e-mail: eweinstock@carichinc.com

January 17, 2014

Via U.S. Mail and e-mail

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12207-2942

Attention: Melissa Sweet
Project Manager

Re: Remedial Investigation Report
Elks Plaza, LLC.
157-189 West Merrick Road, Freeport NY
NYSDEC Site No.: 1-30-193

Dear Ms. Sweet:

Our Remedial Investigation Report for the above-referenced Site is attached. Our findings to date indicate that the SSD system is functioning properly. We recommend the following for the Site:

- The SSD system installed at this site should remain in operation with inspections scheduled annually.
- The indoor air of the Laundromat and the indoor air and sub-slab vapor of the basement of the Woodward School should be monitored on an annual basis during the winter heating season.
- The network of on-site monitoring wells should be monitored on an annual basis.
- We recommend that the Interim Remedial Measure (IRM) already implemented at this site – the operation of the SSD system – along with a program of annual monitoring be considered the final remedy for this site.
- Upon approval of this Remedial Investigation Report, we recommend that the NYSDEC prepare a Record Of Decision (ROD) for this site listing continued operation of the IRM and annual monitoring of indoor air, soil vapor and groundwater as the final remedy.
- Upon completion of the ROD, we recommend that a Site Management Plan (SMP) be prepared to ensure the remedy is properly implemented.

If there are any questions regarding this letter, please do not hesitate to call our Office.

Sincerely,

CA RICH CONSULTANTS, INC.

Jason T. Cooper
Project Environmental Scientist

Eric A. Weinstock
Vice President

ec: George Tsilogiannis
Tsilo45@yahoo.com
Lois Reisman
apjmanagement@optonline.net
Suzanne Avena, Esq.
savena@garfunkelwild.com
Renata Ockerby
reo02@health.state.ny.us

REMEDIAL INVESTIGATION REPORT

ELKS PLAZA LLC.
157-189 West Merrick Road
Freeport, New York
NYSDEC SITE #1-30-193

January 2014

Prepared for:

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

Prepared by:

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

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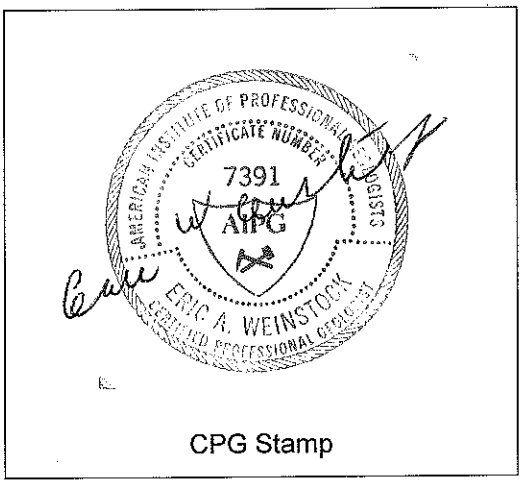
APPENDICES

CERTIFICATION

I, Eric Weinstock, certify that I am currently a Qualified Environmental Professional as defined by 6 NYCRR Part 375 and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

7391	1/17/2014	Eric Weinstock
Certified Professional Geologist #	Date	Signature



CPG Stamp

1.0 Introduction & Site Background

This report updates the R. I. Report that was submitted in January 2013 and was prepared in accordance with our approved R.I. Work Plan (Ref. 10). The subject Property is located at 157-189 West Merrick Road in Freeport, New York, County of Nassau County (Figure 1). The Property is located on the south side of West Merrick Road between South Long Beach Road and South Ocean Avenue. The shopping plaza is comprised of three one-story buildings and is approximately 2.5 acres in size. The "L" shaped building, which housed the former dry cleaner, was constructed in 1984 and has a building footprint of approximately 42,876 square feet. The Tax Map number for the "L" shaped building is Section: 62; Block: 114; Lot: 131. Site drainage for storm water runoff is directed into a series of parking lot storm water drains. Review of a previous report (Ref. 1) indicates that the subsurface geology at the Property is composed primarily of sands with some silt and gravel down to approximately 15 feet below grade. The shallow groundwater flow at the Site appears to flow in a southerly direction towards Randall Bay. According to maps and reports published by the United States Geological Survey, the Property is underlain by unconsolidated deposits composed of interbedded layers of silt, sand, and gravel at an elevation of approximately 19 feet above mean sea level.

The Site contains a former dry cleaner built in 1984, operating from 1985 to 1996. The space is currently a Laundromat (no dry cleaning is performed on-site), located at units 179A and 181. Phase I and II Environmental Site Assessments (ESA) were conducted in 2006 prompted by a financial transaction for the property. Results from the Phase II ESA indicated perchloroethylene (PCE) in the groundwater on-site. This resulted in the property being designated a Potential (P) disposal site in the Inactive Hazardous Waste Disposal Site (State Superfund) program. A Preliminary Site Assessment (PSA) was completed in March 2010. A Supplemental Soil Vapor Study was completed in June 2010. The site was listed as Class 2 with the program in April 2011. Subsequently, an Order on Consent was negotiated between the Responsible Party and the Department.

The property has been the subject of a series of investigations that have included testing and analysis of soil, groundwater, soil vapor and indoor air quality at the Site and installation of a Sub-Slab Depressurization (SSD) System. Based on the results of those investigations, elevated levels of perchloroethene (PCE) were identified below the building space units 179A and 181. These investigations are summarized in the following documents (Refs. 1, 2, 3, 4 and 5).

1.1 Previous Investigation

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 were included in the R.I. Work Plan (Ref. 10).

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^3. The indoor air sample result was 3.3 ug/m^3. The highest PCE reading was in the sub-slab sample from the Laundromat. A sample location map and data tables for this investigation were included in the R.I. Work Plan (Ref. 10).

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^3. The indoor air sample results ranged from 2.17 to 3.25 ug/m^3. A sample location map and data tables for this investigation were included in the R.I. Work Plan (Ref. 10).

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 screened with a Photoionization Detector (PID). 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^3 at the beginning of the test to 210,335 ug/m^3 at the end of the test. A sample location map and data tables for this investigation were included in the R.I. Work Plan (Ref. 10).

Sub-Slab Depressurization Construction Completion Report (September 2012) – Based on the results of the pilot test, a Sub-Slab Depressurization system was installed at the Site. The system consists of the four vents installed for the pilot test which were converted into permanent sub-slab depressurization vents. Four-inch diameter sheet metal ducts were extended and connected above the existing Laundromat. These were, in turn, connected to a six-inch diameter riser. Initially, the four-inch diameter ducts transitioned to four-inch diameter PVC pipe which was extend along the roof to the stair well at unit 175. The four-inch pipe was extended down through the roof and into the stair well. It was connected to a moisture knock drum and then to a Fuji Model VFC40 1 HP regenerative blower. The extracted soil vapor is then passed through two 55-gallon vapor phase carbon units. The treated vapor is then connected to a four-inch pipe that extends through the roof of the stair well for a height of six feet above the roof. Once the untreated soil vapor is less than the standards outlined in New York State Department of Environmental Conservation (NYSDEC) DAR-1, we will petition the NYSDEC to turn off the Fuji Blower and replace it with a Fantech fan model HP220. The four-inch diameter PVC pipe will be removed and the Fantech fan will be connected directly to the six-inch riser set above the roof. In a letter dated November 27, 2012 from the NYSDEC to CA RICH, the Department approved the removal of the blower and associated carbon drums and the installation of the Fantech Model HP220 fan. The NYSDEC letter is attached as Appendix C.

1.2 Identification and Characterization of the Sources of Contamination

Based on the work performed to date, the contaminants of concern are dry cleaning fluid or perchloroethene (PCE) and its degradation products. The source of the PCE appears to be incidental releases from the operation of the former dry cleaning establishment that was located in unit 181 of this building. The releases appear to be highest in the form of soil vapor with significantly lower detections in soil and groundwater samples collected at the Site. It is not possible to determine the quantity of PCE that was released at the Site.

2.0 Summary of Remedial Investigation Activities

2.1 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 2). 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 and placed into laboratory issued sample jars. The sample was stored in an ice-filled cooler until delivery to Accutest, an ELAP-approved laboratory. Analysis included VOCs using USEPA Method 8260 with NYSDEC ASP Category B deliverables. Additional field and laboratory QA/QC samples (trip blank, field blank, duplicate, matrix spike and matrix spike duplicate) were also analyzed.

The buried pool is believed to be 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 a flat circular cover. The cover has a two foot diameter access hole located at the southern portion of the pool which was covered with plywood on the date of our investigation. New asphalt and a manhole cover set at grade were placed over the pool after the sampling was completed.

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 5. A copy of the laboratory data and DUSR are included in Appendix B.

2.2 Groundwater Investigation

2.2.1 Groundwater Monitoring Well Installation and Sampling

Prior to the installation of the monitoring wells, an underground utility markout was performed. 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 2). 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 screened zone was packed with no. 1 gravel up to two feet above the well screen. The wells were completed with a minimum of a two foot bentonite seal above the gravel pack before being finished with a locking cap and flush mounted steel protective curb box. The well construction details are illustrated on the boring logs included in Appendix A.

The wells were developed upon installation using the surge and pump technique until a turbidity of less than 50 NTUs was established. Development water was contained in 55-gallon drum. The wells were allowed to equilibrate in the aquifer for approximately two weeks prior to groundwater sample collection.

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 newly installed 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. The wells were purged using an electrically operated submersible pump. The pump was connected to dedicated polyethylene tubing. The well was then 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 stabilized. All purge water was contained in a 55-gallon drum temporarily stored at the Site pending waste characterization sample results for proper disposal.

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. Accutest Laboratories (NELAP-certification # 10983) conducted all of the laboratory analysis. A duplicate sample, trip blank, field blank, matrix spike and matrix spike duplicate were also analyzed.

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 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 6. A copy of the laboratory data and DUSR are included in Appendix B.

2.2.2 Off-Site Discreet Geoprobe Groundwater Sampling

Prior to the installation of the groundwater sampling borings, an underground utility markout was performed. A total of three temporary discreet groundwater sampling locations were installed south of the property along Smith Street using Geoprobe® direct push technology. Each discreet 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 9, 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. Accutest Laboratories (NELAP-certification # 10983) conducted all of the laboratory analysis. A duplicate sample, trip blank, field blank, matrix spike and matrix spike duplicate were also analyzed.

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 9 and Table 6 summarizes the groundwater results.

2.3 Installation of Permanent Soil Vapor Probe Point and Sampling

A total of two permanent soil vapor sampling probe points designated “RISV-1” and “RISV-2” were installed. 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 vapor points were installed in accordance with the New York State Department of Health (NYSDOH) “Guidance for Evaluating Soil Vapor Intrusion in the State of New York” dated October 2006 (Ref. 6). Construction details are included on Table 7.

Using the NYSDOH guidelines as a reference, the soil vapor points were installed by drilling a two inch diameter hole with a hand auger. The hole was advanced down to a maximum depth of five feet below the surface grade to allow the installation of 1/4-inch stainless steel pipe connected to a slotted sample port. The annular space around the sample port was filled with clean sand and then plugged with a bentonite seal up to the bottom portion of the protective curb box. The curb box was cemented in-place and the inside finished with gravel to allow for any drainage.

The stainless steel sample probe was fitted with a three-way “T” connector valve assembly and 1/4-inch polyethylene tubing. Before collecting the soil vapor sample, the sample tubing was purged using a vacuum pump set at a rate of approximately 0.2 liters per minute. A helium tracer gas was used to enrich the atmosphere around the sampling location. The tracer gas verifies that ambient air is not inadvertently drawn down into the soil vapor sample. Both the purge volume from the sampling tube and the helium-enriched air within the container were screened for the tracer gas using a Gowmac® Model 21-250 gas leak detector. The following Helium readings were recorded prior to sampling: RISV-1 175 ppm or 0.0175% and RISV-2 0.0 ppm. These readings are both below the 10% level outlined in the NYSDOH guidance manual (Ref. 6).

The results of the soil vapor sampling indicated that the concentration of PCE ranged from 3.7 ug/m^3 to 26 ug/m^3 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 3 and on Figures 7 and 8. Table 7 summarizes the vapor construction details. A copy of the laboratory data is included in Appendix B.

2.4 Installation of Sub-Slab Soil Vapor Probe Points and 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). Construction details are included on Table 7. 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 2) were also installed on August 21, 2012. On August 22, 2012 both the purge volume from the sampling tube and the helium-enriched air within the container were screened for the tracer gas using a Gowmac® Model 21-250 gas leak detector. The following Helium readings were recorded prior to sampling: SSV-Basement 0.0 ppm; SSV-B-12 750 ppm or 0.075%; and SSV-G-5 0.0 ppm. These readings are also below the 10% level outlined in the NYSDOH guidance manual (Ref. 6).

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^3, which is in the Monitor range. The sample results are summarized on Table 4 and Figures 7 & 8. In addition, a Product Inventory was conducted as part of the soil vapor investigation and is included as Table 8.

Additional air sampling was conducted on February 21, 2013. 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 on February 21, 2013, near the previous sampling locations. On February 22, 2013 both the purge volume from the sampling tube and the helium-enriched air within the container were screened for the tracer gas using a Gowmac® Model 21-250 gas leak detector. The following Helium readings were recorded prior to sampling: SSV-Basement 580 ppm; SSV-B-12 650 ppm; and SSV-G-5 2,000 ppm. These readings are also below the 10% level outlined in the NYSDOH guidance manual.

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, the sub-slab vapor concentration of PCE was 71.2 ug/m^3, which is in the No Further Action level. However, a duplicate sample, SS-XX, was collected from the basement sub-slab. The sub-slab vapor concentration of PCE in SS-XX was 163 ug/m^3, which is in the Monitor range. The sample results are summarized on Table 5 and Figures 7 & 8. In addition, a Product Inventory was conducted as part of the soil vapor investigation and is included as Table 8.

2.5 Receptor Survey

CA RICH conducted a sensitive receptor survey to identify any potential impacts to human health and/or the environment. The survey identified six nearby schools, two medical centers, and one municipal well field used for drinking water. No surface water bodies, wetlands, or other ecologically sensitive resources were identified. The survey also identified one on-site utility vault and eight on-site storm water drains. These are illustrated on Figure 2.

Our research of available background information has determined that that there are no wetlands, groundwater recharge basins, or surface water bodies in immediate proximity to the Site. A map depicting a ½-mile radius of any sensitive receptors in the area is included as Figure 4. The map includes the public well field located hydraulically upgradient of the Site (north of Hwy. Rt. 27).

As part of the preparation of the R.I. Work Plan, we submitted a freedom of information request to Nassau County Department of Health (NCDH) to obtain copies of any additional information related to well permits that may exist in proximity to the Site. The following summarizes the information obtained from NCDH regarding the well locations within a ½-mile radius of the Site.

Well No.	Depth	Screen Elevations (msl)	Formation	Status
N 68	512 ft.	-425 to -475 ft.	Magothy	Active
N 69	500 ft.	-420 to -470 ft.	Magothy	Active
N 5695	529 ft.	-442 to -502 ft.	Magothy	Active
N 8657	640 ft.	-542 to -612 ft.	Magothy	Active

There are two non-potable, commercial supply wells located in the rear of the property near the Laundromat. Supply well #1 is out of service and is reported to be 200 feet deep. Supply well #2 is used solely to provide water to the washing machines. The depth of supply well #2 was not reported (Ref 2).

Supply well #2 was sampled on April 17, 2009 as part of the site characterization investigation. There were no VOCs detected in this sample (Ref 2).

3.0 Qualitative Human Exposure Assessment

3.1 Introduction

The site investigation and cleanup is being administered under the NYSDEC, State Superfund program. As part of the State Superfund process, this Off-Site Qualitative Exposure Assessment (EA) was performed to determine whether the property poses an existing or future health hazard to the site's exposed or potentially exposed population. The available sampling data for the environmental media was reviewed to determine whether there is any health risk by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This EA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation (Ref. 7).

The five elements of an exposure pathway are: 1) a contaminant source; 2) contaminant release and transport mechanisms; 3) a point of exposure; 4) a route of exposure; and 5) a receptor population. An exposure pathway is considered complete when all five elements of an exposure pathway are documented. A potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway cannot be documented. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future.

Land Use of Elks Plaza and Neighboring Properties-Current and Future Exposure Setting - The area immediately surrounding Elks Plaza is residential/commercial. There are several commercial buildings to the east and west of Elks Plaza. The properties to the north and south are predominately residential.

It is expected that the future use of the Elks Plaza and adjoining properties would remain residential/commercial because the surrounding land use is residential/commercial and the area is zoned residential/commercial. The residential land use in the surrounding area is zoned residential and is anticipated to remain residential since the neighborhood is well developed and established.

3.2 Contaminants of Concern

General Background - Based upon all background information and sampling data, the contaminants of concern include PCE, and PCE degradation products (TCE, DCE and vinyl chloride).

Regulatory Criteria - The concentrations of the media and contaminants of concern found at the site were compared to the following standards or guidance values:

- Soil - 6NYCRR Part 375 NYSDEC Protection of Groundwater Soil Cleanup Objectives. (Ref. 8);
- Soil Vapor - NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in NYS (Ref. 6); and
- Groundwater - Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, NYSDEC (Ref. 9).

3.3 Media of Concern

Soil – PCE was detected in two soil samples collected from the site. One sample was collected as part of the IRM at a depth of 1 to 2 feet below grade in the area of the former dry cleaning machine. This sample had a PCE detection of 21.6 ug/kg. No other VOCs were detected in this sample. Another sample was collected from a storm water / roof drain located in the back of the property. This sample had a PCE detection of 21.5 ug/kg.

The following is a summary of the highest detections of VOCs in soil detected at the site:

Organic Compound	Highest Detection	NYSDEC Part 375 Protection of Groundwater Standards
PCE	21.6 ug/kg	1,300 ug/kg
TCE	8.0 ug/kg	470 ug/kg
Cis-1,2-DCE	32.4 ug/kg	250 ug/kg
Trans-DCE	2.8 ug/kg	190 ug/kg
Vinyl Chloride	14.9 ug/kg	20 ug/kg

Soil Vapor – Soil vapor samples were collected both on-site and off-site.

On-Site: The soil vapor extracted by the SSD system during the pilot test was tested. A PCE concentration of 210,335 ug/m^3 was recorded during the pilot test. When the system was initially installed, it was connected to a 1-HP blower and the extracted soil vapor was analyzed quarterly. Between June 21, 2012 and September 20, 2012 the PCE concentrations in the extracted soil vapor ranged from 4,050 to 3,380 ug/m^3. After the September 2012 sample collection, the 1-HP blower was removed and replaced with a Fantech SSD fan. The following is a summary of detections for the untreated soil vapor sample collected from the SSD system when the blower was removed and replaced with a SSD fan:

On-Site Organic Compound	Third Qtr. 2012	NYSDOH Matrix for No Further Action Sub-Slab Soil Vapor
PCE	3,380 ug/m^3	< 100 ug/m^3
TCE	54.3 ug/m^3	< 5.0 ug/m^3
Cis-1,2-DCE	12 ug/m^3	< 100 ug/m^3
Trans-DCE	Not detected	No value given
Vinyl Chloride	Not detected	< 5.0 ug/m^3

In addition, exterior soil vapor samples were collected from two points, RISV-1 and RISV-2, in August, 2012. The following is a summary of the highest detections of VOC's detected in on-site soil vapor samples collected in August 2012:

On-Site Organic Compound	August 2012	NYSDOH Matrix for No Further Action Sub-Slab Soil Vapor
PCE	16 ug/m^3	< 100 ug/m^3
TCE	Not detected	< 5.0 ug/m^3
Cis-1,2-DCE	Not detected	< 100 ug/m^3
Trans-DCE	Not detected	No value given
Vinyl Chloride	Not detected	< 5.0 ug/m^3

Off-Site: A total of three off-site sub-slab soil vapor samples and three indoor air samples were collected in August 2012. The highest PCE detection was from underneath the basement room slab of the Woodward Children Center. The following is a summary of the highest detections of VOC's detected in off-site sub-slab soil vapor samples collected in August 2012.

Off-Site Organic Compound	Aug. 2012 Highest Detection	NYSDOH Matrix for No Further Action Sub-Slab Soil Vapor
PCE	142 ug/m^3	< 100 ug/m^3
TCE	Not detected	< 5.0 ug/m^3
Cis-1,2-DCE	Not detected	< 100 ug/m^3
Trans-DCE	Not detected	No value given
Vinyl Chloride	Not detected	< 5.0 ug/m^3

A total of three off-site sub-slab soil vapor samples and three indoor air samples were collected again in February 2013 during Winter conditions. The highest PCE detection was again from underneath the basement room slab of the Woodward Children Center. The following is a summary of the highest detections of VOC's detected in off-site sub-slab soil vapor samples collected in February 2013:

Off-Site Organic Compound	Feb. 2013 Highest Detection	NYSDOH Matrix for No Further Action Sub-Slab Soil Vapor
PCE	163 ug/m^3	< 100 ug/m^3
TCE	2.0 ug/m^3	< 5.0 ug/m^3
Cis-1,2-DCE	Not detected	< 100 ug/m^3
Trans-DCE	Not detected	No value given
Vinyl Chloride	Not detected	< 5.0 ug/m^3

Groundwater – Three permanent groundwater monitoring wells (MW-1, MW-2, and MW-3) exist at the site. In addition three temporary groundwater sampling points were installed along Smith Street.

On-Site: Results from the August 2012 sampling event are listed below. The highest concentration of PCE was detected in well MW-2:

Organic Compound	Highest Detection	TOGS
PCE	17.7 ug/l	5 ug/l
TCE	10.2 ug/l	5 ug/l
Cis-1,2-DCE	6.7 ug/l	5 ug/l
Trans-DCE	Not detected	5 ug/l
Vinyl Chloride	Not detected	2 ug/l

Off-Site: Three groundwater samples were collected off-site. The highest concentration of PCE was detected in in boring 209 Smith (56 to 60feet). Results from the August 2013 sampling event are listed below:

Organic Compound	Highest Detection	TOGS
PCE	9.8 ug/l	5 ug/l
TCE	0.89 J ug/l	5 ug/l
Cis-1,2-DCE	Not detected	5 ug/l
Trans-DCE	Not detected	5 ug/l
Vinyl Chloride	Not detected	2 ug/l

J = estimated value

3.4 Potential Sensitive Receptors

On-Site Receptors - Potential on-site receptors include: commercial building occupants, store customers, construction workers and area residents:

1. Commercial Business Building Occupants – existing and future
2. Building Construction/Renovation Workers – existing and future
3. Pedestrians, Trespassers, Cyclists – existing and future
4. Area Residents – existing and future

Off-Site Receptors - Potential off-site receptors within a 0.25-mile radius of the site include: commercial building occupants, construction workers and area residents:

1. Commercial Business Building Occupants – existing and future
2. Building Construction/Renovation Workers – existing and future
3. Pedestrians, Trespassers, Cyclists – existing and future
4. Area Residents – existing and future

Visitors, pedestrians, trespassers, cyclists, and miscellaneous delivery personnel would have significantly less potential for exposure than building occupants; and therefore were not included in further consideration.

A potential exposure pathway via contaminated groundwater is unlikely because the area is served by a public water supply that is not affected by this contamination.

There is no potential exposure pathway via soil for both present and future use because soil contamination was found in the subsurface, but there were no detections exceeding the Part 375 SCOs.

There is a potential exposure pathway via soil vapor intrusion in the on-site structure that was the focus of the environmental investigation. A sub-slab depressurization system (SSDS) has been installed in a section of the on-site structure and is mitigating the potential for soil vapor intrusion to occur.

3.5 Exposure Route

An exposure route is the mechanism by which a receptor comes into contact with a chemical. Three potential primary routes exist by which chemicals can enter the body:

- Ingestion of water, fill or soil;
- Inhalation of vapors and particulates; and
- Dermal contact with water, fill, soil or building materials.

3.6 Exposure Pathways

Based on the current and projected future use of this site, the following pathways will be evaluated in this Exposure Assessment:

1. Migration of subsurface VOC soil vapors from contaminated soil or groundwater into the indoor air of overlying or neighboring structures and the potential inhalation of soil vapor via soil vapor intrusion.

2. Migration of VOC contaminated groundwater, off-gassing of VOC vapors into neighboring structures and inhalation of vapors.

3. Migration of VOC contaminated groundwater and ingestion by area residents and workers.

3.7 Identification and Evaluation of Exposure Pathways (Contaminant source; contaminant release and transport mechanism; point of exposure; route of exposure; and receptor population)

The migration of contaminated soil vapor from underneath a section of the existing shopping center structure into the indoor air of specific tenant spaces is currently being mitigated with a sub-slab depressurization system (SSDS). Pilot tests and a system start-up test have confirmed that negative pressure is created and maintained below the area of the former dry cleaner. The SSDS is equipped with a vacuum gauge mounted in the office of the Laundromat that has a low vacuum visual alarm. In the event the low vacuum visual alarm is illuminated, there is a sign written in English and Spanish next to the gauge indicating the phone number to call for service. The Operator of the Laundromat and the property maintenance manager have been advised of the gauge and alarm. As such, the on-site soil vapor pathway is not complete.
Based on the concentrations of PCE and related compounds in the soil vapor adjoining the property, only one sample location suggests that there may be a potential pathway for off-site migration of soil vapor. A reading of 142 ug/m^3 and 163 ug/m^3 of PCE were detected below the basement of the Woodward School in August 2012 and February 2013. However, the indoor air in the maintenance room above these detection were below the NYSDOH 2006 guidance for mitigation. There were no detections of PCE in the classrooms tested during the August 2012 sampling. There was one minor detection of PCE in the indoor air of room B-12 during the February 2013 sampling. The concentration of PCE from the February 2013 sampling was 0.27 ug/m^3, which is below the standard of < 3. Continued monitoring of the sub-slab vapor and indoor air at the basement maintenance room is recommended. As such, the off-site soil vapor pathway is not complete.

Monitoring well MW-2 is located downgradient of the former dry cleaner. This well had a PCE detection of 17.7 ug/l, just slightly above the groundwater standard of 5 ug/l. The results of 12 groundwater samples collected from three boings installed along Smith Street displayed PCE detection of less than 10 ug/l. There are no known supply wells downgradient of the site. There is also one downgradient soil vapor point, RISV-2. The results from this point do not indicate that soil vapor is off-gassing from the groundwater. A program of scheduled groundwater monitoring is recommended for this site. As such, the groundwater pathway is not complete.

3.8 Exposure Assessment Conclusions and Recommendations

Based upon this analysis, there is a potential for soil vapor contaminated with PCE below the slab of the former dry cleaner to impact the indoor air quality of the overlying structure. However, the installation and operation of an SSDS is mitigating the potential for soil vapor intrusion to occur. In addition, there was one detection of PCE below the maintenance room of the Woodward school. This condition should be addressed with scheduled monitoring. There was one detection of PCE slightly above groundwater standards in an on-site monitoring well downgradient of the former dry cleaner. This should be addressed with a program of scheduled groundwater monitoring. There were two detections of PCE slightly above groundwater standards in an off-site groundwater boring. There are no known downgradient supply wells and off-gassing from the groundwater has not been suspected. As such, there are no complete exposure pathways at this site.

Follow up actions should include:

- Periodic sub-slab and indoor air monitoring at the Woodward School during the Winter;
- Periodic inspections of the SSD system and indoor air sampling at the Laundromat; and
- Periodic sampling and analysis of the on-site groundwater monitoring wells.

4.0 Conclusions

The following summarizes our Remedial Investigation conclusions for Site:

- Soil sampling performed at this site has not revealed detections of PCE above Part 375 SCOs either below the floor of the former dry cleaner or in the roof/storm water drain behind the former dry cleaner.

- On-site monitoring wells confirmed that the direction of groundwater flow is to the south-southeast.

- There was one detection of PCE at 17.7 ug/l in a site monitoring well downgradient of the former dry cleaner. The groundwater standard for PCE is 5 ug/l and there are no known downgradient supply wells.

- There were two detections of PCE above groundwater standards in boring 209 Smith. Sample intervals 41-45' and 56-60' contained PCE concentrations of 5.6 ug/l and 9.8 ug/l respectively.

- The existing SSD system develops negative pressure (or vacuum) in the area of the former dry cleaner.

- PCE was detected at 142 ug/m^3 below the basement of the nearby Woodward Children's Center in August 2012. However, there were no indoor air detections above the NYSDOH 2006 mitigation criteria and no detections in the classrooms sampled during this investigation.

- PCE was detected below the basement of the nearby Woodward Children's Center in February 2013. At the basement location, the sub-slab vapor concentration of PCE was 71.2 ug/m^3 and the duplicate sample (SS-XX), also collected from the basement location, had a PCE concentration of 163 ug/m^3. However, there were no indoor air detections above the NYSDOH 2006 mitigation criteria. According to the NYSDOH Decision Matrices the sub-slab soil vapor and indoor air concentrations require monitoring. Only a minor detection of PCE was identified in classroom B-12 at a concentration of 0.27 ug/m^3, which is significantly lower than the NYSDOH Air Guideline Value of 100 ug/m^3.

References

1. Associated Environmental Services, December 2006, Phase II Environmental Site Assessment.

2. Preferred Environmental Services March 2010, Site Characterization Report, Elks Plaza LLC - Site # 1-30-193, 157 -189 West Merrick Road, Freeport, NY.

3. Preferred Environmental Services June 2010, Supplemental Soil Vapor Investigation, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.

4. 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.

5. CA Rich Consultants, Inc. September 2012, Sub-Slab Depressurization System Construction Completion Report, Elks Plaza, LLC, 157-189 West Merrick Road, Freeport, NY.

6. NYSDOH, October 2006, Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

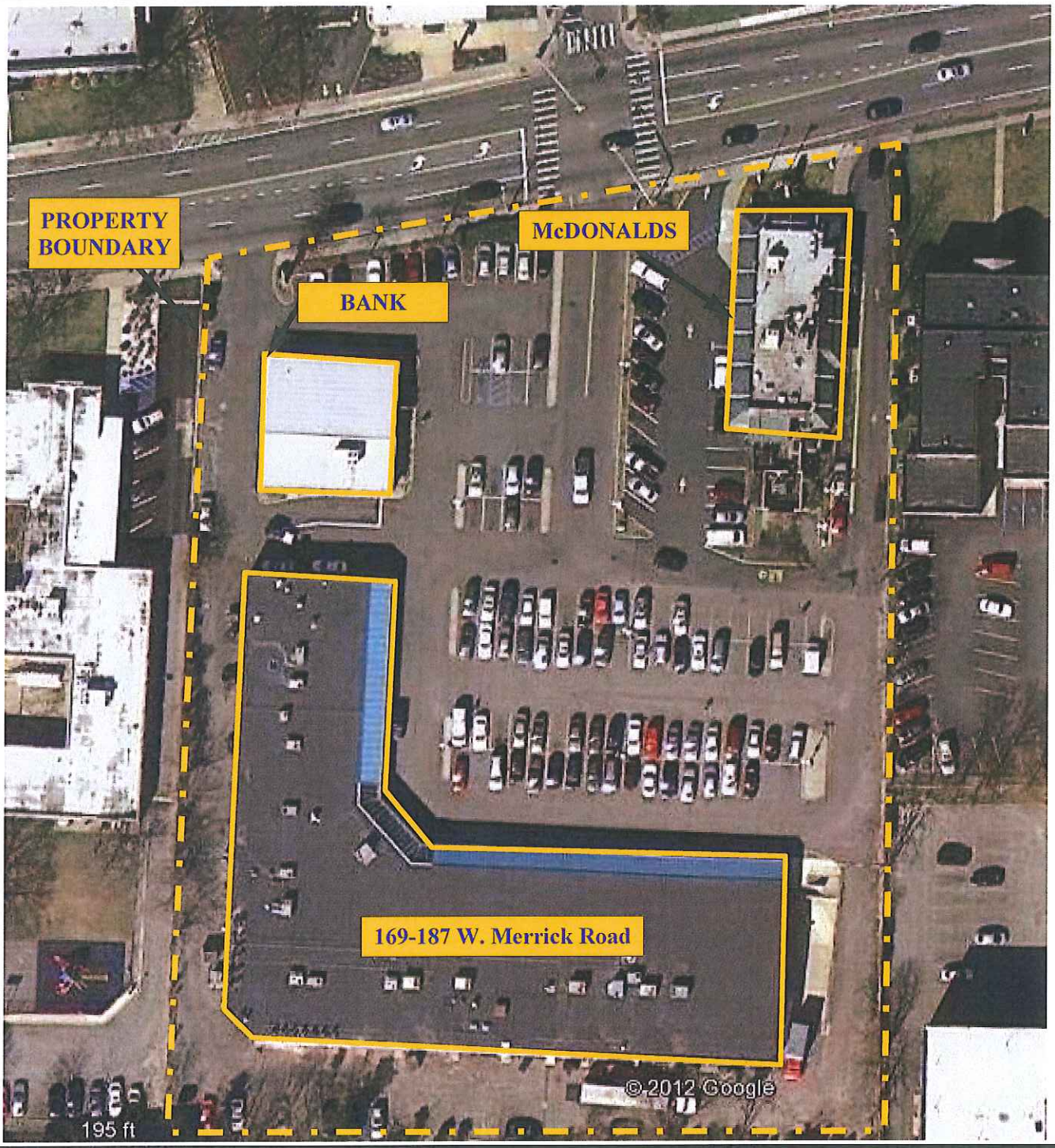
7. NYSDEC, May 3, 2010, DER-10 / Technical Guidance for Site Investigation and Remediation.

8. NYSDEC, December 14, 2006, 6NYCRR Part 375, Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

9. NYSDEC, October 22, 1993, Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.

10. CA Rich Consultants, Inc. July 2012, Remedial Investigation Work Plan, Elks Plaza, LLC, 157-189 West Merrick Road, Freeport, NY.

FIGURES

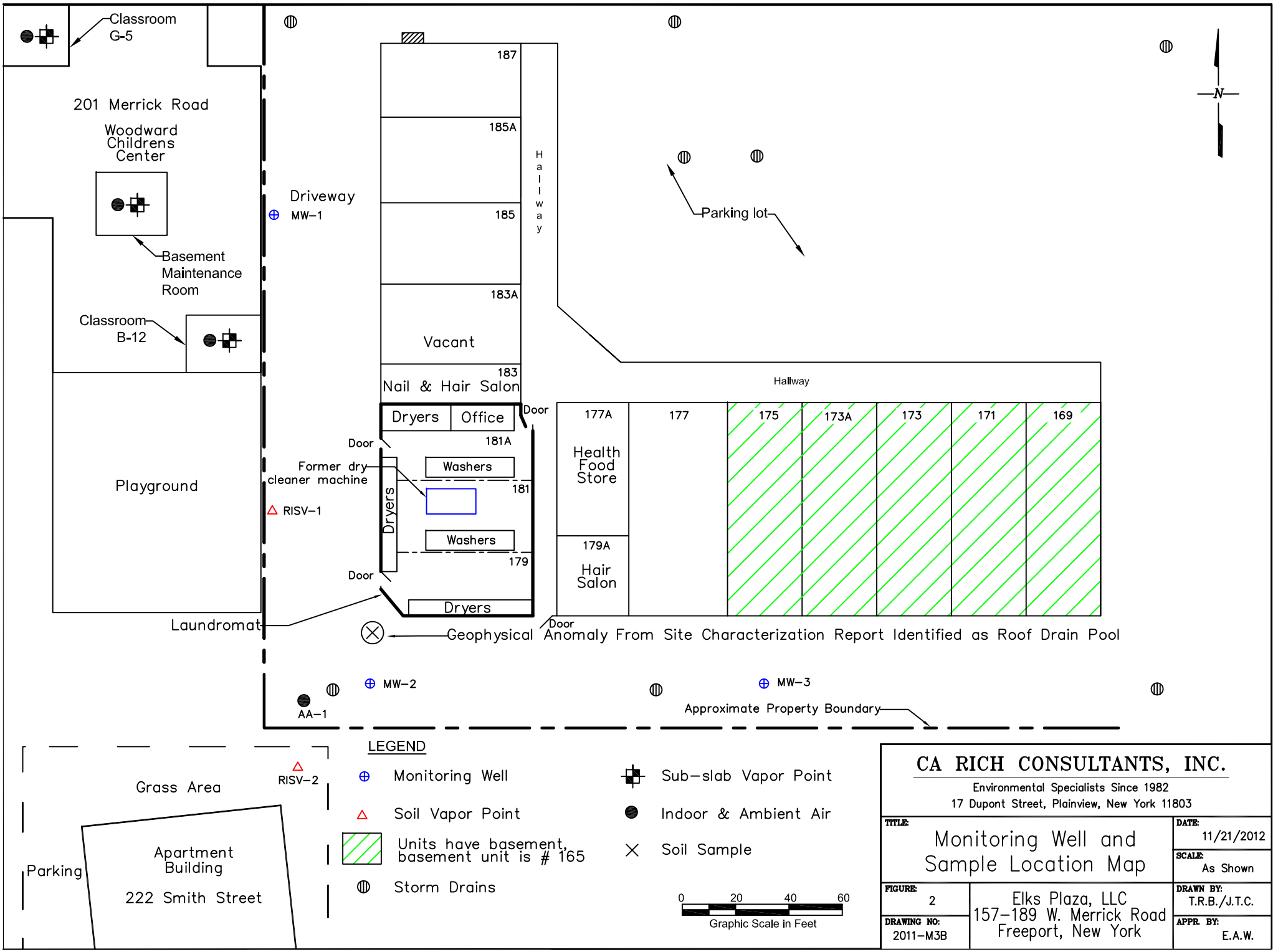


N

Adapted from Google Earth 2012

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

TITLE: **SITE PLAN WITH PROPERTY BOUNDARIES**		DATE: **6/8/2012**
		SCALE: **Not to scale**
FIGURE: **1**	**Elks Plaza, LLC** **157-189 W. Merrick Road** **Freeport, New York**	DRAWN BY: **JTC**
DRAWING:		APPR. BY: **EAW**



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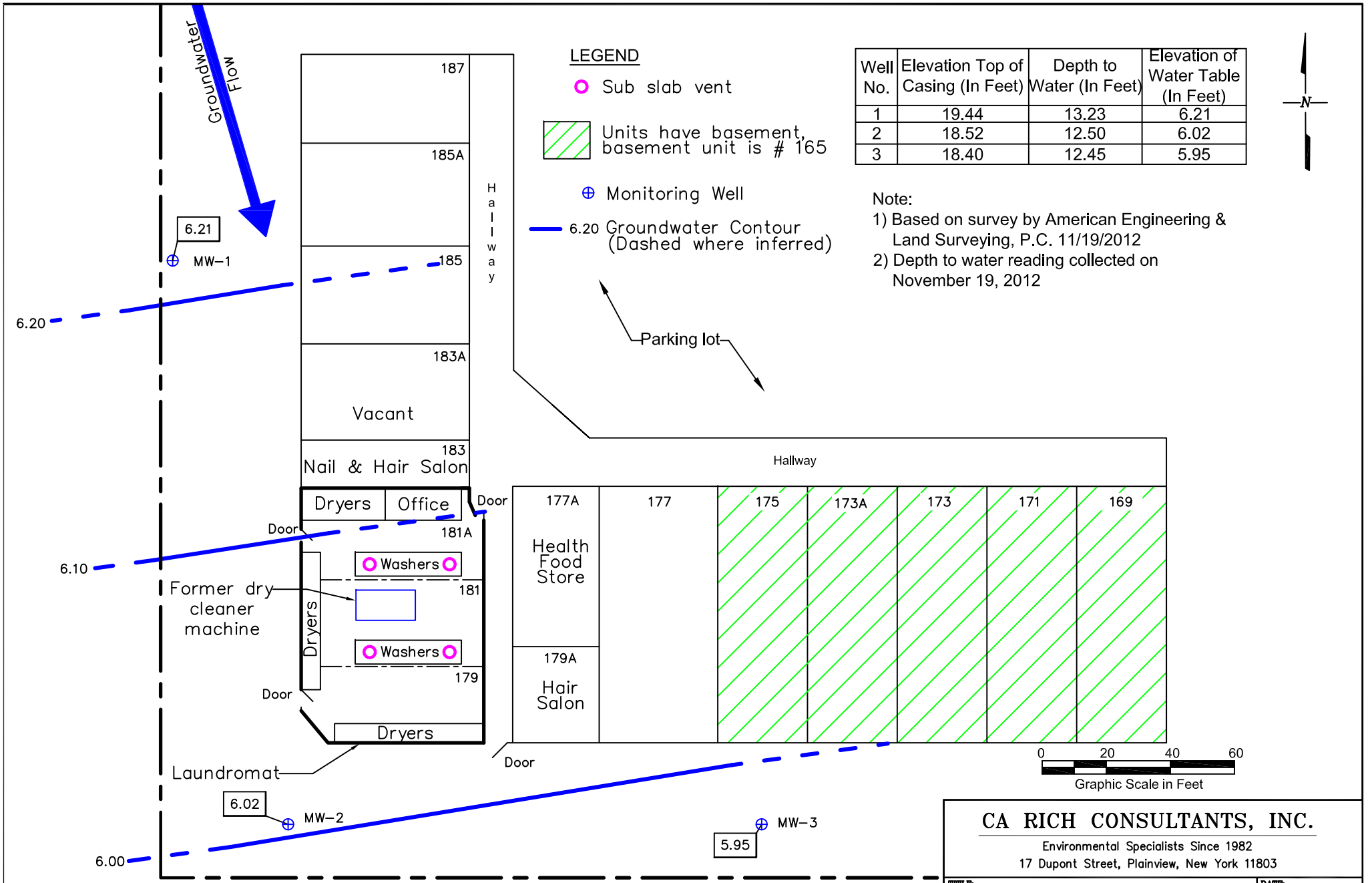
17 Dupont Street, Plainview, New York 11803

TITLE: Monitoring Well and Sample Location Map	DATE: 11/21/2012
	SCALE: As Shown
FIGURE: 2	DRAWN BY: T.R.B./J.T.C.
DRAWING NO: 2011-M3B	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York
	APPR. BY: E.A.W.



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

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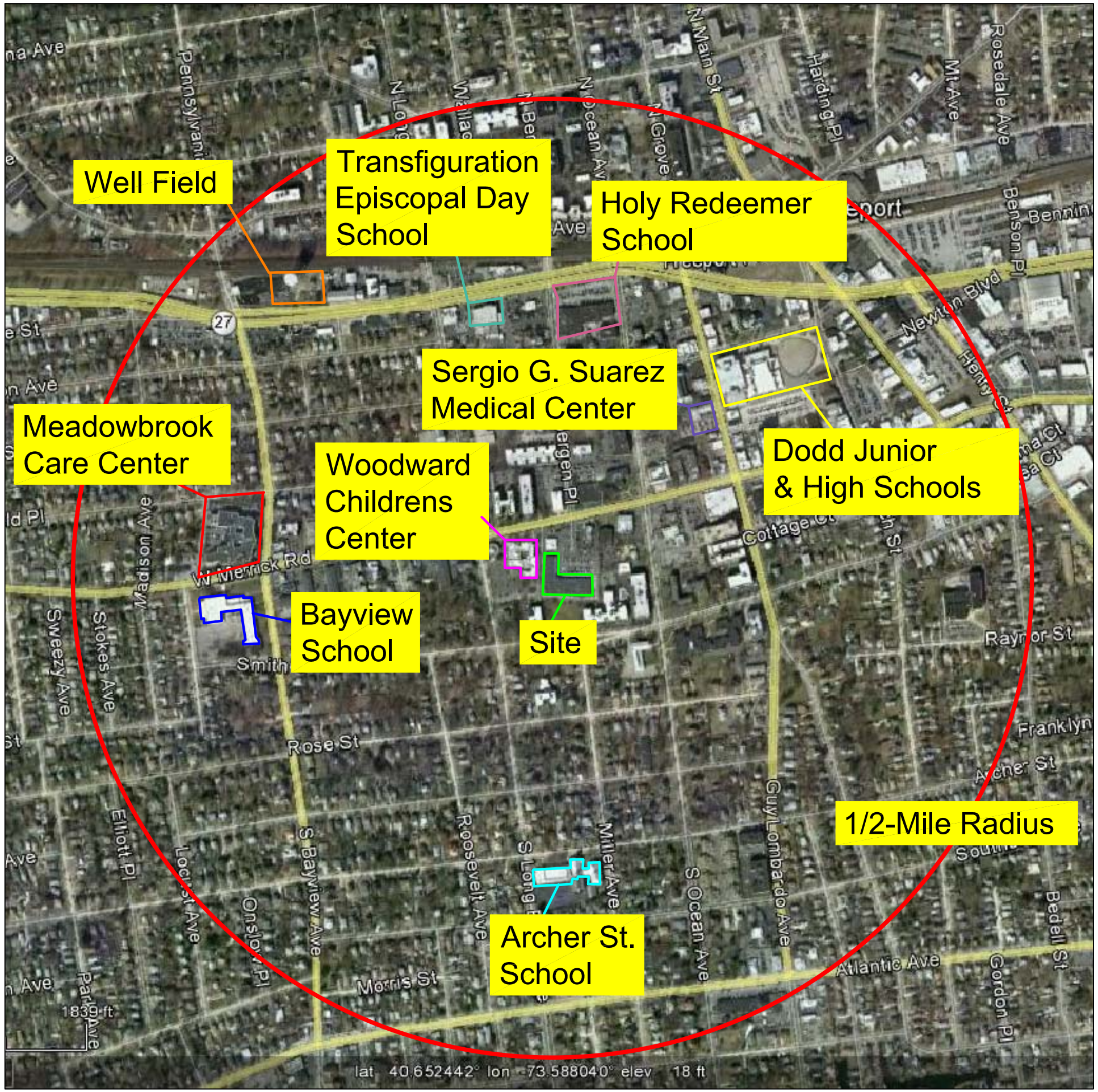
TITLE: Water Table Elevation and Groundwater Contour Map	DATE: 1/9/2013
	SCALE: As Shown
FIGURE: 3	DRAWN BY: J.T.C./T.R.B.
DRAWING NO: 2012-7	APPR. BY: E.A.W.

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



Legend

- Bayview School
- Dodd Junior & Senior Schools
- Archer St. School
- Site
- Well Field
- Woodward Childrens Center
- Meadowbrook Care Center
- Sergio G. Suarez Medical Center
- Holy Redeemer School
- Transfiguration Episcopal Day School

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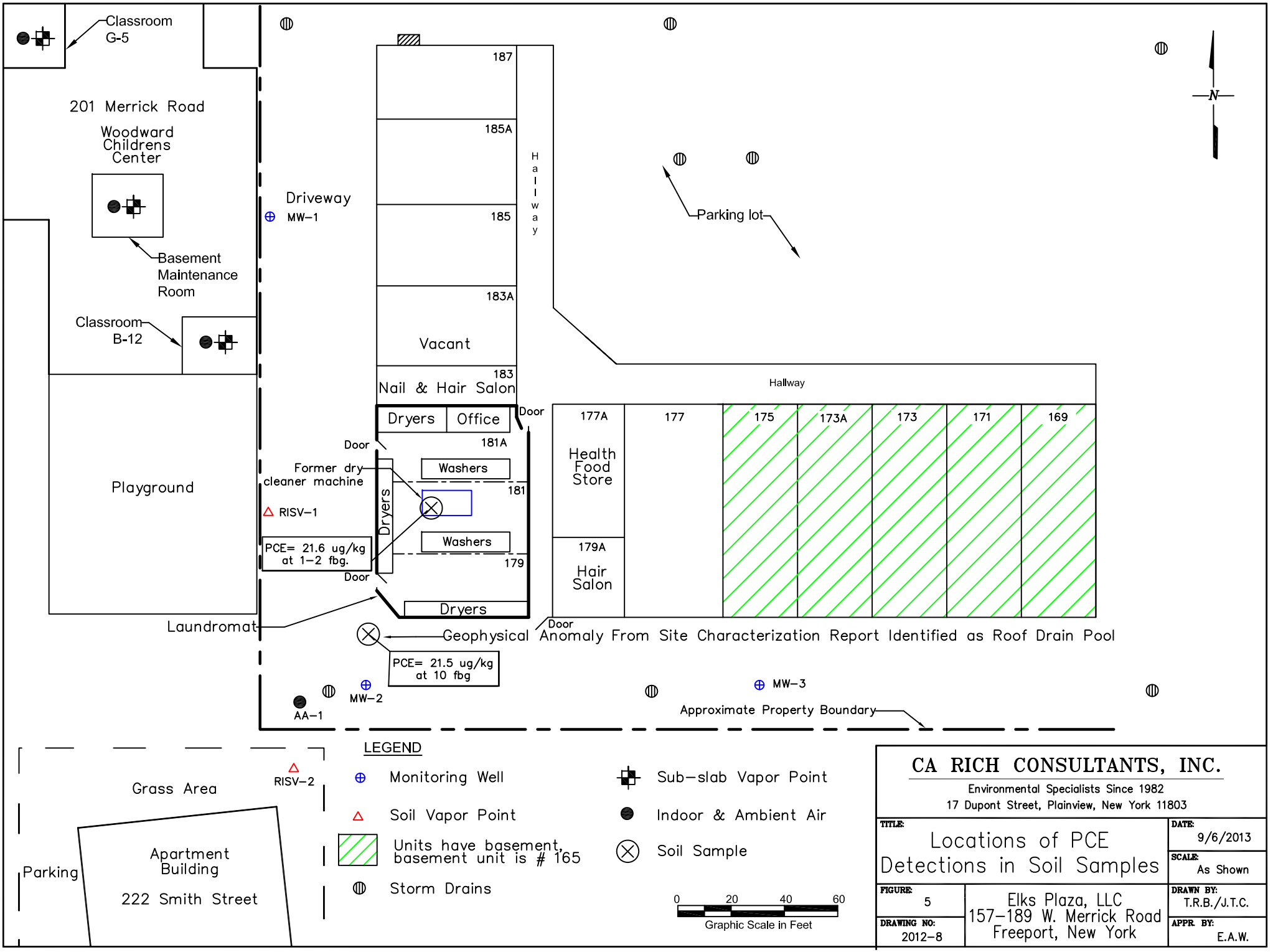
17 Dupont Street, Plainview, New York 11803

TITLE: 1/2-Mile Radius Map With Sensitive Receptors		DATE: 11/21/2012
		SCALE: AS SHOWN
FIGURE: 4	Elks Plaza, LLC 157-189 Merrick Rd Freeport, New York	DRAWN BY: J.T.C./T.R.B.
DRAWING NO: 2012-4		APPR. BY: E.A.W.



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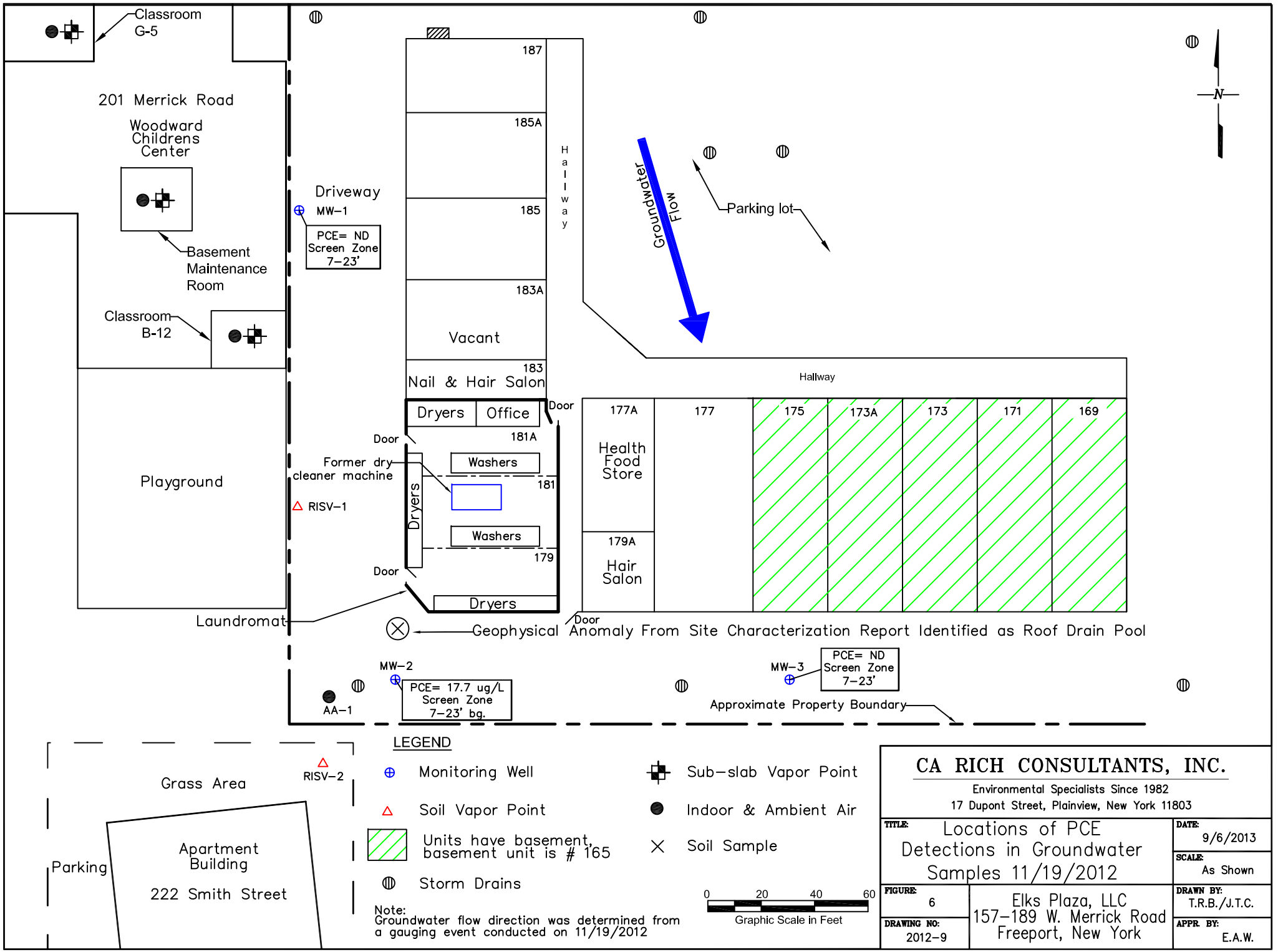
17 Dupont Street, Plainview, New York 11803

TITLE: Locations of PCE Detections in Soil Samples	DATE: 9/6/2013
	SCALE: As Shown
FIGURE: 5	DRAWN BY: T.R.B./J.T.C.
DRAWING NO: 2012-8	APPR. BY: E.A.W.

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



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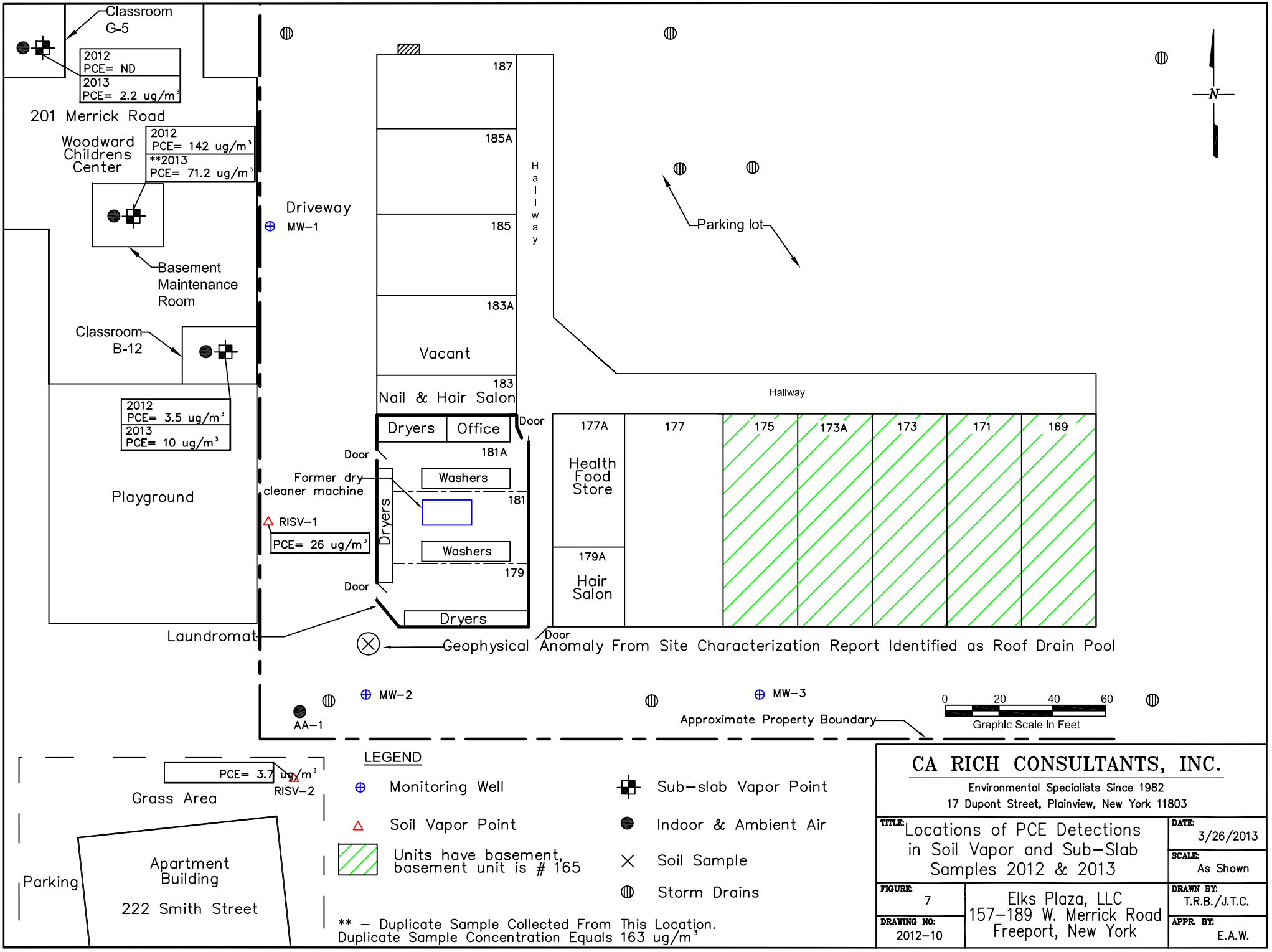
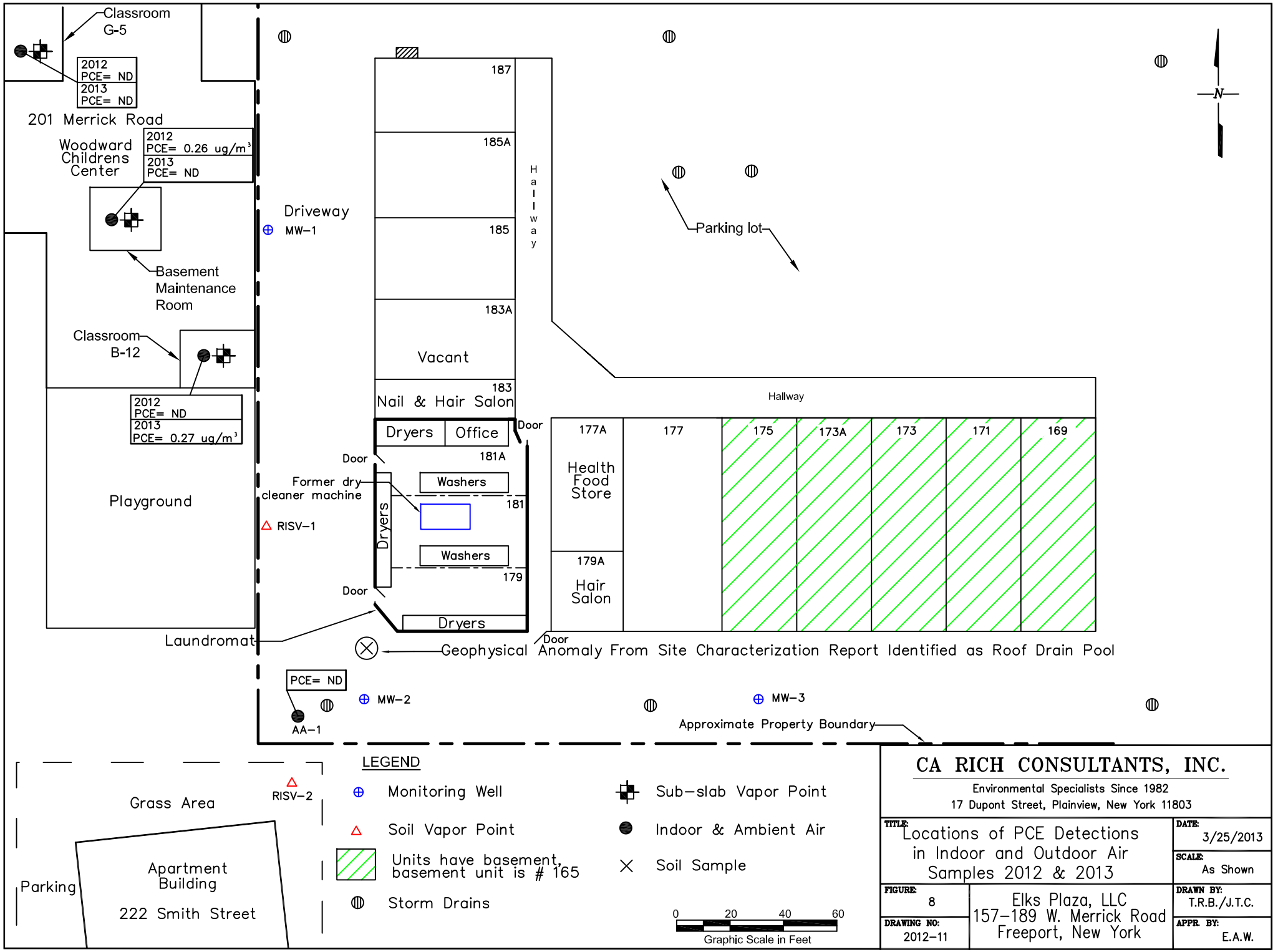
17 Dupont Street, Plainview, New York 11803

TITLE: Locations of PCE Detections in Groundwater Samples 11/19/2012		DATE: 9/6/2013
		SCALE: As Shown
FIGURE: 6	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York	DRAWN BY: T.R.B./J.T.C.
DRAWING NO: 2012-9		APPR. BY: E.A.W.


Classroom G-5
2012 PCE= ND
2013 PCE= 2.2 ug/m3
201 Merrick Road
Woodward Childrens Center
2012 PCE= 142 ug/m3
**2013 PCE= 71.2 ug/m3
Basement Maintenance Room
Classroom B-12
2012 PCE= 3.5 ug/m3
2013 PCE= 10 ug/m3
Playground
Laundromat
Driveway
MW-1
187
185A
185
183A
Vacant
183
Nail & Hair Salon
Dryers
Office
Door
181A
Washers
181
Dryers
Washers
179
Dryers
Door
Former dry cleaner machine
RISV-1
PCE= 26 ug/m3
Hallway
177A
Health Food Store
179A
Hair Salon
177
175
173A
173
171
169
Door
Hallway
Parking lot
N
Geophysical Anomaly From Site Characterization Report Identified as Roof Drain Pool
MW-2
AA-1
MW-3
Approximate Property Boundary
0 20 40 60
Graphic Scale in Feet
PCE= 3.7 ug/m3
RISV-2
Grass Area
Parking
Apartment Building
222 Smith Street
LEGEND
Monitoring Well
Soil Vapor Point
Units have basement, basement unit is # 165
Sub-slab Vapor Point
Indoor & Ambient Air
Soil Sample
Storm Drains
** – Duplicate Sample Collected From This Location.
Duplicate Sample Concentration Equals 163 ug/m3
CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803
TITLE: Locations of PCE Detections in Soil Vapor and Sub-Slab Samples 2012 & 2013
DATE: 3/26/2013
SCALE: As Shown
FIGURE: 7
DRAWING NO: 2012-10
Elks Plaza, LLC
157-189 W. Merrick Road
Freeport, New York
DRAWN BY: T.R.B./J.T.C.
APPR. BY: E.A.W.



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17 Dupont Street, Plainview, New York 11803

TITLE: Locations of PCE Detections in Indoor and Outdoor Air Samples 2012 & 2013	DATE: 3/25/2013
	SCALE: As Shown
FIGURE: 8	DRAWN BY: T.R.B./J.T.C.
DRAWING NO: 2012-11	APPR. BY: E.A.W.

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

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17 Dupont Street, Plainview, New York 11803

TITLE: Locations of PCE Detections in Discreet Groundwater Borings		DATE: 8/23/2013
		SCALE: As Shown
FIGURE: 9	Elks Plaza, LLC 157–189 W. Merrick Rd. Freeport, NY	DRAWN BY: T.R.B./J.T.C.
DRAWING NO: 2013–3		APPR. BY: E.A.W.

H: \Drawings\Elks Plaza\2013–3

TABLES

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

Sample ID	Pool #1	Pool XX	Field Blank	Trip Blank	*NYCRR	**NYCRR
Matrix	Soil	Soil	Aqueous	Aqueous	Part 375	Part 375
Date Sampled	8/28/2012	8/28/2012	8/28/2012	8/28/2012	Commercial	Protection of GW
Volatile Organic Compounds						
Units	ug/kg	ug/kg	ug/l	ug/l	ug/kg	ug/l
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:
J- Analyte detected below quantitation limits.
ND- Not detected at or above laboratory detection limits.
NS- No standard for specific compound
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 and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ug/kg= micrograms per kilogram or parts per billion
ug/L= micrograms per liter or parts per billion
*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6.8(b): Commercial Use
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6.8(b): Protection of Groundwater
Pool XX is a duplicate of Pool #1

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
ibromo-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
rans-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
ans-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
thyl-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 Exterior Soil Vapor and Ambient Air Samples
Elks Plaza
Freeport, NY

Sample ID Matrix Date Sampled	RISV-1 Soil Vapor 8/29/2012	RISV-2 Soil Vapor 8/31/2012	SV-X Soil Vapor 8/29/2012	*NYSDOH 2006 Matrix1/Matrix 2 Sub-Slab Vapor	AA-1 Ambient Air 8/29/2012	*NYSDOH 2006 Matrix1/Matrix 2 Indoor Air
Volatile Organic Compounds						
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
Acetone	ND	136	129	NS	14	NS
1,3-Butadiene	ND	ND	ND	NS	ND	NS
Benzene	121	8.3	176	NS	0.93	NS
Bromodichloromethane	ND	ND	ND	NS	ND	NS
Bromoform	ND	ND	ND	NS	ND	NS
Bromomethane	ND	ND	ND	NS	ND	NS
Bromoethene	ND	ND	ND	NS	ND	NS
Benzyl Chloride	ND	ND	ND	NS	ND	NS
Carbon disulfide	1.8 J	2.0 J	2.3 J	NS	ND	NS
Chlorobenzene	ND	ND	ND	NS	ND	NS
Chloroethane	ND	ND	ND	NS	ND	NS
Chloroform	4.2	ND	5.4	NS	ND	NS
Chloromethane	ND	1.7	ND	NS	1.2	NS
3-Chloropropene	ND	ND	ND	NS	ND	NS
2-Chlortoluene	ND	ND	ND	NS	ND	NS
Carbon tetrachloride	ND	ND	ND	< 5	ND	< 0.25
Cyclohexane	48.9	3.2	ND	NS	ND	NS
1,1-Dichloroethane	ND	ND	ND	NS	ND	NS
1,1-Dichloroethylene	ND	ND	ND	< 100	ND	< 3
1,2-Dibromoethane	ND	ND	ND	NS	ND	NS
1,2-Dichloroethane	ND	ND	ND	NS	ND	NS
1,2-Dichloropropane	ND	ND	ND	NS	ND	NS
1,4-Dioxane	4.0	ND	ND	NS	ND	NS
Dichlorodifluoromethane	3.8 J	2.5 J	2.6 J	NS	2.4	NS
Dibromochloromethane	ND	ND	ND	NS	ND	NS
trans-1,2-Dichloroethylene	ND	ND	ND	NS	ND	NS
cis-1,2-Dichloroethylene	ND	ND	ND	<100	ND	< 3
cis-1,3-Dichloropropene	ND	ND	ND	NS	ND	NS
m-Dichlorobenzene	ND	ND	ND	NS	ND	NS
o-Dichlorobenzene	ND	ND	ND	NS	ND	NS
p-Dichlorobenzene	ND	ND	ND	NS	ND	NS
trans-1,3-Dichloropropene	ND	ND	ND	NS	ND	NS
Ethanol	101	19	95.3	NS	13	NS
Ethylbenzene	10	15	11	NS	ND	NS
Ethyl acetate	190	54.0	5.4	NS	3.3	NS
4-Ethyltoluene	3.7 J	5.4	3.9	NS	ND	NS
Freon 113	ND	ND	ND	NS	ND	NS
Freon 114	ND	ND	ND	NS	ND	NS
Heptane	3.8	9.4	3.7	NS	ND	NS
Hexachlorobutadiene	ND	ND	ND	NS	ND	NS
Hexane	11	9.5	4.2	NS	0.49 J	NS
2-Hexanone	ND	ND	ND	NS	ND	NS
Isopropyl Alcohol	13	44.7	9.6	NS	1.4	NS
Methylene chloride	ND	ND	ND	NS	1.7	NS
Methyl ethyl ketone	29	24	34.2	NS	0.86	NS
Methyl Isobutyl Ketone	ND	2.9 J	2.3 J	NS	ND	NS
Methyl Tert Butyl Ether	ND	ND	ND	NS	ND	NS
Methylmethacrylate	ND	ND	ND	NS	ND	NS
Propylene	ND	4.3	ND	NS	ND	NS
Styrene	7.7	2.7 J	2.3 J	NS	ND	NS
1,1,1-Trichloroethane	ND	ND	ND	< 100	ND	< 3
1,1,2,2-Tetrachloroethane	ND	ND	ND	NS	ND	NS
1,1,2-Trichloroethane	ND	ND	ND	NS	ND	NS
1,2,4-Trichlorobenzene	ND	ND	ND	NS	ND	NS
1,2,4-Trimethylbenzene	14	19	15	NS	ND	NS
1,3,5-Trimethylbenzene	3.5 J	5.4	3.9	NS	ND	NS
2,2,4-Trimethylpentane	1,740 a	8.4	2.1 J	NS	0.44 J	NS
Tertiary Butyl Alcohol	10	667 a	8.2	NS	ND	NS
Tetrachloroethylene	16 J	3.7	26 J	< 100	ND UJ	< 3
Tetrahydrofuran	36.3	23	39.5	NS	ND	NS
Toluene	62.9	73.9	60.7	NS	1.0	NS
Trichloroethylene	ND	ND	ND	< 5	ND	< 0.25
Trichlorofluoromethane	2.2 J	ND	2.2 J	NS	2.0	NS
Vinyl chloride	ND	ND	ND	< 5	ND	< 0.25
Vinyl Acetate	ND	ND	ND	NS	ND	NS
m,p-Xylene	34 J	51.7	39 J	NS	0.74 J	NS
o-Xylene	11 J	19	13 J	NS	ND UJ	NS
Xylenes (total)	45.2 J	70.4	51.3 J	NS	0.74 J	NS

Notes:
J- Analyte detected below quantitation limits.
ND- Not detected at or above laboratory detection limits.
NS- No standard for specific compound
a - Results from Run #2
ug/m^3 - micrograms per cubic meters

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
*NYSDOH guidence for evaluating Soil Vapor in the State of New York
Oct. 2006 Matrix 1 & 2 levels for "No Further Action"

SV-X is a duplicate of RISV-1

Table 4
Validated Volatile Organic Compounds in Sub-Slab Vapor and Indoor Air Samples 2012
Elks Plaza
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^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
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	NS
1,3,5-Trimethylbenzene	4.9	2.9	0.98	NS	3.3 J	2.8 J	2.4 J	NS
2,2,4-Trimethylpentane	ND	ND	ND	NS	1, 810a	4.5	ND	NS
Tertiary Butyl Alcohol	0.49 J	1.8	ND	NS	ND	ND	ND	NS
Tetrachloroethylene	ND UJ	ND UJ	0.26 J	< 3	3.5 J	ND UJ	142 J	< 100
Tetrahydrofuran	0.86	ND	ND	NS	8.3	8.6	14	NS
Toluene	1.5	1.2	1.4	NS	19	21	31	NS
Trichloroethylene	ND	ND	ND	< 0.25	ND	ND	ND	< 5
Trichlorofluoromethane	1.3	1.5	1.3	NS	ND	ND	4.8	NS
Vinyl chloride	ND	ND	ND	< 0.25	ND	ND	ND	< 5
Vinyl Acetate	ND	ND	ND	NS	ND	ND	ND	NS
m,p-Xylene	1.9 J	0.96 J	1.1 J	NS	19 J	17 J	25 J	NS
o-Xylene	1.3 J	0.56 J	0.52 J	NS	7.4 J	6.9 J	8.3 J	NS
Xylenes (total)	3.2 J	1.6 J	1.7 J	NS	26 J	25 J	33 J	NS

Notes:
J- Analyte detected below quantitation limits.
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
ND- Not detected at or above laboratory detection limits.
*NYSDOH guidence for evaluating Soil Vapor in the State of New York Oct. 2006 Matrix 1 & 2 levels for "No Further Action"
NS- No standard for specific compound
- Value Exceeds Standard - Monitoring Required
a -Result is from run #2
ug/m^3 - micrograms per cubic meters

Table 5
Validated Volatile Organic Compounds in Sub-Slab Vapor, Indoor Air, and Ambient Air Samples 2013
Woodward Childrens Center
Freeport, NY

Sample ID	IAB-12 2/22/13	IAG-5 2/22/13	IABasement 2/22/13	*NYSDOH 2006	SSB-12 2/22/13	SSG-5 2/22/13	SSBasement 2/22/13	SS-XX	*NYSDOH 2006	AA-1 2/22/13
Matrix	Indoor Air	Indoor Air	Indoor Air	Matrix1/Matrix 2	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Matrix1/Matrix 2	Ambient Air
Date Sampled	2/22/2013	2/22/2013	2/22/2013	Indoor Air	2/22/2013	2/22/2013	2/22/2013	2/22/2013	Sub-Slab Vapor	2/22/2013
Volatile Organic Compounds										
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
Acetone	19	11	3.6	NS	14	14	17	16	NS	7.6
1,3-Butadiene	ND	ND	ND	NS	2.7	ND	ND	ND	NS	ND
Benzene	1.2	1.2	1.0	NS	13	3.8	4.5	1.9 J	NS	1.8
Bromodichloromethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Bromoform	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Bromomethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Bromoethene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Benzyl Chloride	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Carbon disulfide	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Chlorobenzene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Chloroethane	ND	1.1	ND	NS	ND	ND	ND	ND	NS	ND
Chloroform	0.73 J	ND	ND	NS	ND	ND	ND	ND	NS	ND
Chloromethane	1.8	ND	0.93	NS	ND	ND	ND	ND	NS	1.5
3-Chloropropene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
2-Chlortoluene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Carbon tetrachloride	ND	ND	ND	< 0.25	ND	ND	ND	ND	< 5	ND
Cyclohexane	ND	ND	ND	NS	ND	4.1	ND	ND	NS	ND
1,1-Dichloroethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,1-Dichloroethylene	ND	ND	ND	< 3	ND	ND	ND	ND	< 100	ND
1,2-Dibromoethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,2-Dichloroethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,2-Dichloropropane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,4-Dioxane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Dichlorodifluoromethane	2.5	2.5	2.5	NS	2.9 J	2.6 J	3.1 J	2.6 J	NS	2.8
Dibromochloromethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
trans-1,2-Dichloroethylene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
cis-1,2-Dichloroethylene	ND	ND	ND	< 3	ND	ND	ND	ND	<100	ND
cis-1,3-Dichloropropene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
m-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
o-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
p-Dichlorobenzene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
trans-1,3-Dichloropropene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Ethanol	46.9	64.8	5.8	NS	18	11	26.6	14	NS	55.8
Ethylbenzene	ND	ND	ND	NS	4.3	5.2	6.9	5.2	NS	ND
Ethyl acetate	3.0	4.3	4.0	NS	4.3	2.1 J	6.5	9.7	NS	4.7
4-Ethyltoluene	ND	ND	ND	NS	ND	2.3 J	2.5 J	ND	NS	ND
Freon 113	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Freon 114	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Heptane	0.66 J	0.70 J	ND	NS	4.9	ND	ND	ND	NS	ND
Hexachlorobutadiene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Hexane	0.49 J	0.74	ND	NS	3.9	1.7 J	2.9	ND	NS	0.49 J
2-Hexanone	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Isopropyl Alcohol	22	28.5	1.2	NS	1.8 J	1.6 J	3.2	ND	NS	1.1
Methylene chloride	1.0	1.3	1.4	NS	2.8	ND	18	3.1	NS	0.76
Methyl ethyl ketone	1.5	0.62	ND	NS	4.1	3.5	7.4	4.4	NS	10
Methyl Isobutyl Ketone	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Methyl Tert Butyl Ether	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Methylmethacrylate	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Propylene	ND	ND	ND	NS	13	ND	ND	ND	NS	1.5
Styrene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,1,1-Trichloroethane	ND	ND	ND	< 3	ND	ND	ND	ND	< 100	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,1,2-Trichloroethane	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,2,4-Trichlorobenzene	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
1,2,4-Trimethylbenzene	1.4	ND	ND	NS	4.0	6.4	9.8	6.4	NS	ND
1,3,5-Trimethylbenzene	0.69 J	ND	ND	NS	ND	1.9 J	2.6 J	2.0 J	NS	ND
2,2,4-Trimethylpentane	0.61 J	0.65 J	ND	NS	ND	ND	ND	ND	NS	0.70 J
Tertiary Butyl Alcohol	ND	ND	ND	NS	ND	ND	ND	ND	NS	ND
Tetrachloroethylene	0.27	ND	ND	< 3	10	2.2	71.2	163	< 100	ND
Tetrahydrofuran	ND	0.62	ND	NS	4.1	ND	7.4	3.5	NS	ND
Toluene	1.1	1.1	ND	NS	15	14	30	16	NS	0.98
Trichloroethylene	ND	ND	ND	< 0.25	ND	2.0	ND	ND	< 5	ND
Trichlorofluoromethane	1.6	1.5	1.5	NS	ND	ND	3.0 J	ND	NS	1.3
Vinyl chloride	ND	ND	ND	< 0.25	ND	ND	ND	ND	< 5	ND
Vinyl Acetate	2.2	ND	ND	NS	ND	ND	ND	ND	NS	ND
m,p-Xylene	0.65 J	0.56 J	ND	NS	14	19	25	18	NS	0.48 J
o-Xylene	ND	ND	ND	NS	4.3	6.1	7.8	6.5	NS	ND
Xylenes (total)	0.65 J	0.56 J	ND	NS	19	25	33	24	NS	0.48 J

Notes:
J- Analyte detected below quantitation limits.
ND- Not detected at or above laboratory detection limits. *NYSDOH guidence for evaluating Soil Vapor in the State of New York Oct. 2006 Matrix 1 & 2 levels for "No Further Action"
NS- No standard for specific compound - Value Exceeds Standard - Monitoring Required
SS-XX is a duplicate of SSBasement 2/22/13
ug/m^3 - micrograms per cubic meters

Table 6
Validated Volatile Organic Compounds in Discreet Geoprobe Groundwater Samples
Elks Plaza
Freeport, NY

Sample ID	189 Smith	189 Smith	189 Smith	189 Smith	209 Smith	209 Smith	209 Smith	209 Smith	227 Smith	227 Smith	227 Smith	227 Smith	MW-XX	Field Blank 8/9	TRIP BLANK	*NYS TOGS
Depth	11-15 ft	26-30 ft	41-45 ft	56-60 ft	11-15 ft	26-30 ft	41-45 ft	56-60 ft	11-15 ft	26-30 ft	41-45 ft	56-60 ft				
Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Field Blank Water	Trip Blank Water	Groundwater
Date Sampled	8/9/2013	8/9/2013	8/9/2013	8/9/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/8/2013	8/9/2013	8/9/2013	Standards
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	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	NS
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
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	ND	0.48 J	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	ND	0.41 J	0.89 J	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
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
**NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998*

Table 7
Vapor Monitoring Point Construction Details
Elks Plaza
Freeport, NY

Well ID #	Indoor or Outdoor	Pipe Diameter	Point Depth	Date Installed	Soil Description & Seals/Depths
RISV-1	Outdoor	1/4" Stainless Steel	60 1/4 in.	8/21/2012	Tan fine grained soil with some gravel Backfilled with filter sand from 5'-3' Backfilled with native sand 3'-6" Bentonite and Concrete seal at surface
RISV-2	Outdoor	1/4" Stainless Steel	61 1/4 in.	8/21/2012	Tan fine grained soil with some gravel Backfilled with filter sand from 5'-3' Backfilled with native sand 3'-1' Bentonite and Concrete seal at surface
SSV G-5	Indoor	1/4" Stainless Steel	6.5 in.	8/21/2012	Concrete thickness about 4.5" Filled with sand almost to grade Sealed with Bees Wax
SSV B-12	Indoor	1/4" Stainless Steel	6 in.	8/21/2012	Concrete thickness about 4" Filled with sand almost to grade Sealed with Bees Wax
SSV Basement	Indoor	1/4" Stainless Steel	8 1/4 in.	8/21/2012	Concrete thickness about 3.5" Backfilled with sand almost to grade Bentonite and Concrete seal at surface

Table 8
Pre-Sampling Product Inventories
Woodward Children's Center
Freeport, NY

Location	Sample Date	Inventory
Classroom B-12	August 2012	There were no chemicals stored in this classroom. The floor had been cleaned and waxed one week before sampling
Classroom B-12	February 2013	There were no chemicals stored in this classroom.
Classroom G-5	August 2012	(4) 5-gallon containers of Vectra Floor Finish (3) 1-gallon containers of Rustoleum Paint (1) 5-gallon container of Thin Set Mortar (3) 1-gallon bleach All containers were tightly sealed and no odors were identified in this room.
Classroom G-5	February 2013	(4) 5-gallon containers of Vectra Floor Finish (2) 1-gallon containers of Rustoleum Paint (1) 5-gallon container of Thin Set Mortar (3) 1-gallon bleach All containers were tightly sealed and no odors were identified in this room.
Basement	August 2012	(1) Spray can of WD40 (1) Small plastic bottle of wood glue (1) Spray can of carpet cleaner (1) Spray can of vandalism/graffiti remover
Basement	February 2013	(1) Spray can of WD40 (1) Small plastic bottle of wood glue (1) Spray can of carpet cleaner (3) Spray can of vandalism/graffiti remover

APPENDIX A

Boring Logs and Well Construction Diagrams

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

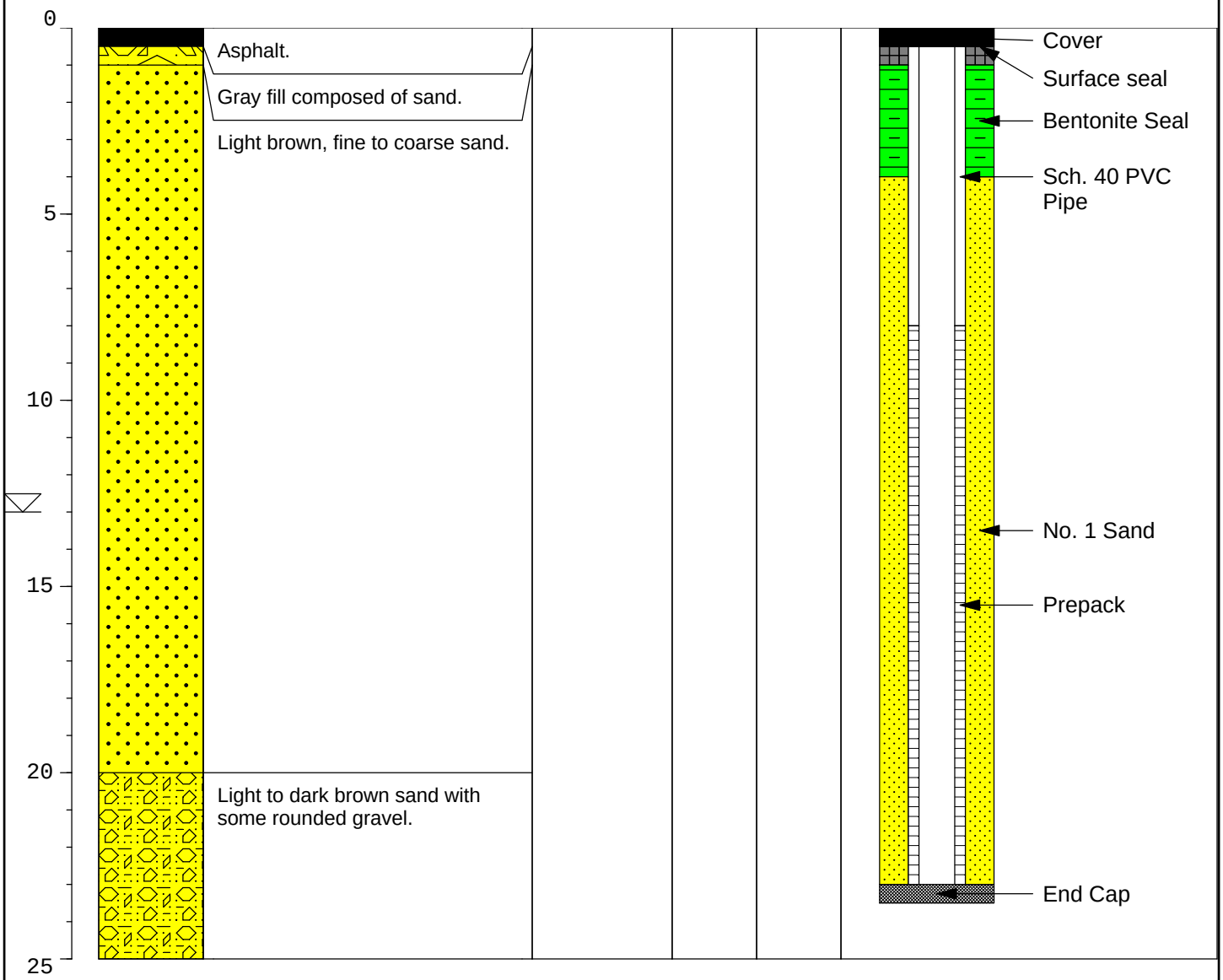
FIELD BORING LOG

BOREHOLE NO.: **MW-1**

TOTAL DEPTH: **25 ft.**

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:	**NA**
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



NOTES: Soil descriptions assumed from borehole MW-2.

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

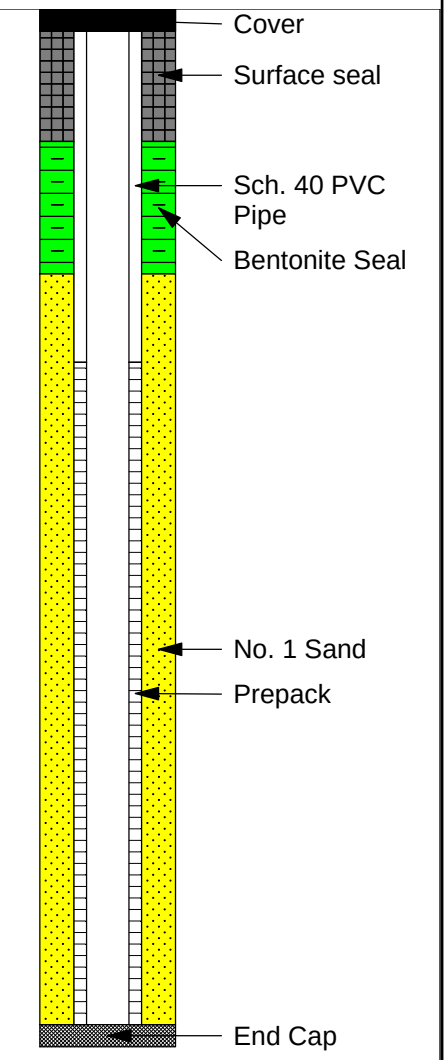
FIELD BORING LOG

BOREHOLE NO.: **MW-2**

TOTAL DEPTH: **25 ft.**

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.					
		Gray fill composed of sand.					
		Light brown, fine to coarse sand.	1	Push			
5			2	Push			
10			3	Push			
▽							
15							
20		Light to dark brown sand with some rounded gravel.	4	Push			
25							



NOTES:

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

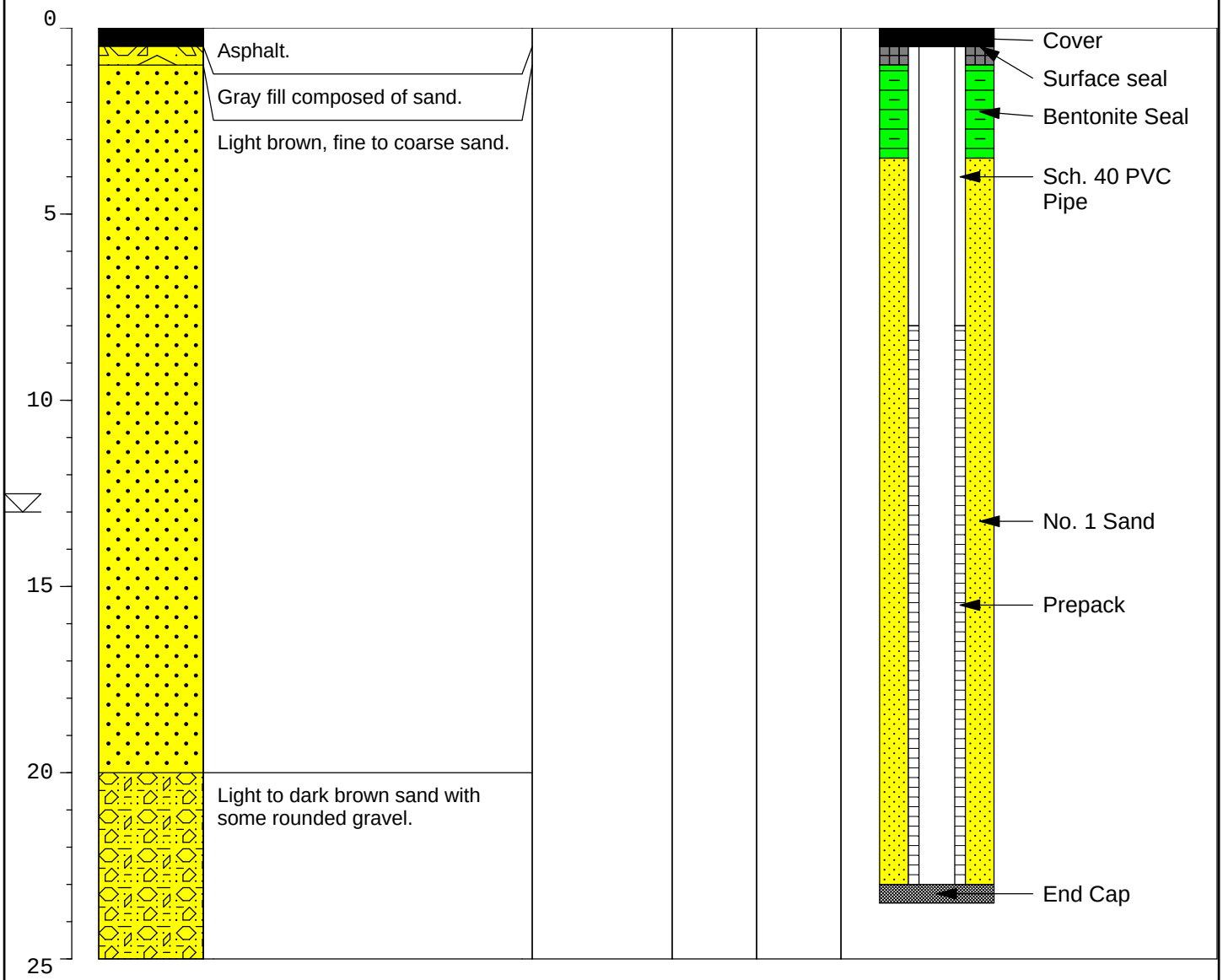
FIELD BORING LOG

BOREHOLE NO.: **MW-3**

TOTAL DEPTH: **25 ft.**

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:	**NA**
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



NOTES: Soil descriptions assumed from borehole MW-2.

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **SSV Basement**

TOTAL DEPTH: **8 in.**

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

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	

NOTES: