.36
Bromodichloromethane	< 13.28	< 13.26
Bromoform	< 20.70	< 20.70
Bromomethane	< 7.77	< 7.77
c-1,2-Dichloroethene	< 7.93	< 7.93
c-1,3Dichloropropene	< 22.71	< 22.71
Carbon disulfide	< 15.55	< 15.55
Carbon Tetrachloride	< 25.18	< 25.18
Chlorobenzene	< 9.22	< 9.22
Chlorodibromomethane	< 16.86	< 16.86
Chloroethane	< 26.40	< 26.40
Chloroform	< 9.74	< 9.74
Chloromethane	< 20.67	< 20.67
Cyclohexane	< 6.89	< 6.89
Dichlorodifluoromethane	< 9.90	< 9.90
Ethyl Acetate	< 180.05	< 180.05
Ethyl alcohol	< 37.66	< 37.66
Ethyl Benzene	< 8.68	< 8.68
Freon 113	< 7.67	< 7.67
Heptane	< 20.46	< 20.46
Hexachlorobutadiene	< 53.35	< 53.35
Hexane	< 17.64	< 17.64
Isopropyl Alcohol	< 122.75	< 122.75
m + p Xylene	< 21.73	< 21.73
Methyl Ethyl Ketone	< 29.46	< 29.46
Methylene Chloride	< 6.95	< 6.95
Methylisobutylketone	< 41.01	< 41.01
o Xylene	< 8.69	< 8.69
p-Ethyltoluene	< 24.56	< 24.56
Propylene	< 8.60	< 8.60
Styrene	< 8.51	< 8.51
t-1,2-Dichloroethene	< 7.93	< 7.93
t-1,3Dichloropropene	< 9.08	< 9.08
ter. Butyl Methyl Ether	< 7.04	< 7.04
tert. Butyl Alcohol	< 60.56	< 60.56
Tetrachloroethene	94,990.00	210,335.00
Tetrahydrofuran	< 14.74	< 14.74
Toluene	< 7.53	< 7.53
Trichloroethene	182.68	381.48
Trichlorofluoromethane	< 11.24	< 11.24
Vinyl Acetate	< 17.60	< 17.60
Vinyl Bromide	< 8.76	< 8.76
Vinyl Chloride	< 5.12	< 5.12

**D - MONITORING WELL BORING AND  
CONSTRUCTION LOGS**

# FIELD BORING LOG

BOREHOLE NO.: **MW-1**

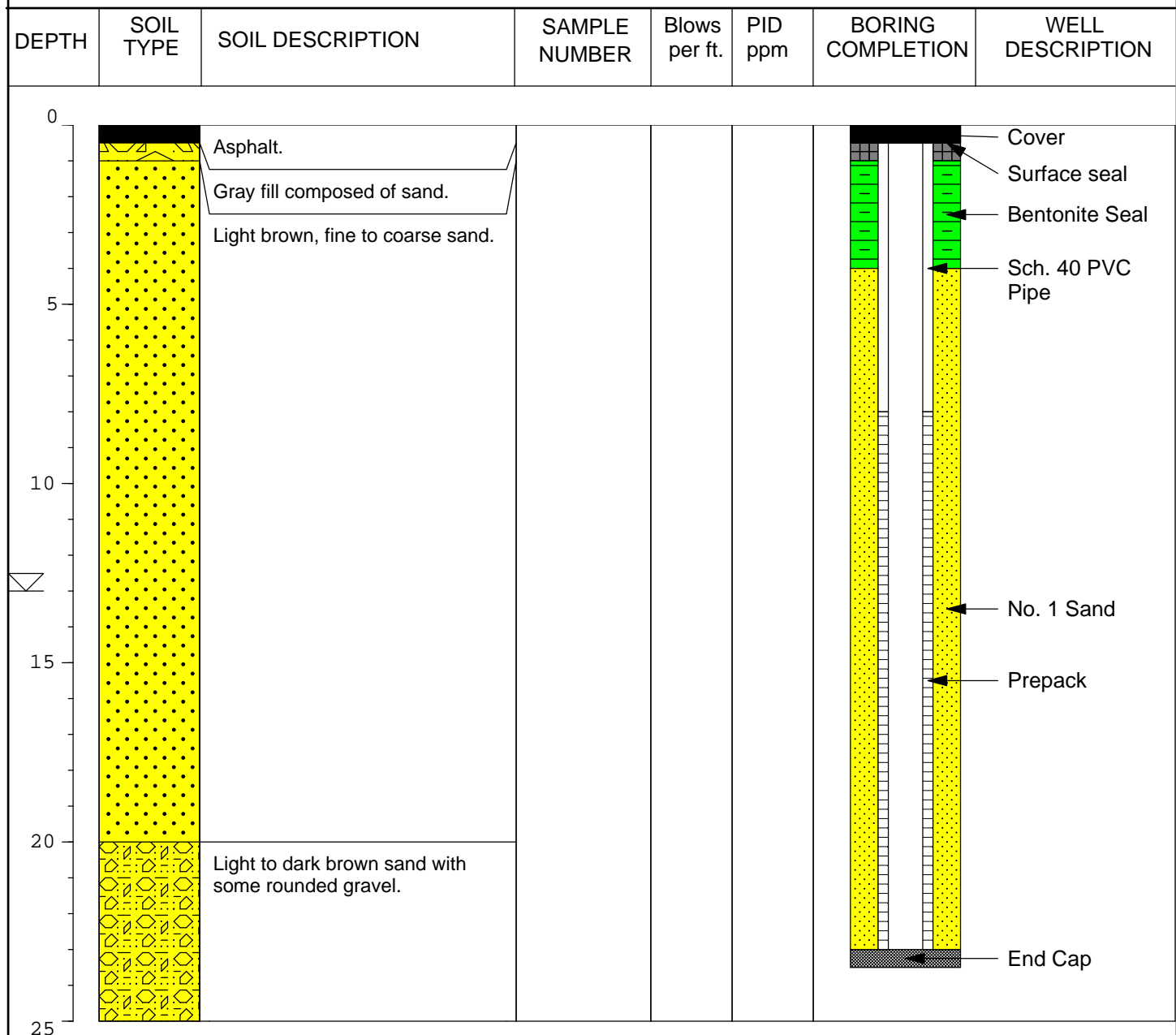
TOTAL DEPTH: **25 ft.**

## PROJECT INFORMATION

PROJECT: **Elks Plaza**  
 SITE LOCATION: **Freeport, NY**  
 JOB NO.: **Elks Plaza**  
 LOGGED BY: **Tom Brown**  
 PROJECT MANAGER: **Eric Weinstock**  
 DATES DRILLED: **11/2/12**

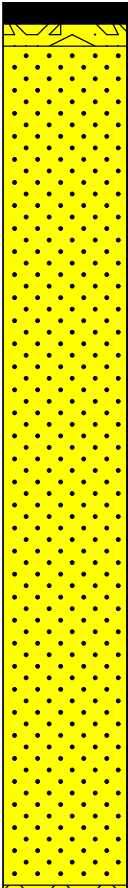
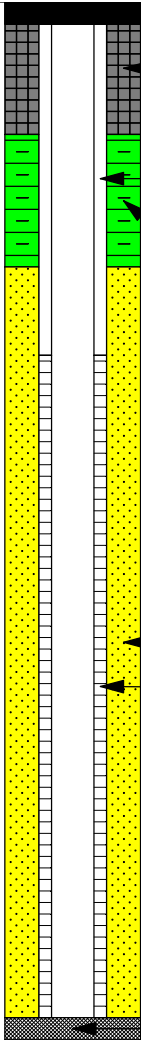
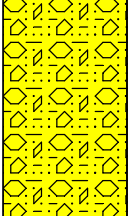
## DRILLING INFORMATION

DRILLING CO.: **Zebra Environmental**  
 DRILLER: **John & Jose**  
 RIG TYPE: **Geoprobe 6610DT**  
 METHOD OF DRILLING: **Direct Push**  
 SAMPLING METHODS: **NA**  
 HAMMER WT./DROP **NA**





PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Elks Plaza			DRILLING CO.:	Zebra Environmental		
SITE LOCATION:	Freeport, NY			DRILLER:	John & Jose		
JOB NO.:	Elks Plaza			RIG TYPE:	Geoprobe 6610DT		
LOGGED BY:	Tom Brown			METHOD OF DRILLING:	Direct Push		
PROJECT MANAGER:	Eric Weinstock			SAMPLING METHODS:	Soil Sleeves		
DATES DRILLED:	11/2/12			HAMMER WT./DROP	NA		

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		Asphalt.	1	Push			Cover
		Gray fill composed of sand.					Surface seal
		Light brown, fine to coarse sand.					Sch. 40 PVC Pipe Bentonite Seal
5			2	Push			
10			3	Push			
15							No. 1 Sand Prepack
20			4	Push			End Cap
25		Light to dark brown sand with some rounded gravel.					

# FIELD BORING LOG

BOREHOLE NO.: **MW-3**

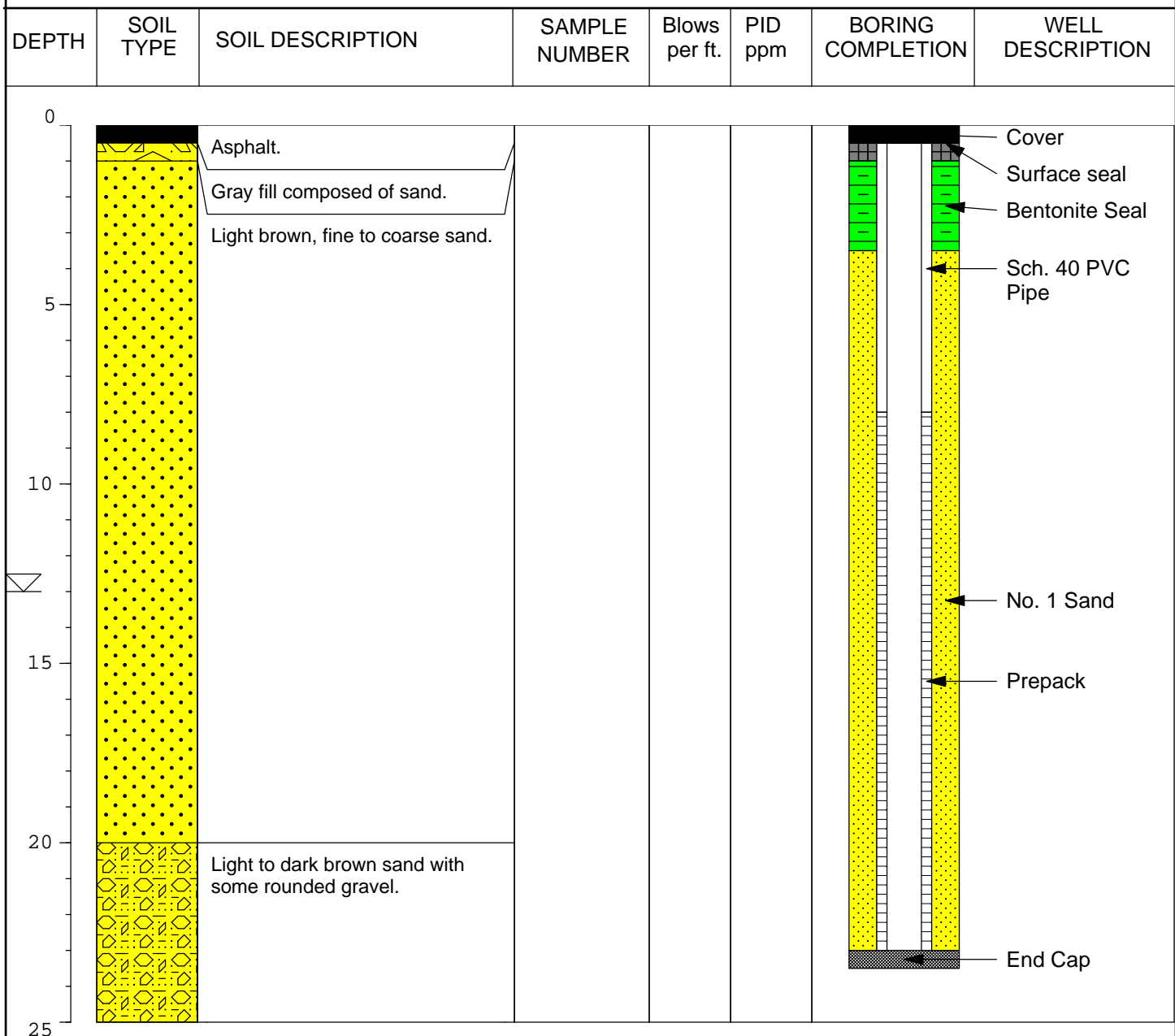
TOTAL DEPTH: **25 ft.**

## PROJECT INFORMATION

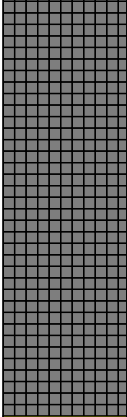
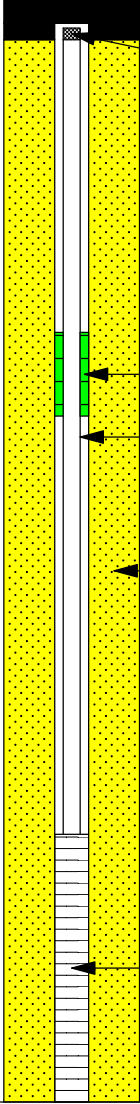
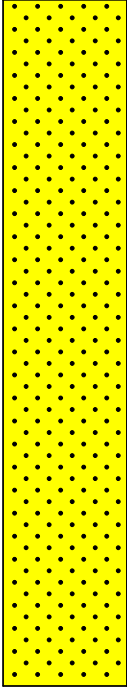
PROJECT: **Elks Plaza**  
 SITE LOCATION: **Freeport, NY**  
 JOB NO.: **Elks Plaza**  
 LOGGED BY: **Tom Brown**  
 PROJECT MANAGER: **Eric Weinstock**  
 DATES DRILLED: **11/2/12**

## DRILLING INFORMATION

DRILLING CO.: **Zebra Environmental**  
 DRILLER: **John & Jose**  
 RIG TYPE: **Geoprobe 6610DT**  
 METHOD OF DRILLING: **Direct Push**  
 SAMPLING METHODS: **NA**  
 HAMMER WT./DROP **NA**



PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	<b>Elks Plaza</b>			DRILLING CO.:	<b>NA</b>		
SITE LOCATION:	<b>Woodward Childrens Center</b>			DRILLER:	<b>Jason &amp; Tom</b>		
JOB NO.:	<b>Elks Plaza</b>			RIG TYPE:	<b>Hammer Drill</b>		
LOGGED BY:	<b>Tom Brown</b>			METHOD OF DRILLING:	<b>NA</b>		
PROJECT MANAGER:	<b>Eric Weinstock</b>			SAMPLING METHODS:	<b>8 hr. Summa Can</b>		
DATES DRILLED:	<b>8/21/12</b>			HAMMER WT./DROP	<b>NA</b>		

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0.0		Concrete Slab.					Cover Plug
0.1							
0.2		Light brown, fine sand.					Bees Wax 1/4" OD Stainless Steel
0.3							No. 2 Sand
0.4							
0.5							
0.6							Slotted Stainless Steel Sample Point

**E - GROUNDWATER MONITORING WELL SAMPLING  
LOG FORM**

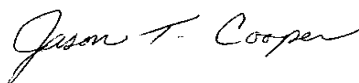
## Water Quality Measurement Log

## F - QUALITY ASSURANCE PROJECT PLAN



## Quality Assurance Project Plan

**1.1 Introduction** - The following Quality Assurance Project Plan ("QAPP") has been prepared specifically for the SMP in connection with the Elks Plaza, LLC at 157-189 West Merrick Road Freeport, New York. This Plan was prepared and approved as stated below.



Prepared by: \_\_\_\_\_  
Jason Cooper, Quality Assurance Officer

Date: 5/14/14



Approved by: \_\_\_\_\_  
Eric A. Weinstock, V.P., Project Manager

Date: 5/14/14

## 1.2 QAPP - Table of Contents

The following elements are included in this QAPP:

- Title Page and Introduction
- Table of Contents
- Project Description
- Project Organization
- Quality Assurance Objectives for Data Measurements
- Sampling Procedure
- Sample and Document Custody Procedures
- Calibration Procedures and Frequency
- Analytical Procedures
- Data Reduction, Validation and Reporting
- Internal Quality Control Checks
- Performance and System Audits
- Preventive Maintenance
- Data Measurement Assessment Procedures
- Corrective Action
- Quality Assurance Reports and Management

**1.3 Project Description** - The SMP subject to this QAPP have been prepared to address the following issues:

- Monitor groundwater quality below the site for volatile organic compounds (VOCs).
- Monitor the sub-slab vapor and indoor air quality at a neighboring building for VOCs;
- Monitor the sub-slab vapor and indoor air quality at the site for VOCs prior to terminating the SSD system; and
- Collect and analyze one site-representative soil sample for the full TCL/TAL list of parameters.

The investigative methods that will be used include soil sampling, monitoring well sampling, soil vapor and ambient air sampling. These are described in detail in the SMP.

**1.4 Project Organization** – Eric Weinstock will serve as the Project Manager (PM) and will be responsible for the overall scheduling and performance of all investigative activities.

Jason Cooper will serve as the Quality Assurance Officer (QAO) for this project. His duties will include:

- Review of laboratory data packages
- Interface with laboratory
- Performance of Field Audits

Experienced CA RICH staff will perform and/or oversee completion of all the field activities described in the SMP.

### **1.5 Quality Assurance Objectives and Data Measurement**

**Chemical Analysis** – All environmental samples will delivered to a New York State-Certified laboratory contracted to CA RICH for chemical analysis. This data is intended to determine the potential for groundwater, soil and soil gas vapor to contain detectable concentrations of VOCs. Soil vapor and ambient air will be chemically analyzed utilizing the procedures and protocols described in Sampling, Sample Preparation, & Analysis Requirements of EPA Compendium Method T0-15. Each stainless steel SUMMA air sampling canister required for analysis utilizing EPA Method T0-15 will be specially pre-calibrated and prepared for the requisite six liter sampling volumes. The laboratory will follow the NYSDEC – Analytical Services Protocol dated 2005 for groundwater and soil samples and the analytical reports will be prepared in NYSDEC ASP Category B deliverables. Groundwater/soil samples will be placed in iced-filled coolers and delivered to the laboratory within 48 hours of collection.

Quality assurance objectives are generally defined in terms of five parameters:

- **Representativeness** - Representativeness is the degree to which sampling data accurately and precisely represents site conditions, and is dependent on sampling and analytical variability. The SMP has been designed to assess the presence of the constituents in the target media at the time of sampling. The Plan presents the rationale for sample quantities and location. The Plan also presents field sampling methodologies and laboratory analytical methodologies.

The use of the prescribed field and laboratory analytical methods with associated holding times and preservation requirements are intended to provide representative data. Further discussion of QC checks is presented in Section 1.11.

- **Comparability** - Comparability is the degree of confidence with which one data set can be compared to another data set. Comparability between this investigation and to the extent possible, with existing data will be maintained through consistent sampling and analytical methodology set forth in the QAPP; the SMP; the NYSDEC ASP analytical methods (2005) with NYSDEC ASP QA/QC requirements (2005); and through use of QA/QC procedures and appropriately trained personnel.
- **Completeness** - Completeness is defined as a measure of the amount of valid data obtained from a sampling event compared to the amount that was expected to be obtained under normal conditions. This will be determined upon assessment of the analytical results.
- **Precision** - Precision is the measure of reproducibility of sample results. The goal is to maintain a level of analytical precision consistent with the objectives of the SMP. To maximize precision, sampling and analytical procedures will be followed. All work for the investigation phase of this project will adhere to established protocols presented in the QAPP, and the SMP. Checks for analytical precision will include the analysis of matrix spike duplicated, laboratory duplicates, and field duplicates. Checks for field measurement precision will include obtaining duplicate field measurements. Further discussion of precision QC checks is provided in Section 1.11.
- **Accuracy** - Accuracy is the deviation of a measurement from the true value of a known standard. Both field and analytical accuracy will be monitored through initial and continuing calibration of instruments. In addition, internal standards, matrix spikes, blank spikes, and surrogates (e.g. system monitoring compounds) will be used to assess the accuracy of the laboratory analytical data.

**1.6 Sampling Procedures** - The sampling procedures that will be employed are discussed in detail in the SMP.

### **1.7 Sample and Document Custody Procedures**

- **General** - The Chain-of-Custody program allows for the tracing of possession and handling of the sample from its time of collection through its chemical analysis in the laboratory. The chain-of-custody program at this site will include:
  - Sample labels
  - Chain-of-Custody records
  - Field records

- **Sample Container Details**

<b>Sample Matrix &amp; Parameters</b>	<b>Container &amp; Preservation</b>	<b>Method</b>	<b>Holding Time*</b>
<b>Groundwater</b>			
TCL VOCs	Two 40 mil vials & ice	8260C	14 days
<b>Soil</b>			
TCL VOCs	Two 2 oz. glass jars & ice	8260C	14 days
TCL SVOCs	Two 8 oz. glass jars & Ice	8270D	14 days
TCL Pesticides	Included in same 8 oz. jars	8081B	14 days
TCL PCBs	Included in same 8 oz. jars	8082A	14 days
TAL Metals	Included in same 8 oz. jars	SW6010C SW7471B	28 days for Hg Others 6 mo.
<b>Soil Vapor</b>			
VOCs	One 6-liter SUMMA canister	TO-15	30 days
*Time is calculated from date of collection			

- **Sample Labels** - To prevent misidentification of samples, a label will be affixed to the sample container and will contain the following information:
  - Site Name
  - Sample identification number
  - Date and time of collection
  - Initials of Sampler
  - Preservation (if any)
  - Type of analysis to be conducted.
- **Chain-of-Custody Records** - To establish the documentation necessary to trace sample possession from the time of collection, a chain-of-custody record will be filled out and will accompany samples at all times. The record will contain the following information:
  - Project name:
  - Printed name and signature of samplers
  - Sample Identification
  - Date and time of collection
  - Sampling location
  - Number of containers for each sample
  - Signature of individuals involved in sample transfer (when relinquishing and accepting samples)
  - Inclusive dates and times of possession.
- **Field Records** - Field records will be maintained during each sampling effort in a logbook. All aspects of sample collection, handling and visual observations will be recorded. All sample collection equipment, field analytical equipment and equipment utilized to make physical measurements will be identified in the field logbook.

All calculations, results and calibration data for field sampling, field analytical and field physical measurement equipment will also be recorded in the field logbook. Entries will be dated and initialed. Entries will be made in ink, and will be legible.

**1.8 Calibration Procedures and Frequency** - The contracted laboratory will follow the NYSDEC Category-B requirements for equipment calibration procedures and frequency. Soil vapor and ambient air samples soil vapor will be analyzed utilizing EPA Compendium Method T0-15

**1.9 Analytical Procedures** - All laboratory groundwater analysis will follow NYSDEC ASP (2005) protocols with Category B deliverables. The following samples will be collected for QA/QC purposes: 1 trip blank, 1 field blank, 1 duplicate sample, 1 matrix spike, and 1 matrix spike duplicate per every twenty field samples per sample matrix. A qualified data validator will review the laboratory data and a Data Usability Summary Report (DUSR) will be prepared.

Soil vapor and ambient air samples will be chemically analyzed utilizing the procedures and protocols described in Sampling, Sample Preparation, & Analysis Requirements of EPA Compendium Method T0-15. Each stainless steel SUMMA air sampling canister required for analysis utilizing EPA Method T0-15 will be specially pre-calibrated and prepared for the requisite six liter sampling volumes.

#### **1.10 Data Reduction, Validation and Reporting**

- **Field Data** - All field data recorded in logbooks or on log sheets will be evaluated in the Office and transferred to word processor text by field personnel or clerical staff. PID readings will be included on the logs. The QAO and/or PM will review this data for accuracy and completeness.
- **Laboratory Data** - The laboratory will transfer the instrument readings to laboratory report forms. A qualified Firm will perform independent data validation of all analytical data using NYSDEC DUSR protocols.

The Data Validator will provide CA RICH with a Data Validation Summary Report. The QAO will review the summary report as well as other field data and prepare a Data Usability Report. CA RICH will prepare summary tables of the validated analytical data using an imported spreadsheet received from directly the laboratory.

#### **1.11 Internal Quality Control Checks**

Both field and laboratory quality control checks are proposed for this project. In the event that there are any deviations from these checks, the Project Manager and Quality Assurance Officer will be notified. The proposed field and laboratory control checks are discussed below.

##### **Field Quality Control Checks**

- **Field Measurements** - To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.
- **Sample Containers** - Certified-clean sample containers will be supplied by the contracted laboratory.

- **Field Duplicates** – Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the SMP. Field duplicates will be analyzed every 20 field samples.
- **Field Rinse Blanks** – Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Field rinse blanks will be prepared by filling sample containers with analyte-free water (supplied by the laboratory), which has been routed through a cleaned sampling device.
- **Trip Blanks** – Trip blanks will be used to assess whether site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once per day, and will be analyzed for volatile organic constituents. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory), which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for volatile organic constituents.

### 1.12 Performance and Systems Audits

Performance and systems audits will be completed in the field and the laboratory during the investigation phase of this project as described below.

- **Field Audits** – CA RICH's Project Manager and Quality Assurance Officer will monitor field performance and field meter calibrations to verify that measurements are taken according to established protocols. The Project Manager will review all field logs. In addition, the Project Manager and the Quality Assurance Officer will review the field rinse and trip blank data to identify potential deficiencies in field sampling and cleaning procedures.
- **Laboratory Audits** – The contracted laboratory will perform internal audits consistent with NYSDEC ASP (2005) and EPA Method T0-15.

### 1.13 Preventive Maintenance

Preventive maintenance schedules have been developed for both field and laboratory instruments. A summary of the maintenance activities to be performed is presented below.

- **Field Instruments and Equipment** - Prior to any field sampling, each piece of field equipment will be inspected to assure it is operational. If the equipment is not operational, it must be serviced prior to use. All meters which require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, it is the responsibility of the field personnel to follow the maintenance schedule and arrange for prompt service.
- **Laboratory Instruments and Equipment** - The laboratory will document Laboratory instrument and equipment procedures. Documentation includes details of any observed problems, corrective measure(s), routine maintenance, and instrument repair (which will include information regarding the repair and the individual who performed the repair).

Preventive maintenance of laboratory equipment generally will follow the guidelines recommended by the manufacturer. A malfunctioning instrument will be repaired immediately by in-house staff or through a service call from the manufacturer.



#### 1.14 Data Assessment Procedures

The analytical data generated during implementation of the SMP will be evaluated with respect to precision, accuracy, and completeness. The procedures utilized when assessing data precision, accuracy, and completeness are presented below.

- **Data Precision Assessment Procedures** - Field precision is difficult to measure because of temporal variations in field parameters. However, precision will be controlled through the use of experienced field personnel, properly calibrated meters, and duplicate field measurements. Field duplicates will be used to assess precision for the entire measurement system including sampling, handling, shipping, storage, preparation and analysis.

Laboratory data precision for organic analyses will be monitored through the use of matrix spike duplicate sample analyses. For other parameters, laboratory data precision will be monitored through the use of field duplicates and/or laboratory duplicates.

The precision of data will be measured by calculation of the standard deviation (SD) and the coefficient of variation (CV) of duplicate sample sets. The SD and CV are calculated for duplicate sample sets by:

$$SD = (A-B)/1.414$$
$$CV = ((A-B)/1.414/((A+B)/2))$$

Where:

A = Analytical result from one of two duplicate measurements

B = Analytical result from the second measurement.

Where appropriate, A and B may be either the raw measurement or an appropriate mathematical transformation of the raw measurement (e.g., the logarithm of the concentration of a substance).

Alternately, the relative percent difference (RPD) can be calculated by the following equation:

$$RPD = \frac{(A-B)}{(A+B)/2} \times 100$$

$$RPD = 1.414 (CV)(100)$$

- **Data Accuracy Assessment Procedures** - The accuracy of field measurements will be controlled by experienced field personnel, properly calibrated field meters, and adherence to established protocols. The accuracy of field meters will be assessed by review of calibration and maintenance logs.

Laboratory accuracy will be assessed via the use of matrix spikes, surrogate spikes, and internal standards. Where available and appropriate, QA performance standards will be analyzed periodically to assess laboratory accuracy. Accuracy will be calculated as a percent recovery as follows:

$$Accuracy = \frac{A-X}{B} \times 100$$

Where:

A = Value measured in spiked sample or standard  
X = Value measured in original sample  
B = True value of amount added to sample or true value of standard

This formula is derived under the assumption of constant accuracy over the original and spiked measurements. If any accuracy calculated by this formula is outside of the acceptable levels, data will be evaluated to determine whether the deviation represents unacceptable accuracy, or variable, but acceptable accuracy. Accuracy objectives for matrix spike recoveries and surrogate recovery objectives are identified in the NYSDEC, ASP (2005).

- **Data Completeness Assessment Procedures** - Completeness of a field or laboratory data set will be calculated by comparing the number of samples collected or analyzed to the proposed number.

$$\text{Completeness} = \frac{\text{No. Valid Samples Collected or Analyzed}}{\text{No. Proposed Samples Collected or Analyzed}} \times 100$$

As general guidelines, overall project completeness is expected to be at least 90 percent. The assessment of completeness will require professional judgment to determine data usability for intended purposes.

#### 1.15 Corrective Action

Corrective actions are required when field or analytical data are not within the objectives specified in this QAPP, or the SMP. Corrective actions include procedures to promptly investigate, document, evaluate, and correct data collection and/or analytical procedures. Field and laboratory corrective action procedures for this project are described below.

- **Field Procedures** - When conducting the investigative fieldwork, if a condition is noted that would have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action implemented will be documented as a memo to the project file and reported to the Project Manager.

Examples of situations, which would require corrective actions, are provided below:

- Protocols as defined by the QAPP and the SMP have not been followed;
- Equipment is not in proper working order or properly calibrated;
- QC requirements have not been met; and
- Issues resulting from performance or systems audits.

Project field personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

- **Laboratory Procedures** - In the laboratory, when a condition is noted to have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action to be taken will be documented, and reported to the Quality Assurance Officer.

Corrective action may be initiated, at a minimum, under the following conditions:

- Specific laboratory analytical protocols have not been followed;
- Predetermined data acceptance standards are not obtained;
- Equipment is not in proper working order or calibrated;
- Sample and test results are not completely traceable;
- QC requirements have not been met; and
- Issues resulting from performance or systems audits.

Laboratory personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

#### **1.16 Quality Assurance Reports and Management**

- **Internal Reporting** - The analytical laboratory will submit analytical reports using NYSDEC ASP (2005), Category B requirements. The analytical reports will be submitted to the Data Validator for review. Supporting data (i.e., historic data, related field or laboratory data) will also be reviewed to evaluate data quality, as appropriate. The Quality Assurance Officer will incorporate results of data validation reports (if any) and assessments of data usability into a summary report. This report will be filed in the project file and will include the following:
  - Assessment of data accuracy, precision, and completeness for field & laboratory data;
  - Results of the performance and systems audits;
  - Significant QA/AC problems, solutions, corrections, and potential consequences;
  - Analytical data validation report; and
  - Data usability report.
- **Reporting** - The Remedial Investigation Report will contain a separate QA/QC section including the DUSR and a summary of data collected and/or used as appropriate to the project DQOs. The Quality Assurance Officer will prepare the QA/QC summary tables and reports and memoranda documenting the data assessment and validation.

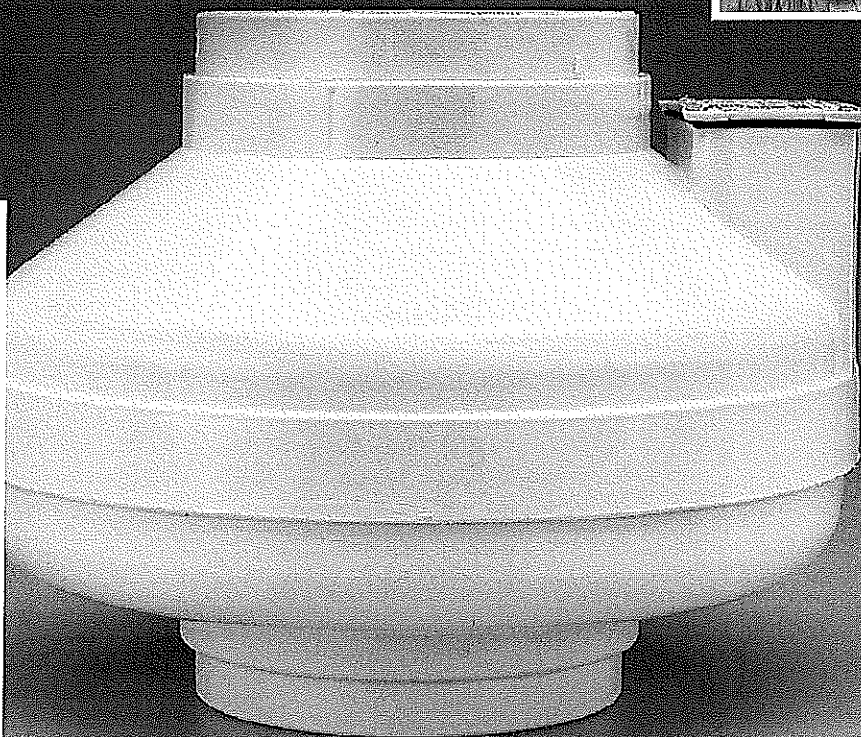
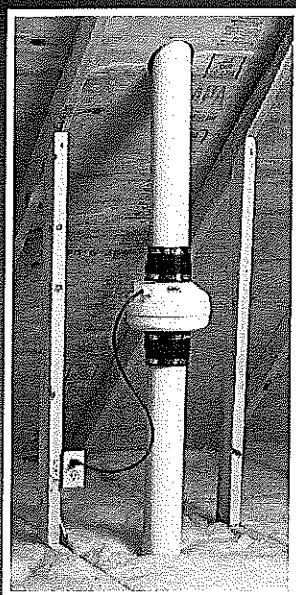
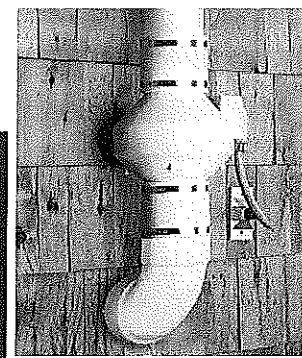
## G - EC SYSTEM COMPONENT MANUAL



## HP SERIES

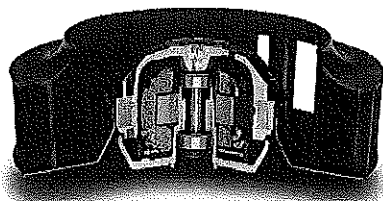
FANS FOR RADON APPLICATIONS

**WITH IMPROVED UV RESISTANCE!**



### TRUST THE INDUSTRY STANDARD. **HERE'S WHY:**

Don't put your reputation at stake by installing a fan you know won't perform like a Fantech! For nearly twenty years, Fantech has manufactured quality ventilation equipment for Radon applications. Fantech is the fan Radon contractors have turned to in over 1,000,000 successful Radon installations worldwide.



Fantech external rotor motor

### FANTECH HP SERIES FANS MEET THE CHALLENGES OF RADON APPLICATIONS:

#### HOUSING

- UV resistant, UL Listed durable plastic
- UL Listed for use in commercial applications
- Factory sealed to prevent leakage
- Watertight electrical terminal box
- Approved for mounting in wet locations - i.e. Outdoors

#### MOTOR

- Totally enclosed for protection
- High efficiency EBM motorized impeller
- Automatic reset thermal overload protection
- Average life expectancy of 7-10 years under continuous load conditions

#### RELIABILITY

- Five Year Full Factory Warranty
- Over 1,000,000 successful radon installations worldwide

IMPROVING INDOOR AIR QUALITY THROUGH BETTER VENTILATION  
[www.fantech.net](http://www.fantech.net)

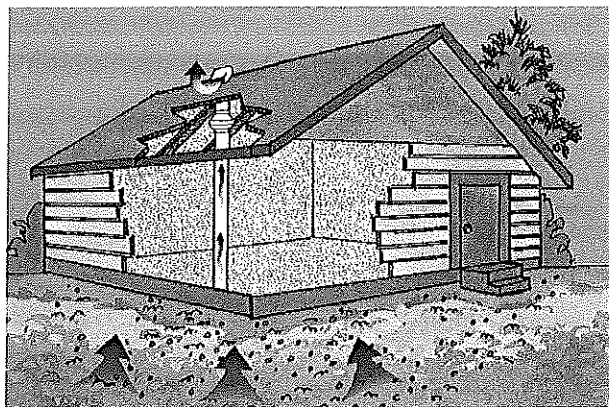


## HP Series Fans are Specially Designed with Higher Pressure Capabilities for Radon Mitigation Applications

MOST RADON MITIGATORS WHO PREVIOUSLY USED THE FANTECH FR SERIES FANS HAVE SWITCHED TO THE NEW HP SERIES.

### PERFORMANCE DATA

Fan Model	Volts	Wattage Range	Max. Amps	CFM vs. Static Pressure In Inches W.G.								Max. Ps
				0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	
HP2133	115	14 - 20	0.17	134	68	19	-	-	-	-	-	0.84
HP2190	115	60 - 85	0.78	163	126	104	81	58	35	15	-	1.93
HP175	115	44 - 65	0.57	151	112	91	70	40	12	-	-	1.66
HP190	115	60 - 85	0.78	157	123	106	89	67	45	18	1	2.01
HP220	115	85 - 152	1.30	344	260	226	193	166	137	102	58	2.46



**HVI**  
MEMBER™

### PERFORMANCE CURVES

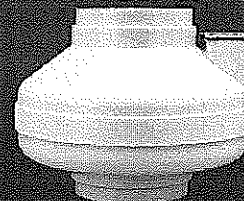
Fantech provides you with independently tested performance specifications.

The performance curves shown in this brochure are representative of the actual test results recorded at Texas Engineering Experiment Station/Energy Systems Lab, a recognized testing authority for HVI. Testing was done in accordance with AMCA Standard 210-85 and HVI 916 Test Procedures. Performance graphs show air flow vs. static pressure.

Use of HP Series fans in low resistance applications such as bathroom venting will result in elevated sound levels. We suggest FR Series or other Fantech fans for such applications.

### HP FEATURES INCLUDE

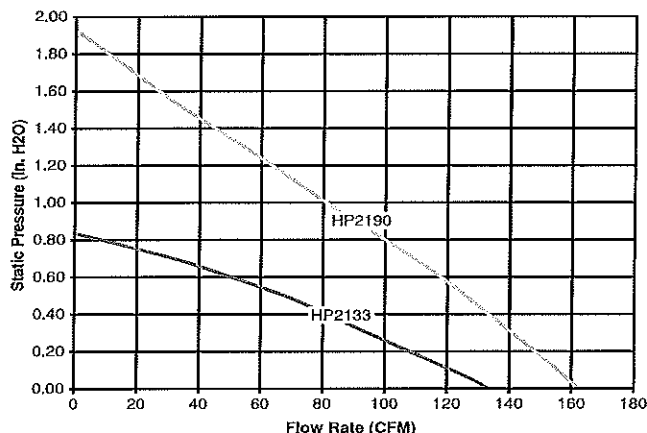
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty



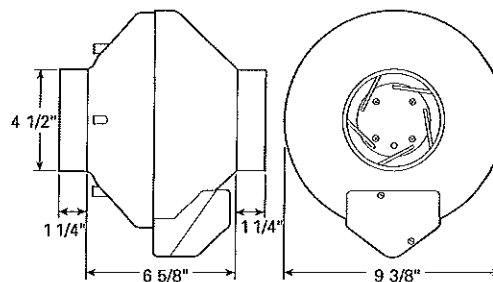
#### NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

## HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.



**HP2133** – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

**HP2190** – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

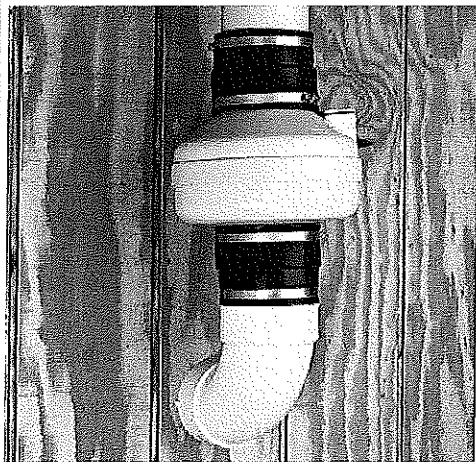
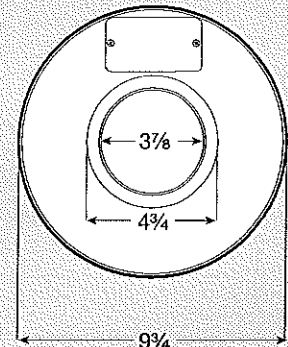
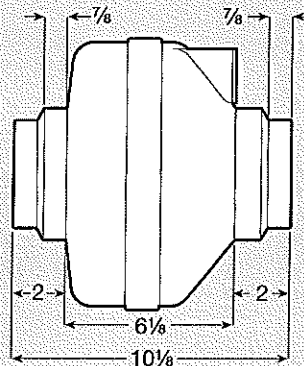
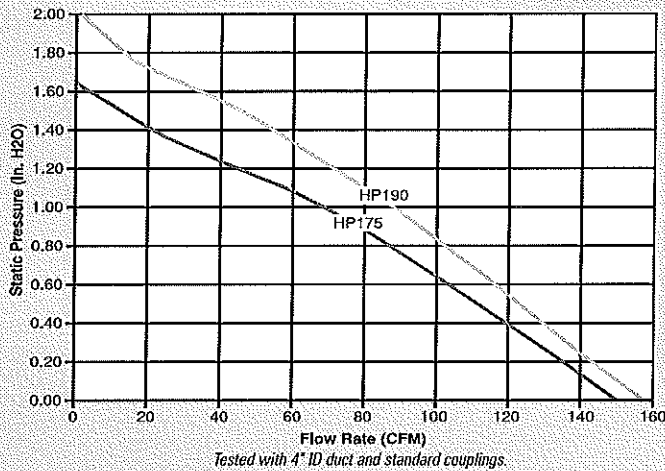
Fans are attached to PVC pipe using flexible couplings.

For 4" PVC pipe use Indiana Seals #156-44, Pipecon PCX 56-44 or equivalent.

For 3" PVC pipe use Indiana Seals #156-43, Pipecon PCX 56-43 or equivalent.



## HP175 & HP190 RADON MITIGATION FANS

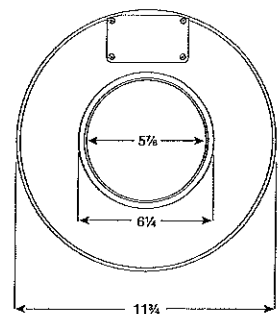
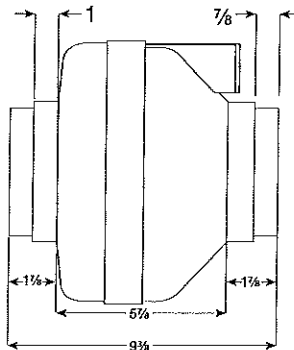
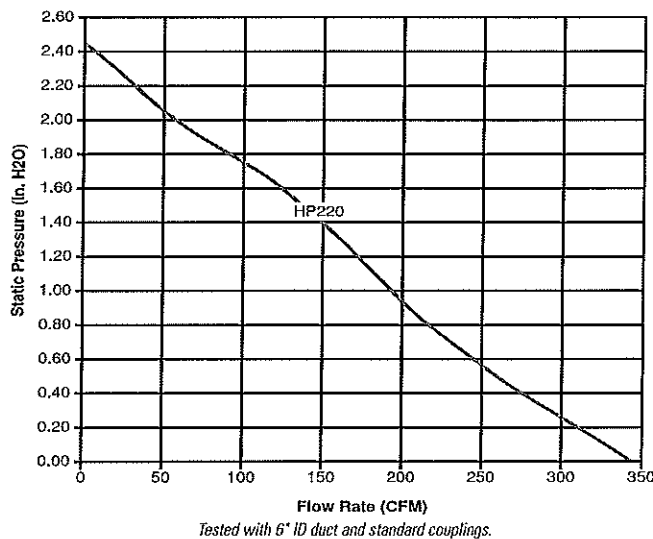


**HP175** – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

**HP190** – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

*Fans are attached to PVC pipe using flexible couplings.*  
 For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.  
 For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

## HP220 RADON MITIGATION FAN



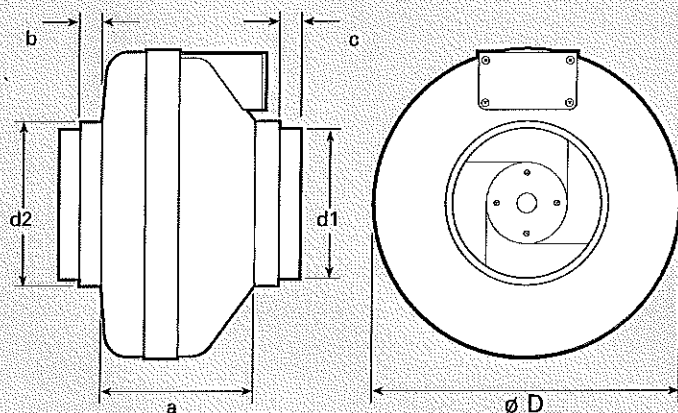
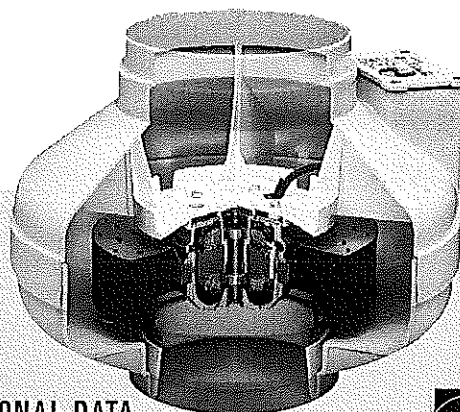
**HP 220** – Excellent choice for systems with elevated radon levels, poor communication, multiple suction points and large subslab footprint. Replaces FR 175.

*Fans are attached to PVC pipe using flexible couplings.*  
 For 4" PVC pipe use Indiana Seals #156-64, Pipeconx PCX 56-64 or equivalent.  
 For 3" PVC pipe use Indiana Seals #156-63, Pipeconx PCX 56-63 or equivalent.



# FR SERIES

## THE ORIGINAL MITIGATOR



### DIMENSIONAL DATA

model	øD	d1	d2	a	b	c
FR100	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR110	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR125	9 1/2	—	4 7/8	6 1/8	7/8	—
FR140	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR150	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR160	11 3/4	5 7/8	6 1/4	6 3/8	1	7/8
FR200	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR225	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR250	13 1/4	—	9 7/8	6 1/4	—	1 1/2

All dimensions in inches



### PERFORMANCE DATA

Fan Model	Energy Star	RPM	Volts	Rated Watts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.							Max. Ps	Duct Dia.
							0"	.2"	.4"	.6"	.8"	1.0"	1.5"		
FR100	✓	2950	120	21.2	13 - 22	0.18	137	110	83	60	21	-	-	0.90"	4"
FR125	✓	2950	115	18	15 - 18	0.18	148	120	88	47	-	-	-	0.79"	5"
FR150	✓	2750	120	71	54 - 72	0.67	263	230	198	167	136	106	17	1.58"	6"
FR160	-	2750	115	129	103 - 130	1.14	289	260	233	206	179	154	89	2.32"	6"
FR200	✓	2750	115	122	106 - 128	1.11	408	360	308	259	213	173	72	2.14"	8"
FR225	✓	3100	115	137	111 - 152	1.35	429	400	366	332	297	260	168	2.48"	8"
FR250*	-	2850	115	241	146 - 248	2.40	649	600	553	506	454	403	294	2.58"	10"

FR Series performance is shown with ducted outlet. Per HVI's Certified Ratings Program, charted air flow performance has been derated by a factor based on actual test results and the certified rate at .2 inches WG. \* Also available with 8" duct connection. Model FR 250-8. Special Order.

#### NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

## FIVE YEAR WARRANTY

#### DURING ENTIRE WARRANTY PERIOD:

FANTECH will replace any fan which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

#### FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer, no credit will be issued.

#### OR

The Distributor may place an order for the warranty fan and is invoiced.

The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

#### THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.

- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:
  1. Improper maintenance
  2. Misuse, abuse, abnormal use, or accident, and
  3. Incorrect electrical voltage or current.
- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

#### WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

### DISTRIBUTED BY:



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