FINAL
REMEDIAL INVESTIGATION WORK PLAN

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

July 2012

Prepared for:

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

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803-1614

CA RICH ENVIRONMENTAL SPECIALISTS

e-mail: eweinstock@carichinc.com

July 26, 2012

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
625 Broadway
Albany, New York 12207-2942

Attention: Melissa Sweet
Project Manager

Re: **FINAL REMEDIAL INVESTIGATION WORK PLAN**
Elks Plaza, LLC.
157-189 West Merrick Road, Freeport, N.Y.
NYSDEC Site No.: 1-30-193

Dear Ms. Sweet:

CA RICH Consultants, Inc. (CA RICH) is pleased to provide you with this Final Remedial Investigation Work Plan on behalf of Elks Plaza, LLC. The subject Property, Elks Plaza Shopping Center, is located at 157-189 West Merrick Road in Freeport, New York (Site). A Site Location Map is presented in Figure 1 and a map indicating the property boundaries is included as Figure 6.

1.0 Introduction & Site Background

The subject Property is located on the south side of Sunrise Highway (Route 27) between South Long Beach Road and South Ocean Avenue. The shopping plaza is comprised of three one-story buildings. 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 is 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.

Our research of available background information has determined that that there are no wetlands 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 3. The map includes a public well field located hydraulically upgradient of the Site (north of Hwy. Rt. 27), along with several schools.

As part of this Work Plan, we submitted a freedom of information request to 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 and a map provided by NCDH illustrating the well locations within a ½-mile radius of the Site is presented in Figure 5.

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

The environmental concern at this Site is associated with a tenant of building space by a former dry cleaner located within the multi-tenant shopping plaza. 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.

Based on the results of those investigations, elevated levels of perchloroethene (PCE) were identified below the building space units 179A and 181. Unit 181 was the former location of a dry cleaning operation. This space is currently used as a Laundromat. These investigations are summarized in the following documents (Refs. 1, 2, 3 and 4).

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 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^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 is included as Appendix B.

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 is included as Appendix C.

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^3 at the beginning of the test to 210335 ug/m^3 at the end of the test. A sample location map and data tables for this investigation is included as Appendix D.

1.2 Summary of Remedial Investigation Activities

The following summarizes the remedial investigative work items included in this Work Plan:

- Using a backhoe machine, expose and uncover the top of a suspect leaching pool identified as a geophysical anomaly during the Site Characterization Investigation. The purpose is to collect a sample of the bottom sediment for volatile organic compounds (VOCs) analysis;

- Install a total of three water table groundwater monitoring wells for the purposes of collecting groundwater samples for VOC analysis and determining Site specific groundwater flow direction;

- Install one permanent exterior soil vapor monitoring point for the purposes of testing the potential for soil vapor containing VOCs to migrate between the Elks Plaza property and the adjoining property to the west;

- Install one permanent exterior soil vapor monitoring point for the purposes of testing the potential for soil vapor containing VOCs at an apartment house located at 222 Smith Street;

- Install three sub-slab vapor points at the Woodward Children Center at 210 Merrick Road to collect sub slab vapor along with three indoor air samples; and

- Prepare a Remedial Investigation Report to document the findings, and include a Qualitative Exposure Assessment and Feasibility Study to examine remedial options.

2.0 Scope of Work

Table 1 outlines and describes the laboratory analyses anticipated to complete the following scope of work. Included as Appendix G is a Health and Safety Plan and Community Air Monitoring Plan relative to the scope of work. At this time, we anticipate subcontractor services for the well installation will be provided by Zebra Environmental, Inc. of Lynbrook, NY and laboratory services will be provided by Accutest Laboratories, Inc. of Dayton, NJ.

2.1 Investigation of Suspect Leaching Pool

The investigation of the suspect leaching pool identified during a geophysical survey at the Site will include mobilizing a backhoe machine to the Site to expose and uncover the lid to the suspected pool, which is believed to be buried beneath the asphalt pavement at the southwest corner of the Site (see Figure 2). Should a buried leaching pool be found to exist, a manually operated soil auger will be lowered into the leaching pool for the purposes of securing a sample of the bottom sediment. The soil auger will be advanced into the top six inches of bottom sediment at three different sample locations within the pool and composited into a laboratory issued container. The sample will be stored in an ice-filled cooler until delivery to an ELAP-approved laboratory. Analysis will include VOCs using USEPA Method 8260 with NYSDEC ASP Category B deliverables. Additional field and laboratory QA/QC protocol is included in the attached Quality Assurance Project Plan (Appendix E).

Once the sample is collected, the construction details of the pool will be recorded (i.e. diameter, depth to bottom, etc.) and the lid will be replaced and covered with the existing excavated material.

2.2 Groundwater Monitoring Well Installation and Sampling

Prior to the installation of the monitoring wells, an underground utility markout will be performed in the areas proposed. A total of three permanent groundwater monitoring wells will be installed along the west, southwest and south perimeters of the Site using the direct push methodology (Geoprobe®). It is not anticipated that soil spoils will not be generated using this well installation method, nonetheless, any soil generated will be containerized in DOT rated 55-gallon drums and tested for proper disposal.

The monitoring wells will be designated MW-1, MW-2 and MW-3 and installed to an approximate depth of twenty two feet below the existing surface grade (see Figure 2). The wells will be constructed of 2-inch diameter, schedule 40 PVC riser pipe with fifteen feet of 20-slot size screen. The screen zone will straddle the water table with approximately 10 feet into the water table and five feet above the water table. The screened zone will be packed with no. 2 gravel up to two feet above the well screen. The well be completed with a minimum of a two foot bentonite seal above the gravel pack before being grouted to the surface and finished with a locking cap and flush mounted steel protective curb box. A typical monitoring well construction detail is illustrated in Figure 7. The elevation of the curb box rim and the top-of-inner PVC casing of each well will be surveyed by a NYS-licensed land surveyor to the nearest 0.01 of a foot mean sea level (MSL).

The wells will be developed upon installation using the surge and pump technique until conventional field parameters of pH, conductivity, turbidity (< 50 NTUs), and temperature have stabilized. Development water will be contained in 55-gallon DOT-approved drums. The wells will be allowed to equilibrate in the aquifer for a least one week prior to groundwater sample collection.

Groundwater samples will be collected from each of the newly installed 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 with 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 8260 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 is included in the attached Quality Assurance Project Plan (Appendix E).

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" will be installed as part of the Work Plan. Soil vapor sample point "RISV-1" will be installed through the pavement behind the former dry cleaner building space between the building and the west property boundary. Soil vapor sample point "RISV-2" will be installed off-site in the grass area southwest of the Site boundary at the Smith Harbor Apartments located at 222 Smith Street pending approval by the property owner (see Figure 2). The vapor points will be 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. 3).

Using the NYSDOH guidelines as a reference, the soil vapor points will be installed by drilling a two inch diameter hole. The hole will be 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 will be filled with clean sand and then plugged with a bentonite seal up to the bottom portion of the protective curb box. The curb box will be cemented in-place and the inside finished with gravel to allow for any drainage.

The stainless steel sample probe will be fitted with a three-way "T" connector valve assembly and 1/4-inch polyethylene tubing. Before collecting the soil vapor sample, the sample tubing will be purged using a vacuum pump set at a rate of approximately 0.2 liters per minute. A helium tracer gas will be 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 will be screened for the tracer gas using a Gowmac® Model 21-250, or equivalent, gas leak detector. If there is a detection of more than 10% helium, the surface seal will be modified to create a proper seal and the process will be repeated until the seal is secured.

2.4 Installation of Sub-Slab Soil Vapor Probe Points and Sampling

One permanent sub-slab vapor sampling point will be installed in the basement of the Woodward Children's Center (201 Merrick Road). A second and third temporary sub-slab vapor sampling point will be installed on the ground floor of the building (Figure 2). Prior to the installation of the sub-slab vapor sampling points, an inspection of the building will be conducted. Temporary sub-slab vapor sampled will be collected in class room B12 and G5.

In addition, a Building Questionnaire and Product Inventory inspection will be conducted as part of the soil vapor investigation. During the sampling event, indoor air samples and an ambient outdoor air sample will also be collected during the sub-slab vapor eight hour sampling period.

The installation of the sub-slab vapor sampling points and subsequent testing will be performed 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. 5).

2.5 Receptor Survey

CA RICH will conduct a sensitive receptor survey to identify any potential impacts to human health and/or the environment. The survey will include nearby schools, daycare centers, hospitals, medical centers, and nursing homes, as well as, municipal groundwater supply wells used for drinking water, groundwater recharge basins, surface water bodies, wetlands, or other ecologically sensitive resources. The survey will also include the identification of any on-site utility vaults or building foundation basements and storm water drains.

3.0 Remedial Investigation Summary Report

Once the laboratory results are obtained, a Remedial Investigation (RI) Report will be prepared for NYSDEC and will comply with NYSDEC's Program Policy "DER-10 / Technical Guidance for Site Investigation and Remediation" (Ref. 6). The report will be delivered in an electronic format acceptable to the Department and the data packages will be EDD / EQuIS compliant. At a minimum, the report will include the following items:

- A description of the work performed;
- Boring logs and well construction diagrams;
- Laboratory summary tables and maps;
- A Data Usability Summary Report including the laboratory data;
- Conclusions and recommendations;
- A Qualitative Exposure Assessment and;
- A Feasibility Study

Included on Figure 4 is the anticipated schedule to complete the work items of the Plan.

If you have any questions regarding this Work Plan, please do not hesitate to call our Office.

Sincerely,

CA RICH CONSULTANTS, INC.

Steve Sobstyl
Senior Project Manager

Eric A. Weinstock
Vice President

ec: George Tsilogiannis
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Lois Reisman
apjmanagement@optonline.net
Suzanne Avena, Esq.
savena@garfunkelwild.com

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

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

FIGURES

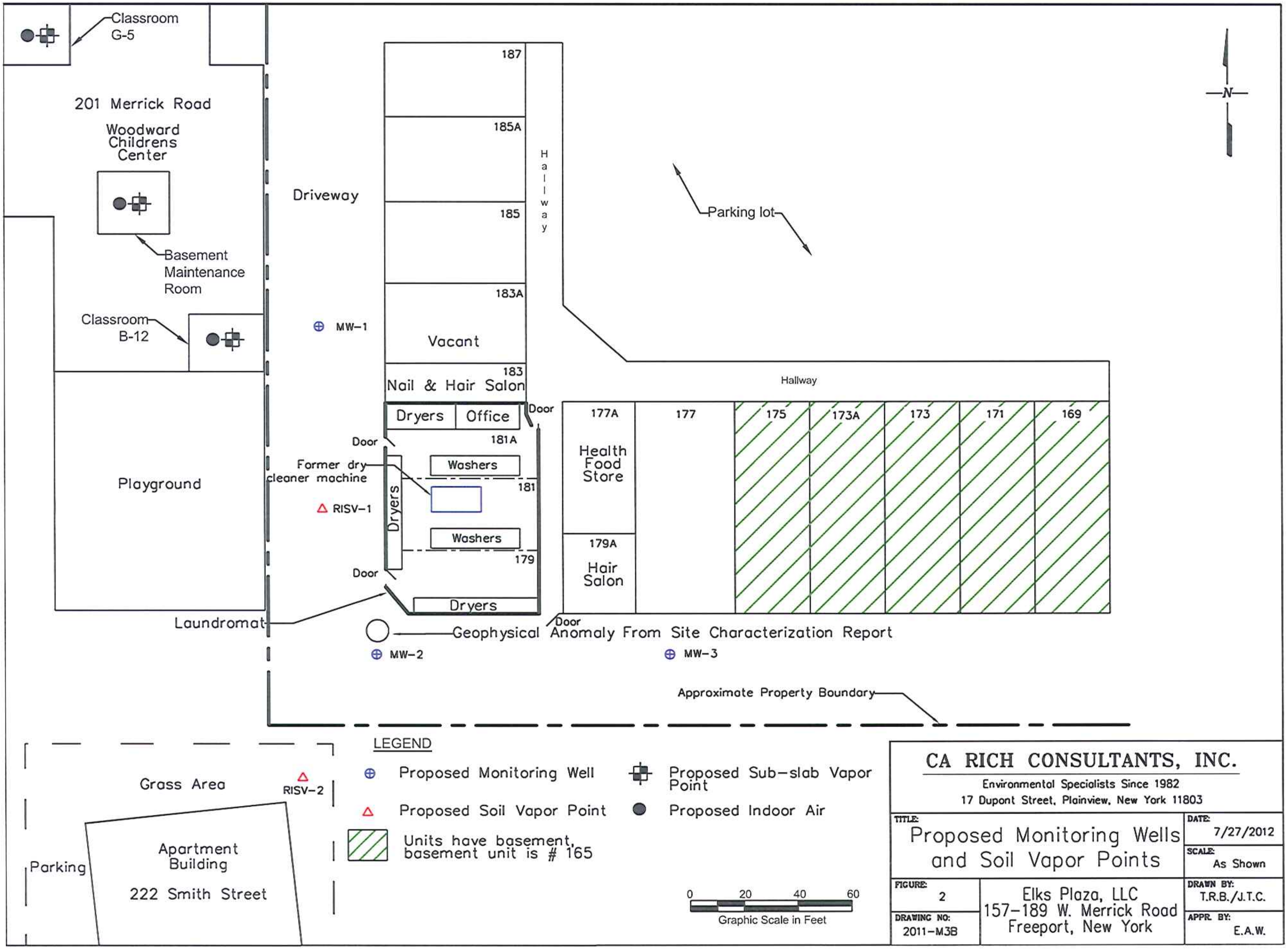
Adapted from USGS 1969, Photorevised 1979, Freeport, New York Quadrangle Map.

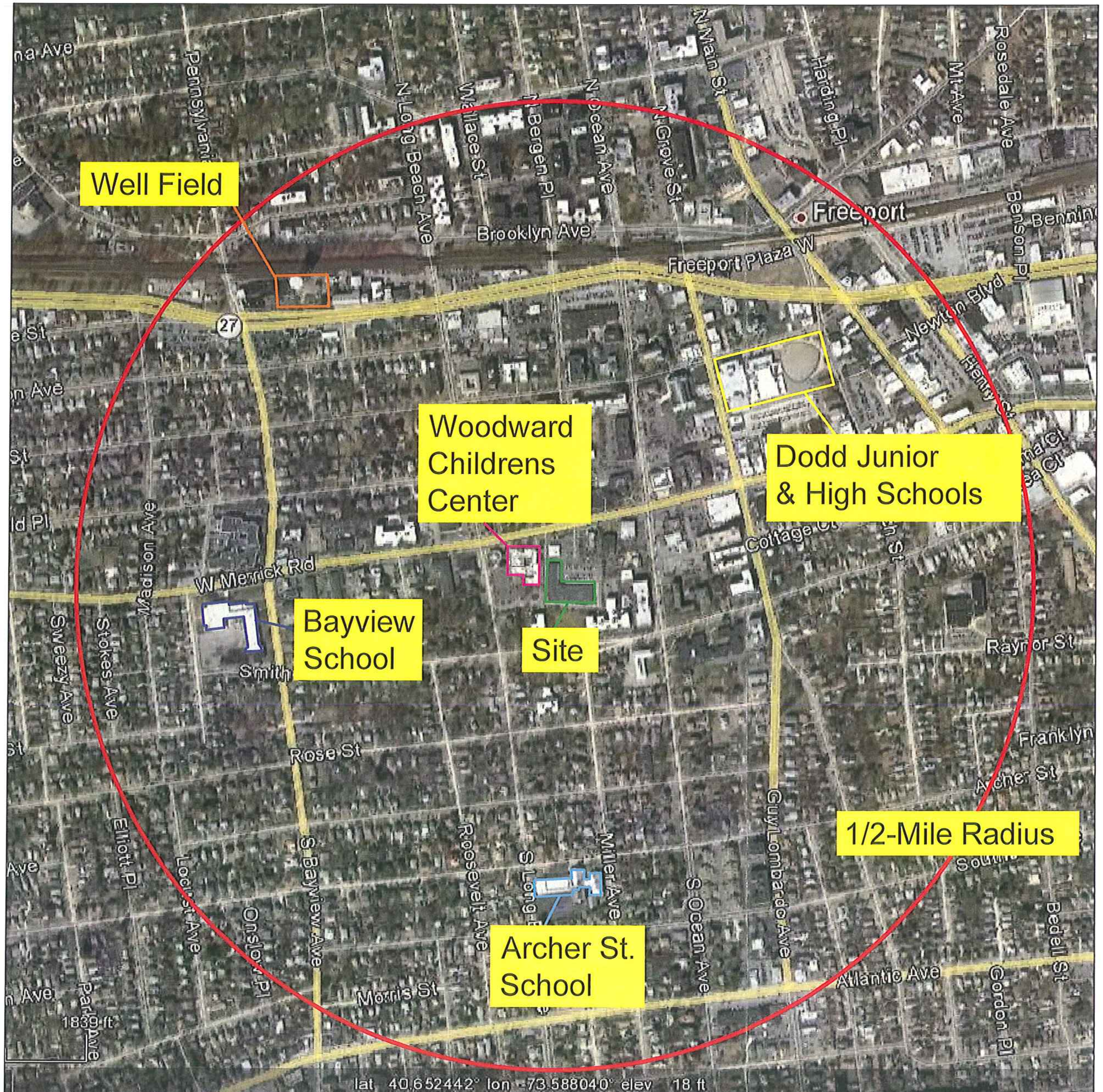
N

CA RICH CONSULTANTS, INC.

Certified Ground Water and Environmental Specialists
17 Dupont Street, Plainview, NY 11803

TITLE: **SITE LOCATION MAP**		DATE: **10/4/2011**
		SCALE: **Not to Scale**
FIGURE: **1**	**Elks Plaza, LLC** **157-189 W. Merrick Road** **Freeport, New York**	DRAWN BY: **J.T.C**
DRAWING:		APPR. BY: **E.A.W**


Classroom G-5
201 Merrick Road
Woodward Childrens Center
Basement Maintenance Room
Classroom B-12
Playground
Laundromat
Driveway
MW-1
187
185A
185
183A
Vacant
183
Nail & Hair Salon
Hallway
Dryers
Office
Door
181A
Former dry cleaner machine
Washers
181
RISV-1
Dryers
Washers
179
Door
Dryers
Parking lot
Hallway
177A
Health Food Store
179A
Hair Salon
177
175
173A
173
171
169
Door
Geophysical Anomaly From Site Characterization Report
MW-2
MW-3
Approximate Property Boundary
N
Grass Area
RISV-2
Parking
Apartment Building
222 Smith Street
LEGEND
Proposed Monitoring Well
Proposed Soil Vapor Point
Units have basement, basement unit is # 165
Proposed Sub-slab Vapor Point
Proposed Indoor Air
0 20 40 60
Graphic Scale in Feet
CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803
TITLE: Proposed Monitoring Wells and Soil Vapor Points
DATE: 7/27/2012
SCALE: As Shown
FIGURE: 2
DRAWING NO: 2011-M3B
Elks Plaza, LLC
157-189 W. Merrick Road
Freeport, New York
DRAWN BY: T.R.B./J.T.C.
APPR. BY: E.A.W.



N

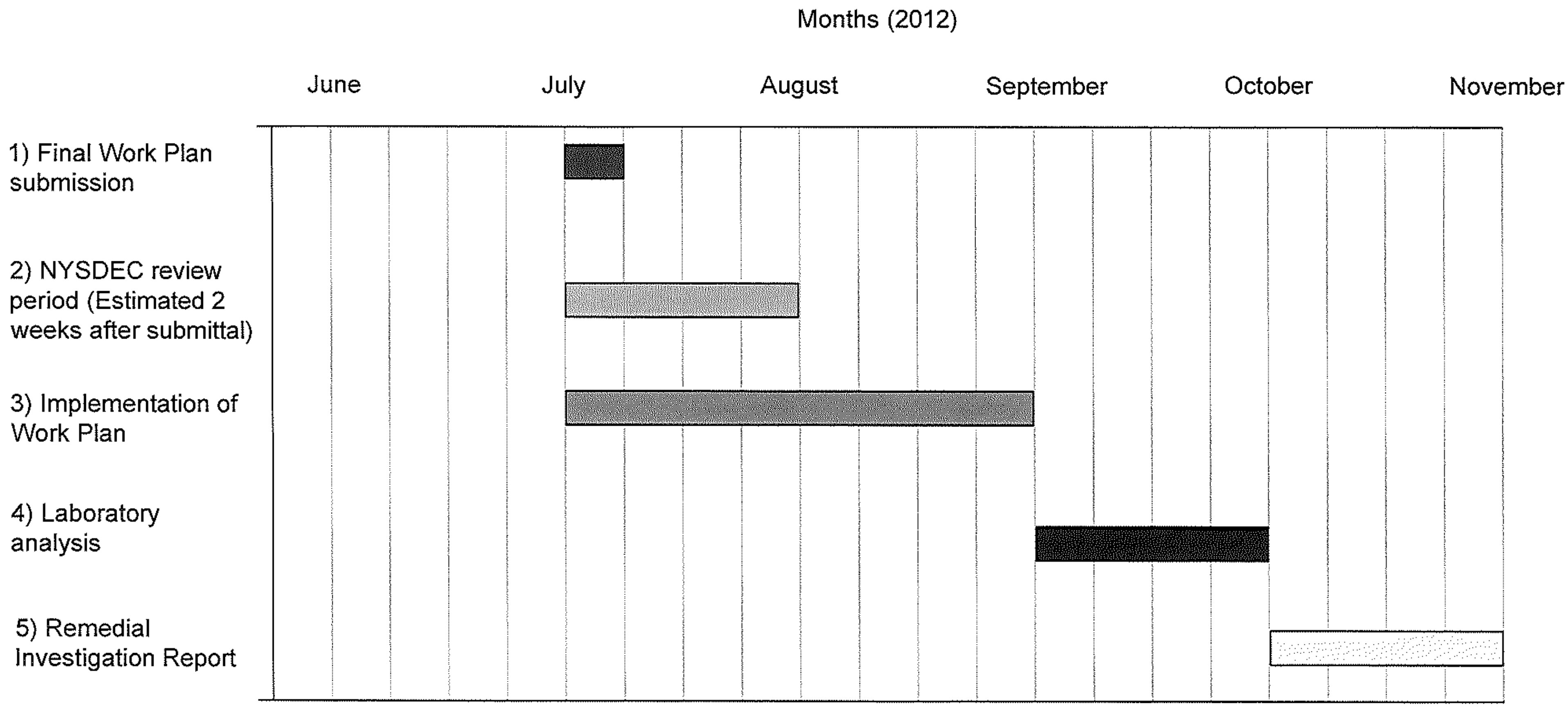
Legend

- Bayview School
- Dodd Junior & Senior Schools
- Archer St. School
- Site
- Well Field
- Woodward Childrens Center

CA RICH CONSULTANTS, INC.

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

TITLE: 1/2–Mile Radius Map With Sensitive Receptors		DATE: 5/25/2012
		SCALE: AS SHOWN
FIGURE: 3	Elks Plaza, LLC 157–189 Merrick Rd Freeport, New York	DRAWN BY: J.T.C.
DRAWING NO: 2012-4		APPR. BY: E.A.W.



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

TITLE: Anticipated Remedial Investigation Timeline		DATE: 7/27/2012
		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: 2012–3A		APPR. BY: E.A.W.

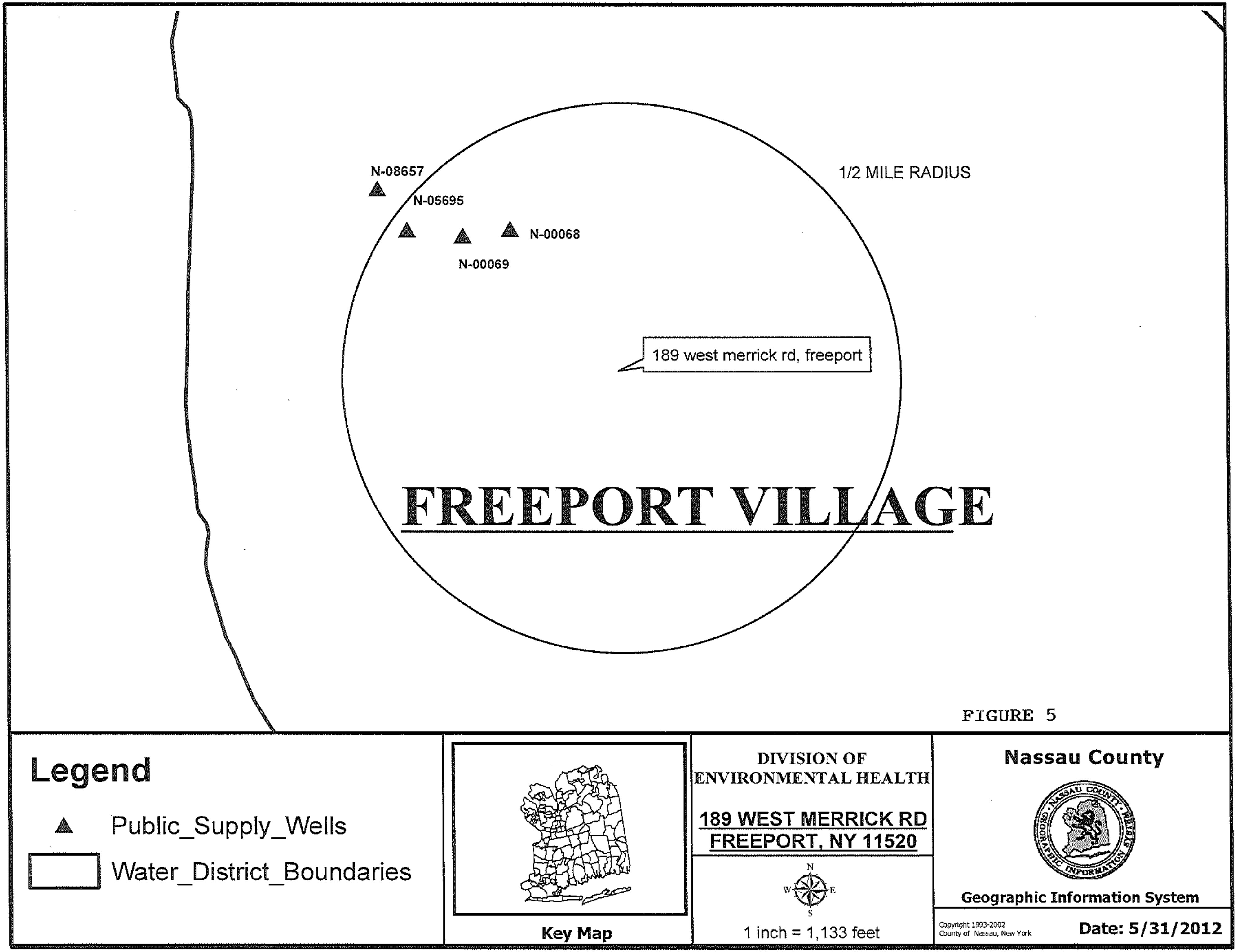
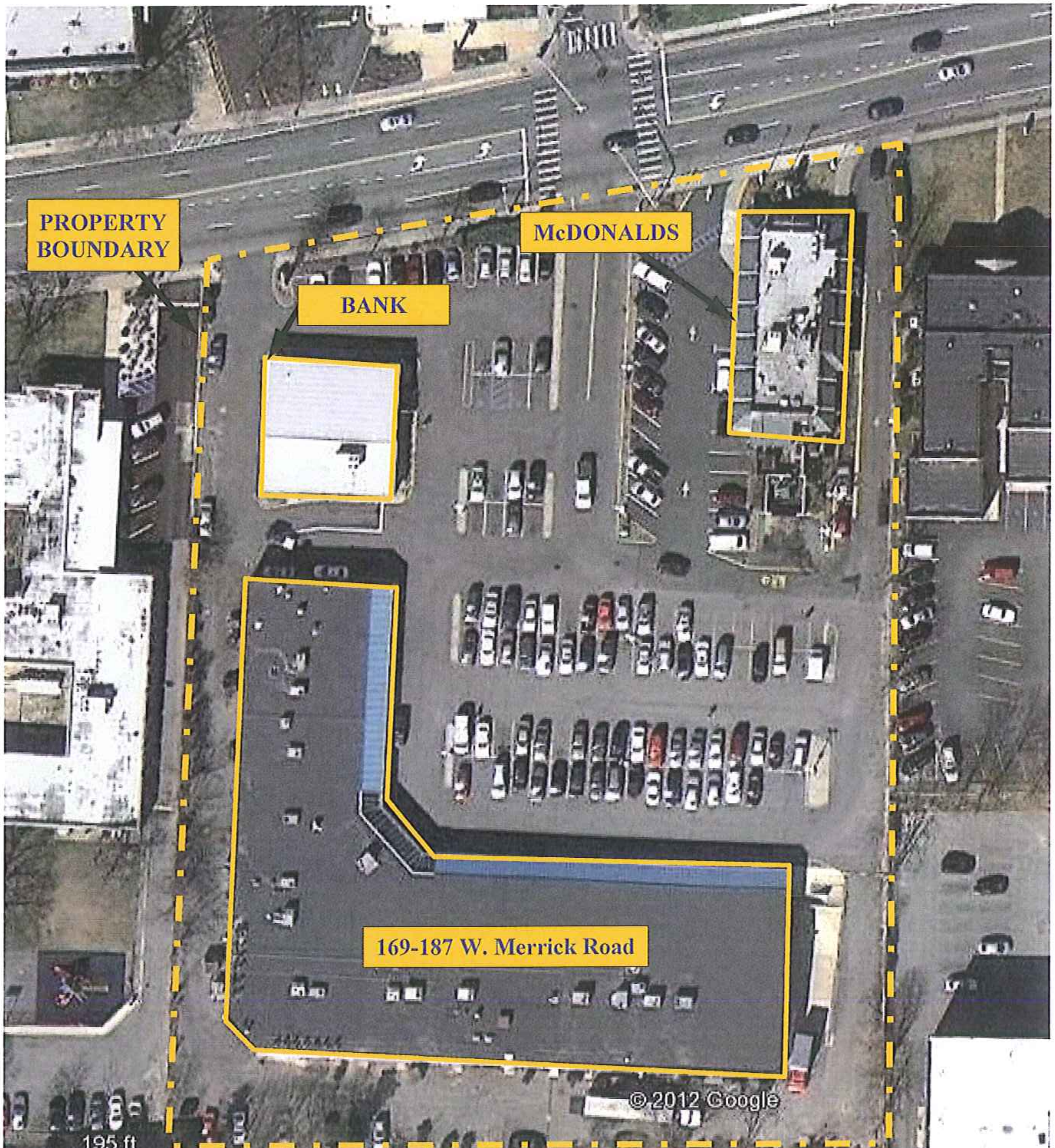

N-08657
N-05695
N-00068
N-00069
1/2 MILE RADIUS
189 west merrick rd, freeport
FREEPORT VILLAGE
Legend
Public_Supply_Wells
Water_District_Boundaries
Key Map
DIVISION OF
ENVIRONMENTAL HEALTH
189 WEST MERRICK RD
FREEPORT, NY 11520
N
W
E
S
1 inch = 1,133 feet
Nassau County
Geographic Information System
Copyright 1993-2002
County of Nassau, New York
Date: 5/31/2012

FIGURE 5



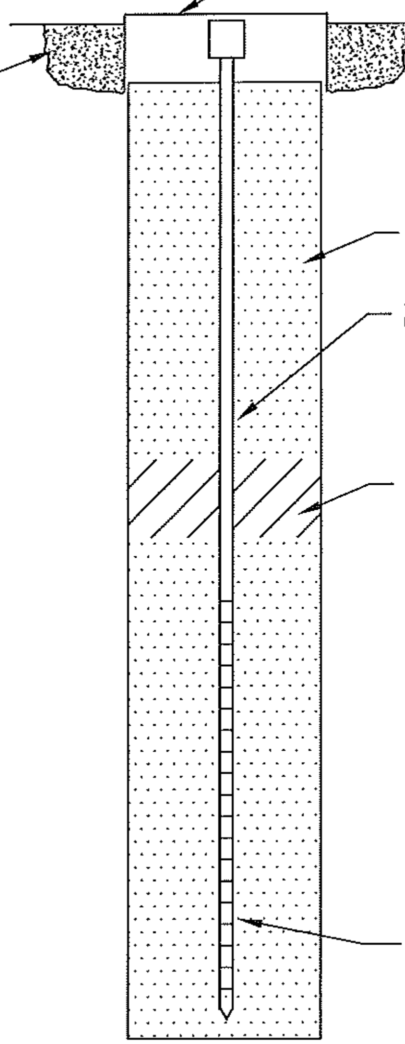
N

Adapted from Google Earth 2012

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

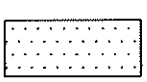
TITLE: **SITE PLAN WITH PROPERTY BOUNDARIES**		DATE: **6/8/2012** SCALE: **Not to scale**
FIGURE: **6**	**Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York**	DRAWN BY: **JTC**
DRAWING:		APPR. BY: **EAW**

Monitoring Well



LEGEND


2-FOOT BENTONITE SEAL


NO. 2 GRAVEL

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

TITLE: Typical Groundwater Monitoring Well Details		DATE: 7/26/2012
		SCALE: Not To Scale
FIGURE: 7	Elks Plaza, LLC 157-189 W. Merrick Road Freeport,NY	DRAWN BY: J.T.C.
DRAWING NO: 1152-1A		APPR. BY: L.C.R.

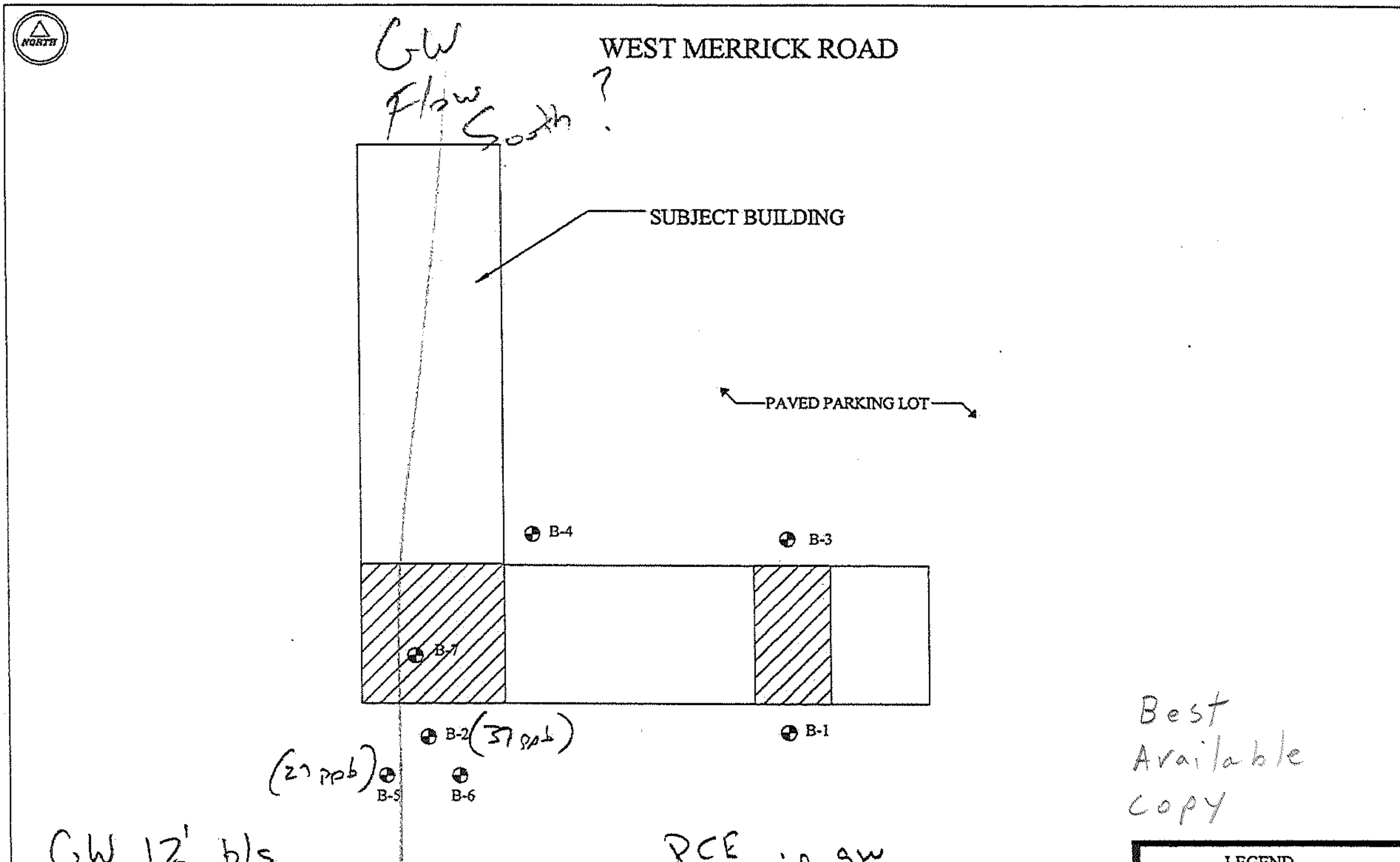
TABLE

TABLE 1
Sample Contaner Details for Soil, Groundwater and Soil Vapor Samples
Elks Plaza, LLC.
157-189 Merrick Road
Freeport, New York

Matrix and Parameters	Number Samples	Container / Preservative	Number of QA/QA Samples				Holding Time*
			MS / MSD	Duplicate	Trip Blank	Field Blank	
Soil							
VOCs (USEPA Method 8260)	1	2 oz. jar / Ice	1 / 1	1	1	1	14 Days
Groundwater							
VOCs (USEPA Method 8260)	3	40 ml vials / HCL / Ice	1 / 1	1	1	1	14 Days
Soil Vapor							
VOCs (USEPA Method TO-15)	10	6-Liter SUMMA canister / None	NA	1	NA	NA	30 Days

Appendix A

Phase II Sample Location Map and Data Tables



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

FIGURE 1.0 - SITE DIAGRAM

SITE LOCATION: 157-189 MERRICK ROAD
FREEPORT, NEW YORK

DATE: DECEMBER 18, 2006

SCALE: NOT TO SCALE

LEGEND

FORMER DRY CLEANER (hatched area)

BORING LOCATION (⊕)

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-Dichlorethane	200	<5	<5	<5	<5	<5
1,2-Dichlorethane	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
1,1,2,2-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

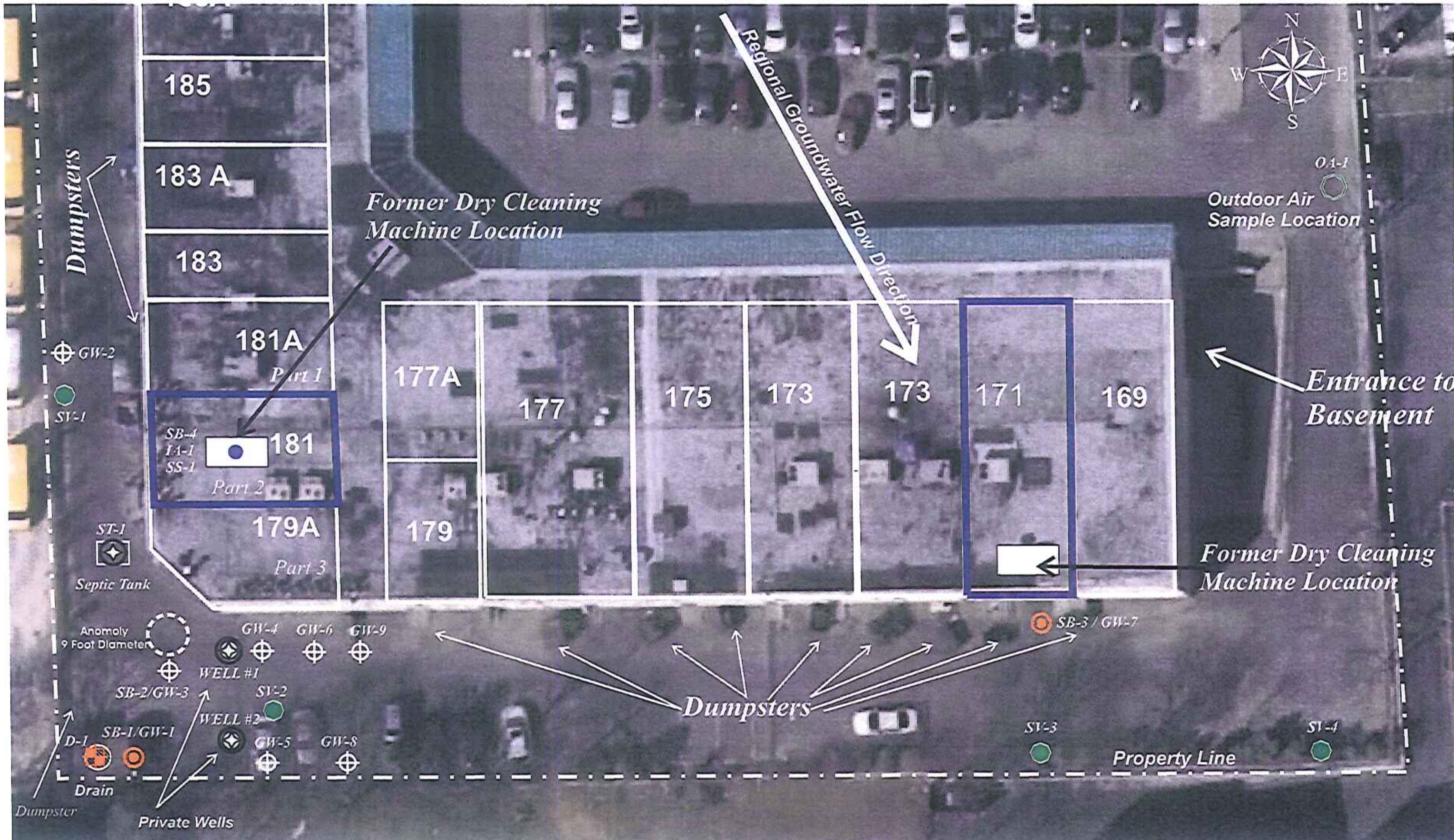
TABLE 2 Groundwater Analytical Data EPA Method 8260 - Volatile Organic Compounds (VOCs)							
Analytical Parameter	**NYSDEC Groundwater Standards**	**B-3 GW**	**B-2 GW**	**B-3 GW**	**B-4 GW**	**B-5 GW**	**B-6 GW**
1,1-Dichlorethane	5	<5	<5	<5	<5	<5	<5
1,2-Dichlorethane	5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	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
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	<5	37	<5	<5	27	<5
Toluene	5	<5	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	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.

Appendix B

Site Characterization Report- Sample Location Map and Data Tables



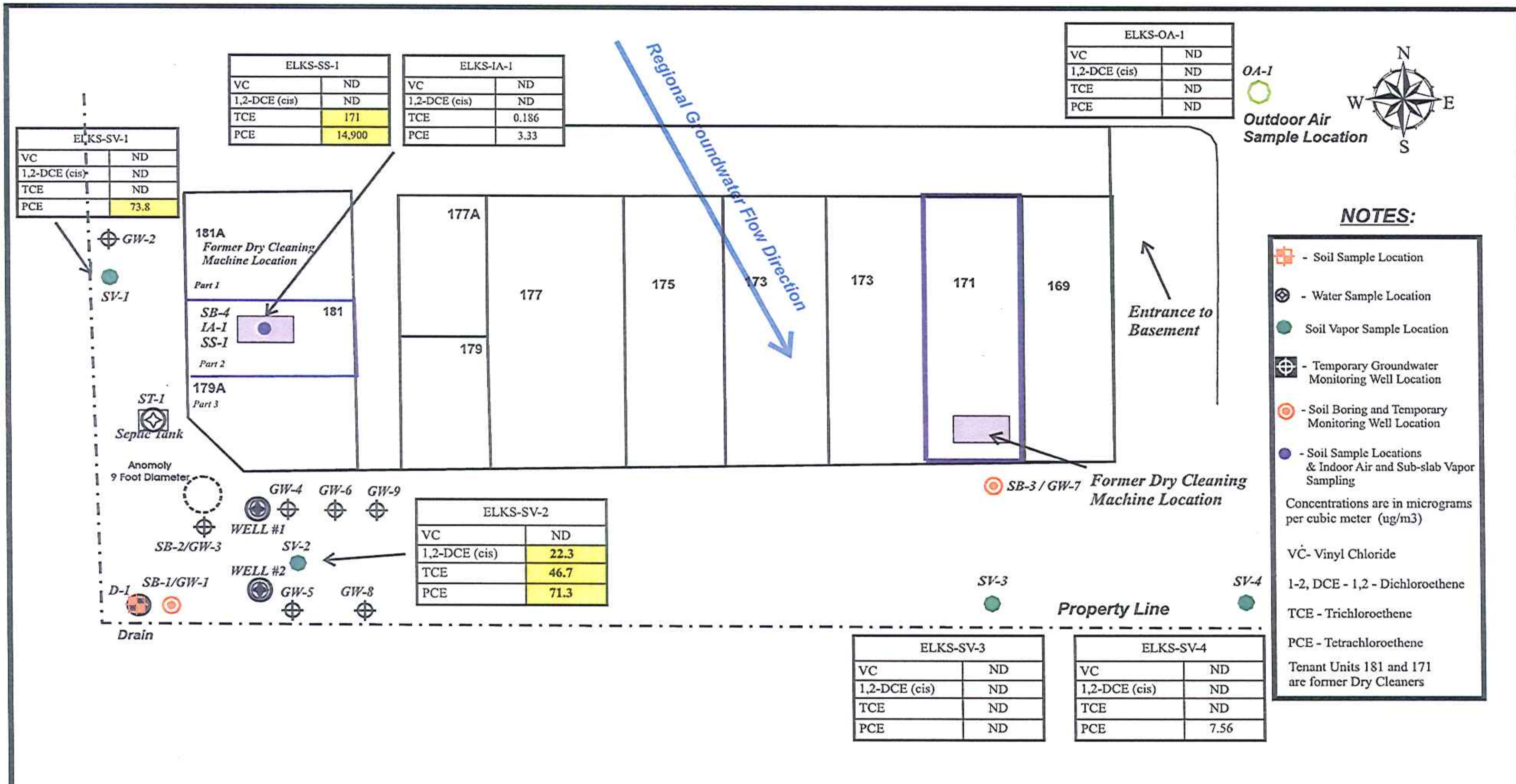
Tenant Units 181 and 171 are former Dry Cleaners

Figure 4 - April 2009 Site Characterization Sampling Locations

- 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

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

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



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

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

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

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

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

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

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

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

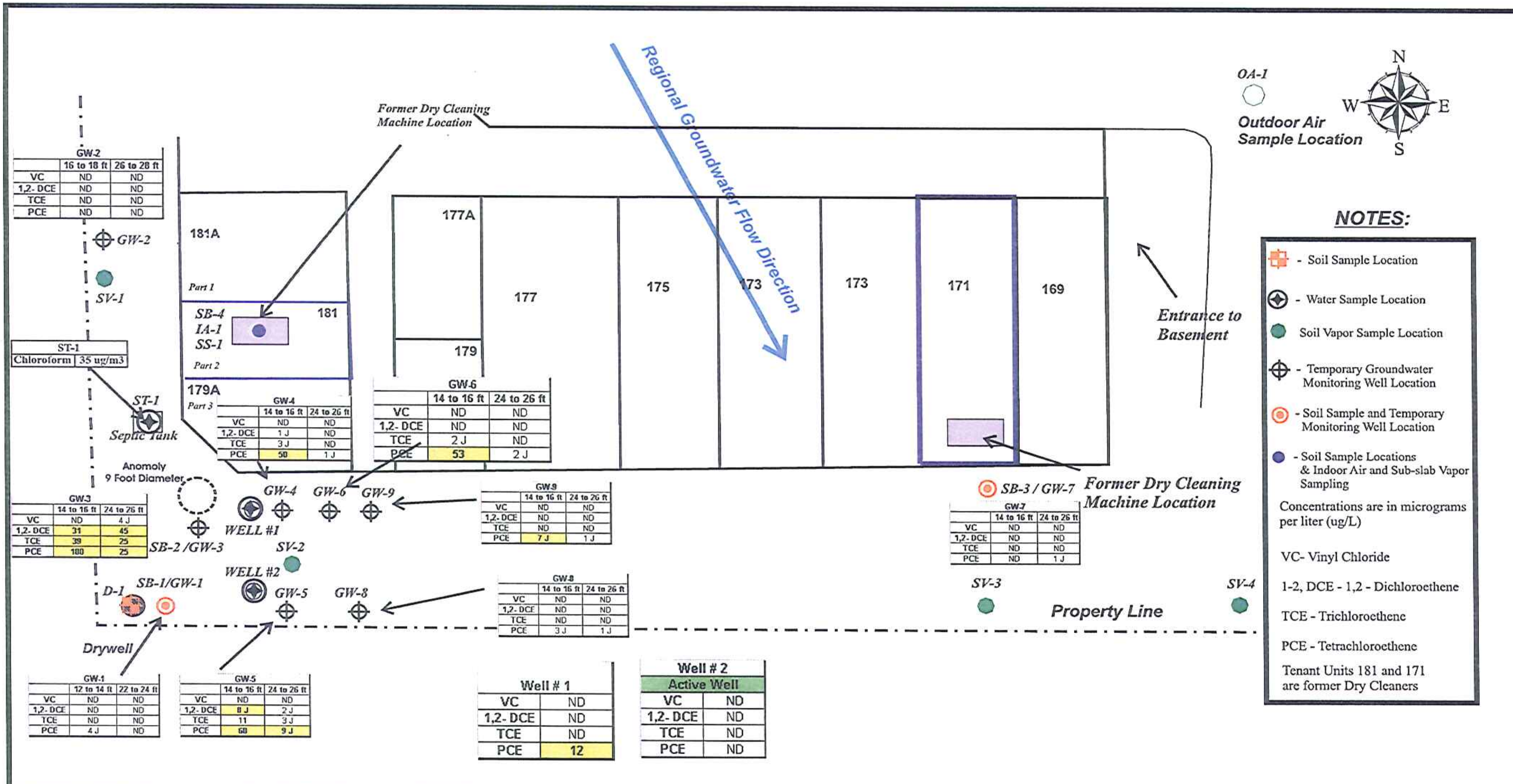
Figure 5 - April 2009 Subslab Vapor. Soil Vapor, Indoor Air and Outdoor Air Sampling Data

Client: Elks Plaza, LLC.

Date: April 2009

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

Scale:
0 35 ft



ST-1	
Chloroform	35 ug/m3

GW-2	16 to 18 ft	26 to 28 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	ND	ND
PCE	ND	ND

GW3	14 to 16 ft	24 to 26 ft
VC	ND	4 J
1,2- DCE	31	45
TCE	39	25
PCE	100	25

GW4	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	1 J	ND
TCE	3 J	ND
PCE	50	1 J

GW-6	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	2 J	ND
PCE	53	2 J

GW-9	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	ND	ND
PCE	7 J	1 J

GW-7	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	ND	ND
PCE	ND	1 J

GW-8	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	ND	ND
PCE	3 J	1 J

GW-1	12 to 14 ft	22 to 24 ft
VC	ND	ND
1,2- DCE	ND	ND
TCE	ND	ND
PCE	4 J	ND

GW-5	14 to 16 ft	24 to 26 ft
VC	ND	ND
1,2- DCE	8 J	2 J
TCE	11	3 J
PCE	60	9 J

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

Well # 2	
Active Well	
VC	ND
1,2- DCE	ND
TCE	ND
PCE	ND

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

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

Client: Elks Plaza, LLC.

Date: April 2009

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

Figure 7- Aerial Photograph of Elks Plaza and Surrounding Properties

-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

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

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 concentations 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 detecetd 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

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

			GW-1				GW-2				GW-3				GW-4				GW-5				
Sampling Date:			4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		4/9/2009		NYSDEC Class GA Ambient Water Quality Standards and Guidance Values (ug/L)
Project Location:			Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		Elks Plaza		
Sample ID:			GW-1 (12-14)	Qualifier	GW-1 (22-24)	Qualifier	GW-2 (16-18)	Qualifier	GW-2 (26-28)	Qualifier	GW-3 (14-16)	Qualifier	GW-3 (24-26)	Qualifier	GW-4 (14-16)	Qualifier	GW-4 (24-26)	Qualifier	GW-5 (14-16)	Qualifier	GW-5 (24-26)	Qualifier	
Laboratory ID:			0904471-001A		0904471-002A		0904471-003A		0904471-004A		0904471-005A		0904471-006A		0904471-007A		0904471-008A		0904471-009A		0904471-010A		
Cas #	Analyte	Units:																					
74-87-3	Chloromethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		NA
75-01-4	Vinyl Chloride	ug/L	ND		ND		ND		ND		ND		4	J	ND		ND		ND		ND		2
75-00-3	Chloroethane	ug/L	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		5
540-59-0	1,2-Dichloroethene (total)	ug/L	ND		ND		ND		ND		**31**		**45**		1	J	ND		**8**	J	2	J	5
67-64-1	Acetone	ug/L	7	UJ	3	UJ	6	UJ	8	UJ	3	UJ	5	UJ	3	UJ	4	UJ	ND	UJ	3	UJ	50
75-15-0	Carbon Disulfide	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	50
75-09-2	Methylene Chloride	ug/L	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		10
75-34-3	1,1-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
78-93-3	2-Butanone	ug/L	2	J	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	50
67-66-3	Chloroform	ug/L	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		5
56-23-5	Carbon Tetrachloride	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
71-43-2	Benzene	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.7
107-06-2	1,2-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
79-01-6	Trichloroethene	ug/L	ND		ND		ND		ND		**39**		**25**		3	J	ND		**11**		3	J	5
78-87-5	1,2-Dichloropropane	ug/L	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		50
10061-01-5	cis-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		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	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	50
108-88-3	Toluene	ug/L	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		NA
79-00-5	1,1,2-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
127-18-4	Tetrachloroethene	ug/L	4	J	ND		ND		ND		**180**		**25**		**50**		1	J	**68**		**9**	J	5
591-78-6	2-Hexanone	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	50
124-48-1	Dibromochloromethane	ug/L	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		5
100-41-4	Ethylbenzene	ug/L	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		5
100-42-5	Styrene	ug/L	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		50
79-34-5	1,1,2,2-Tetrachloroethane	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	5

Notes:
J- Indicates an estimated value
B- 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, Reissued June 1998
NA - Not Available
Bolded values indicate detected above NYSDEC Class GA Ambient Water Quality Standards

Elks Plaza,
Freeport New York
Soil Samples- April 2009

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

			GW-6				GW-7				GW-8				GW-9				Septic Tank		Supply Wells				
Sampling Date: Project Location: Sample ID: Laboratory ID:			4/10/2009 Elks Plaza GW-6 (14-16) 0904503-001A	Qualifier	4/10/2009 Elks Plaza GW-6 (24-26) 0904503-002A	Qualifier	4/10/2009 Elks Plaza GW-7 (13-15) 0904503-003A	Qualifier	4/10/2009 Elks Plaza GW-7 (23-25) 0904503-004A	Qualifier	4/10/2009 Elks Plaza GW-8 (14-16) 0904503-005A	Qualifier	4/10/2009 Elks Plaza GW-8 (24-26) 0904503-006A	Qualifier	4/10/2009 Elks Plaza GW-9 (14-16) 0904503-007A	Qualifier	4/10/2009 Elks Plaza GW-9 (24-26) 0904503-008A	Qualifier	4/10/2009 Elks Plaza ST-1 0904503-009A	Qualifier	4/10/2009 Elks Plaza WELL #1 0904503-010A DOS WELL	Qualifier	4/17/2009 Elks Plaza Well #2 0904738-001A ACTIVE WELL	Qualifier	NYSDEC Class GA Ambient Water Quality Standards and Guidance Values (ug/L)
Cas #	Analyte	Units:																							
74-87-3	Chloromethane	ug/L	ND		ND		ND		ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		NA
75-01-4	Vinyl Chloride	ug/L	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		50
75-35-4	1,1-Dichloroethene	ug/L	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		5
67-64-1	Acetone	ug/L	5	UJ	3	UJ	2	UJ	2	UJ	10	UJ	4	UJ	3	UJ	3	UJ	110	BJ	4	UJ	ND		50
75-15-0	Carbon Disulfide	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		50
75-09-2	Methylene Chloride	ug/L	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		10
75-34-3	1,1-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
78-93-3	2-Butanone	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	2	J	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		50
67-66-3	Chloroform	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		3	J	ND		ND		7
71-55-6	1,1,1-Trichloroethane	ug/L	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		5
71-43-2	Benzene	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.7
107-06-2	1,2-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
79-01-6	Trichloroethene	ug/L	2	J	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		1
75-27-4	Bromodichloromethane	ug/L	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		5
108-10-1	4-Methyl-2-pentanone	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		50
108-88-3	Toluene	ug/L	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		NA
79-00-5	1,1,2-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		5
127-18-4	Tetrachloroethene	ug/L	**53**		2	J	ND		1	J	3	J	1	J	**7**	J	1	J	ND		**12**		ND		5
591-78-6	2-Hexanone	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		50
124-48-1	Dibromochloromethane	ug/L	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		5
100-41-4	Ethylbenzene	ug/L	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		5
100-42-5	Styrene	ug/L	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		50
79-34-5	1,1,2,2-Tetrachloroethane	ug/L	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND	UJ	ND		5

Notes:
J- Indicates an estimated value
B- 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,
Reissued June 1998
NA - Not Available
Bolded values indicate detected above NYSDEC Class GA Ambient Water Quality Standards

Elks Plaza
Freeport New York
Air Samples- April 2009

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

Cas #	Sampling Date: / Project Location: / Sample ID: / Laboratory ID: Analyte	Units:	4/10/2009 Elks Plaza Elks-IA-1 0904888-01	Qualifier	4/17/2009 Elks Plaza Elks-OA-1 0904793-001A	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, Homes in NYS 1997 - 2003: Indoor: 25% to 75%	NYSDOH Study, Homes in NYS 1997 - 2003: Outdoor: 25% to 75%	NYSDOH Air Guidance Values (Specific to Indoor Air)	BASE Values (90th Percentile)
74-87-3	Chloromethane	ug/m3	2.91		1.18		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		ND		<0.25	<0.25	NA	<1.9
75-00-3	Chloroethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
75-35-4	1,1-Dichloroethene	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	<1.4
95-63-6	1,2,4-Trimethylbenzene	ug/m3	0.965		ND		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		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	11.8	J	ND		653	J	192	J	105	J	207	J	9.9 - 52	3.4 - 14	NA	NA
75-15-0	Carbon Disulfide	ug/m3	ND		ND		ND		ND		5.76		ND		ND		NA	NA	NA	NA
75-09-2	Methylene Chloride	ug/m3	ND		ND		ND		ND		ND		**43.5**		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		ND		<0.25 - 5.6	<0.25 - 0.86	NA	NA
75-34-3	1,1-Dichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
78-93-3	2-Butanone	ug/m3	2.21		1.21		ND		279		33.0		15.9		34.9		NA	NA	NA	NA
67-66-3	Chloroform	ug/m3	4.13		ND		ND		58.3		4.25		2260		ND		<0.25 - 0.54	<0.25	NA	NA
71-55-6	1,1,1-Trichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25 - 1.1	<0.25 - 0.33	NA	20.6
56-23-5	Carbon Tetrachloride (SIM)	ug/m3	0.563		0.543		ND		ND		ND		ND		ND		<0.25 - 0.59	<0.25 - 0.6	NA	NA
71-43-2	Benzene	ug/m3	2.15		1.00		ND		15.1		15.2		10.5		16.4		1.1 - 5.9	0.57 - 2.3	NA	NA
107-06-2	1,2-Dichloroethane	ug/m3	0.906		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
79-01-6	Trichloroethene (SIM)	ug/m3	0.186		ND		**171**		ND		**46.7**		ND		ND		<0.25	<0.25	5	4.2
78-87-5	1,2-Dichloropropane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
75-27-4	Bromodichloromethane	ug/m3	ND		ND		ND		ND		ND		51.6		ND		NA	NA	NA	NA
156-59-2	cis-1,2-Dichloroethene	ug/m3	ND		ND		ND		ND		22.3		ND		ND		<0.25	<0.25	NA	<1.9
10061-01-5	cis-1,3-Dichloropropene	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
108-10-1	4-Methyl-2-pentanone	ug/m3	ND		ND		ND		ND		2.85		ND		4.43		NA	NA	NA	NA
108-88-3	Toluene	ug/m3	19.8		2.34		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		ND		2.92		ND		ND		NA	NA	NA	NA
10061-02-6	trans-1,3-Dichloropropene	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
79-00-5	1,1,2-Trichloroethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
127-18-4	Tetrachloroethene	ug/m3	3.33		ND		**14,900**		**73.8**		**71.3**		ND		7.56		<0.25 - 1.1	<0.25 - 0.34	100	15.9
591-78-6	2-Hexanone	ug/m3	ND		ND		ND		ND		ND		ND		ND		NA	NA	NA	NA
124-48-1	Dibromochloromethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		NA	NA	NA	NA
75-71-8	Dichlorodifluoromethane	ug/m3	2.27		2.57		ND		ND		2.63		ND		3.05		<0.25 - 4.1	<0.25 - 4.2	NA	NA
108-90-7	Chlorobenzene	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<0.25	NA	NA
100-41-4	Ethylbenzene	ug/m3	ND		ND		ND		29.7		47.2		14.7		45.0		0.41 - 2.8	<0.25 - 0.48	NA	NA
1330-20-7	m/p-Xylene	ug/m3	2.00		ND		ND		103		147		49.1		142		0.50 - 4.6	<0.25 - 0.48	NA	NA
95-47-6	o-Xylene	ug/m3	ND		ND		ND		31.2		50.8		17.1		44.7		0.39 - 3.1	<0.25 - 0.56	NA	NA
100-42-5	Styrene	ug/m3	ND		ND		ND		7.29		10.5		ND		10.9		0.25 - 0.64	<0.25	NA	NA
75-25-2	Bromoform	ug/m3	ND		ND		ND		ND		ND		ND		ND		NA	NA	NA	NA
75-69-4	Trichlorofluoromethane	ug/m3	6.81		1.36		ND		ND		ND		ND		ND		1.1 - 5.4	<0.25 - 2.2	NA	NA
106-46-7	1,4-Dichlorobenzene	ug/m3	1.22		ND		ND		ND		ND		ND		ND		<0.25 - 0.54	<0.25	NA	NA
79-34-5	1,1,2,2-Tetrachloroethane	ug/m3	ND		ND		ND		ND		ND		ND		ND		<0.25	<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-'98). Unpublished. Indoor Environments Division, United States Environmental Protection Agency, Washington D.C.

ug/m^3 - 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 deteceld is associated blank as well as the sample

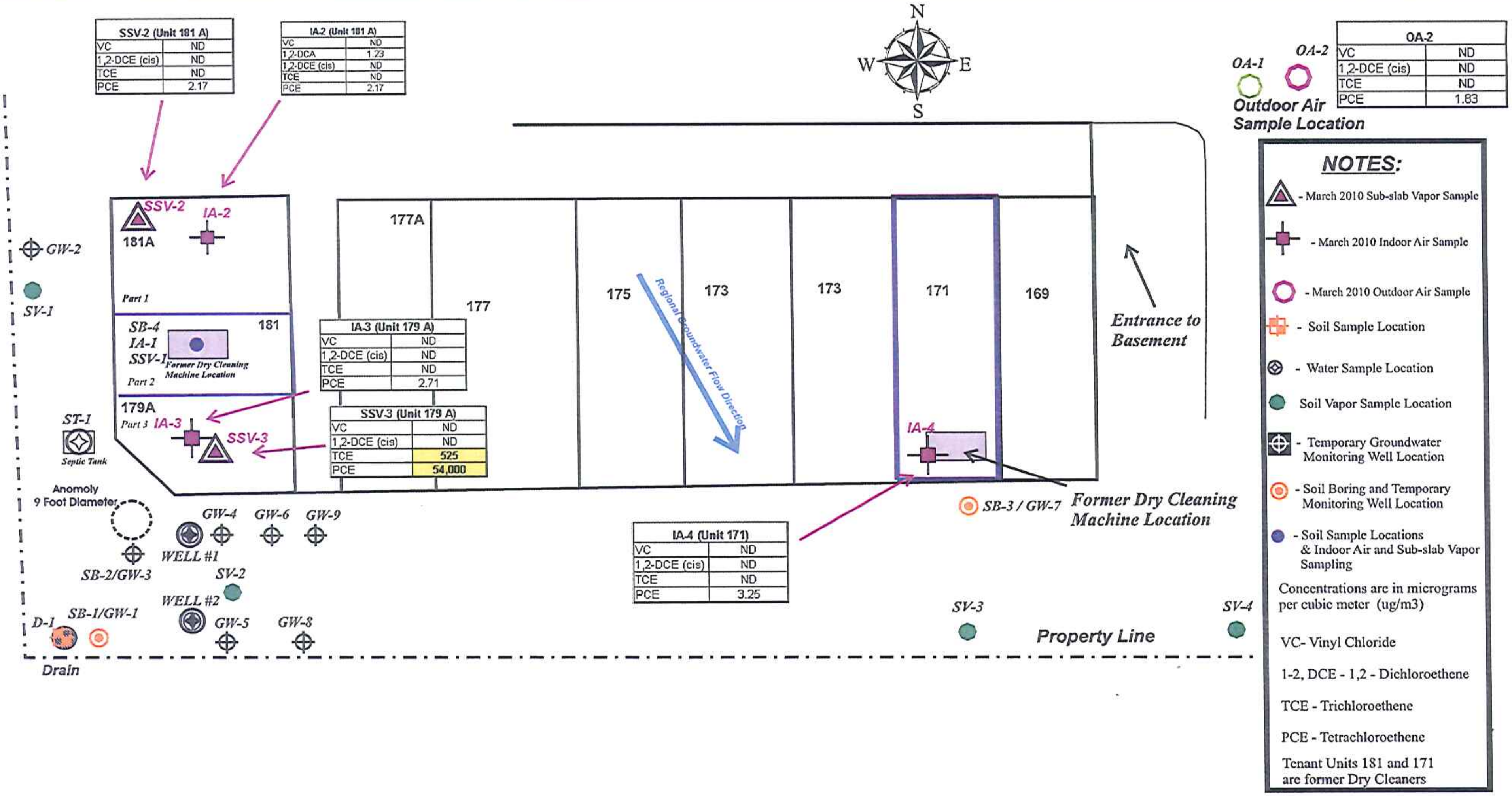
ND - Analyte no detected at concentration exceeding method detection limit

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

Appendix C

Supplemental Soil Vapor Investigation - Sample Location Map and Data Tables



SSV-2 (Unit 181 A)	
VC	ND
1,2-DCE (cis)	ND
TCE	ND
PCE	2.17

IA-2 (Unit 181 A)	
VC	ND
1,2-DCA	1.23
1,2-DCE (cis)	ND
TCE	ND
PCE	2.17

OA-2	
VC	ND
1,2-DCE (cis)	ND
TCE	ND
PCE	1.83

IA-3 (Unit 179 A)	
VC	ND
1,2-DCE (cis)	ND
TCE	ND
PCE	2.71

SSV-3 (Unit 179 A)	
VC	ND
1,2-DCE (cis)	ND
TCE	525
PCE	54,000

IA-4 (Unit 171)	
VC	ND
1,2-DCE (cis)	ND
TCE	ND
PCE	3.25

Figure 5 - March 2010 Subslab Vapor, Indoor Air and Outdoor Air Sampling Data

PREFERRED ENVIRONMENTAL SERVICES

323 Merrick Avenue - North Merrick, New York 11566

Tel: (516) 546-1100 Fax : (516) 213-8156

Client: Elks Plaza, LLC.

Date: March 16, 2010

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

Scale: 0 — 35 ft

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

Elks Plaza, Freeport, NY

	SDG PES013													
	Preferred Sample ID:		IA-2 (UNIT 181A)		IA-3 (UNIT 179A)		IA-4 (UNIT 171)		0A-2		SS-2 (UNIT 181A)		SS-3 (UNIT 179A)	
	Laboratory ID:		1003693-001		1003693-002		1003693-003		1003693-004		1003693-005		1003693-006	
	Sampling Date:		3/16/2010		3/16/2010		3/16/2010		3/16/2010		3/16/2010		3/16/2010	
	Dilution		1 and 5		1 and 5		1		1		2 and 4		10 and 600	
Cas #	Analyte	Units:												
75-71-8	Dichlorodifluoromethane	ug/m3	2.32		2.23		2.62		2.08		2.77		9.89	U
76-14-2	1,2-Dichlorotetrafluoroethane	ug/m3	0.699	U	0.699	U	0.699	U	0.699	U	1.40	U	6.99	U
74-87-3	Chloromethane	ug/m3	1.96		1.92		1.20		1.01		1.61		9.29	U
74-83-9	Bromomethane	ug/m3	0.971	U	0.971	U	0.971	U	0.971	U	1.94	U	9.71	U
75-01-4	Vinyl Chloride	ug/m3	0.230	U	0.230	U	0.230	U	0.230	U	0.460	U	2.30	U
75-00-3	Chloroethane	ug/m3	0.924	U	0.924	U	0.924	U	0.924	U	1.85	U	9.24	U
75-09-2	Methylene Chloride	ug/m3	1.98	UJ	2.74	UJ	5.70	UJ	1.91	UJ	3.13	UJ	9.38	UJ
67-64-1	Acetone	ug/m3	226		230		46.3		0.950	U	278		110	
75-15-0	Carbon Disulfide	ug/m3	0.934	U	0.934	U	0.934	U	0.934	U	1.87	U	9.34	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.766	U	0.766	U	0.766	U	0.766	U	1.53	U	7.66	U
75-35-4	1,1-Dichloroethene	ug/m3	0.991	U	0.991	U	0.991	U	0.991	U	1.98	U	9.91	U
75-34-3	1,1-Dichloroethane	ug/m3	0.809	U	0.809	U	0.809	U	0.809	U	1.62	U	8.09	U
75-69-4	Trichlorofluoromethane	ug/m3	3.37		2.87		12.8		1.07		4.05		9.55	
108-05-4	Vinyl Acetate	ug/m3	0.704	U	0.704	U	0.704	U	0.704	U	1.41	U	7.04	U
1634-04-4	Methyl tert-butyl ether	ug/m3	0.901	U	0.901	U	0.901	U	0.901	U	1.80	U	9.01	U
156-60-5	trans-1,2-Dichloroethene	ug/m3	0.991	U	0.991	U	0.991	U	0.991	U	1.98	U	9.91	U
156-59-2	cis-1,2-Dichloroethene	ug/m3	0.991	U	0.991	U	0.991	U	0.991	U	1.98	U	9.91	U
78-93-3	Methyl ethyl ketone	ug/m3	1.77		1.56		3.19		1.24		2.89		5.60	
67-66-3	Chloroform	ug/m3	2.20		2.83		0.977	U	0.977	U	1.95	U	9.77	U
107-06-2	1,2-Dichloroethane	ug/m3	1.23		0.912		0.793	U	0.793	U	1.59	U	7.93	U
71-55-6	1,1,1-Trichloroethane	ug/m3	0.818	U	0.818	U	0.818	U	0.818	U	1.64	U	8.18	U
56-23-5	Carbon Tetrachloride	ug/m3	0.503		0.503		0.629		0.252	U	0.629		2.52	U
75-27-4	Bromodichloromethane	ug/m3	1.00	U	1.00	U	1.00	U	1.00	U	2.01	U	10.0	U
78-87-5	1,2-Dichloropropane	ug/m3	0.924	U	0.924	U	0.924	U	0.924	U	1.85	U	9.24	U
10061-01-5	cis-1,3-Dichloropropene	ug/m3	2.27	U	2.27	U	2.27	U	2.27	U	4.54	U	22.7	U
79-01-6	Trichloroethene	ug/m3	0.242	U	0.242	U	0.242	U	0.242	U	0.484	U	525	
71-43-2	Benzene	ug/m3	1.95		1.66		1.28		0.767		2.24		9.58	U
124-48-1	Dibromochloromethane	ug/m3	0.852	U	0.852	U	0.852	U	0.852	U	1.70	U	8.52	U
10061-02-6	trans-1,3-Dichloropropene	ug/m3	2.27	U	2.27	U	2.27	U	2.27	U	4.54	U	22.7	U
79-00-5	1,1,2-Trichloroethane	ug/m3	0.818	U	0.818	U	0.818	U	0.818	U	1.64	U	8.18	U
75-25-2	Bromoform	ug/m3	1.03	U	1.03	U	1.03	U	1.03	U	2.07	U	10.3	U
108-10-1	Methyl Isobutyl ketone	ug/m3	4.10	U	0.820	U	0.820	U	0.820	U	1.64	U	8.20	U
591-78-6	Methyl Butyl Ketone	ug/m3	2.05	U	2.05	U	2.05	U	2.05	U	4.10	U	20.5	U
106-93-4	1,2-Dibromoethane	ug/m3	0.769	U	0.769	U	0.769	U	0.769	U	1.54	U	7.69	U
127-18-4	Tetrachloroethene	ug/m3	2.17		2.71		3.25		1.83		2.17		54000	
79-34-5	1,1,2,2-Tetrachloroethane	ug/m3	0.687	U	0.687	U	0.687	UJ	0.687	U	1.37	UJ	6.87	U
108-88-3	Toluene	ug/m3	13.4		11.4		11.1		1.81		14.0		24.1	
108-90-7	Chlorobenzene	ug/m3	0.921	U	0.921	U	0.921	U	0.921	U	1.84	U	9.21	U
100-41-4	Ethylbenzene	ug/m3	1.04		0.869	U	0.869	U	0.869	U	1.74	U	8.69	U
100-42-5	Styrene	ug/m3	0.852	U	0.852	U	0.852	U	0.852	U	1.70	U	8.52	U
1330-20-7	Xylene (m,p)	ug/m3	2.48		2.17		1.56		0.956		1.82		8.69	U
95-47-6	Xylene (o)	ug/m3	0.912		0.869	U	0.869	U	0.869	U	1.74	U	8.69	U
108-67-8	1,3,5-Trimethylbenzene	ug/m3	0.983	U	0.983	U	0.983	U	0.983	U	1.97	U	9.83	U
95-63-6	1,2,4-Trimethylbenzene	ug/m3	1.28		1.08		1.13		0.541		1.97	U	9.83	U
541-73-1	1,3-Dichlorobenzene	ug/m3	4.51	U	0.902	U	0.902	U	0.902	U	1.80	U	9.02	U
106-46-7	1,4-Dichlorobenzene	ug/m3	3.85		2.53		0.902	U	0.902	U	1.80	U	9.02	U
95-50-1	1,2-Dichlorobenzene	ug/m3	0.902	U	0.902	U	0.902	U	0.902	U	1.80	U	9.02	U
87-68-3	Hexachlorobutadiene	ug/m3	1.07	U	1.07	U	1.07	U	1.07	U	2.13	U	10.7	U
120-82-1	1,2,4-Trichlorobenzene	ug/m3	0.594	J	0.742	U	0.742	U	0.742	U	1.48	U	7.42	U

Notes:

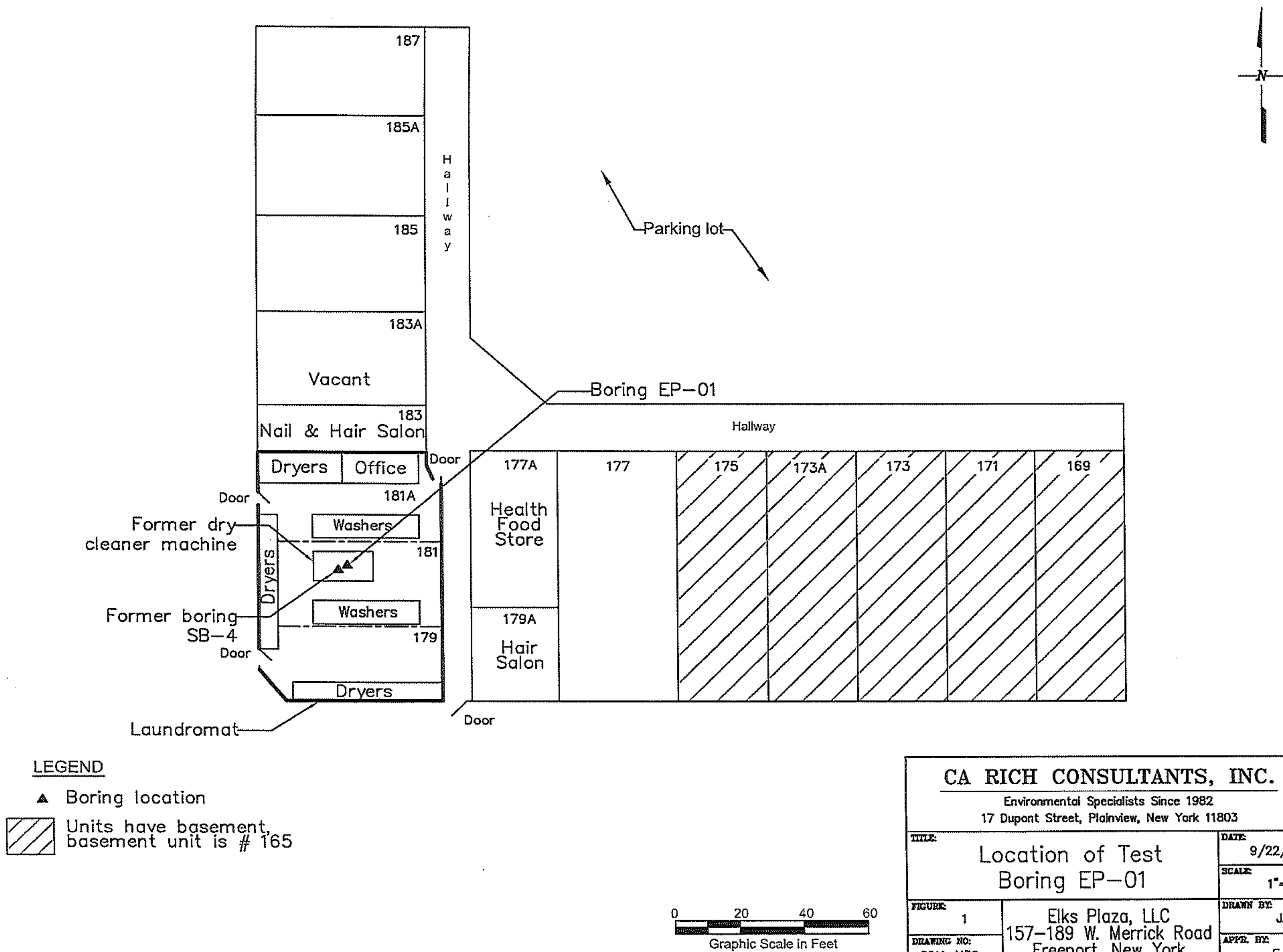
ug/m^3 - micrograms per cubic meter

NA - Not Available/Not Analyzed

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

Appendix D

Pilot Test for IRM Work Plan - Sample Location Map and Data Tables



CA RICH CONSULTANTS, INC. Environmental Specialists Since 1982 17 Dupont Street, Plainview, New York 11803		
TITLE: Location of Test Boring EP-01		DATE: 9/22/2011 SCALE: 1"=40'
FIGURE: 1 DRAWING NO: 2011-M3C	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York	DRAWN BY: J.T.C. APPR. 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 375 Soil Cleanup Commercial Use	**Part 375 Soil Cleanup for Protection of Groundwater	**Part 375 Soil Cleanup Unrestricted Use
Sample Depth	1-2 ft	7-8 ft	12-13 ft	12-13 ft	13-15 ft			
Matrix	Soil	Soil	Soil	Soil	Soil			
Date Sampled	6/15/2011	6/15/2011	6/15/2011	6/15/2011	6/15/2011			
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	1,900	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	1,800	1,800
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	500,000	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 (µg/kg) or parts per billion.

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

NVG=No value given

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

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

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

Sample ID:		EP-SW-Grab		EP-NE-Grab
Date Collected		8/18/2011		8/18/2011
ANALYTE		UG/M3		UG/M3
1,1 Dichloroethane	<	8.10	<	8.10
1,1 Dichloroethene	<	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	<	13.26	<	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.ButylMethylEther	<	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

CaRICH
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Appendix E

Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN

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

June 2012

Prepared for:

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

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803-1614

Quality Assurance Project Plan

1.1 Introduction - The following Quality Assurance Project Plan ("QAPP") has been prepared specifically for the Remedial Investigation Work Plan 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: ______________________ Date: 10/5/11
Steve Sobstyl, Senior Project Manager

Approved by: ______________________ Date: 10/5/11
Eric A. Weinstock, Vice President

1.2 QAPP - Table of Contents

The following elements are included in this QAPP:

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

- The investigation of a suspected buried leaching pool to determine if the pool has been impacted by volatile organic compounds (VOCs).

- Determination of the present-day groundwater quality conditions at the subject Site; and

- The investigation of the potential for soil vapor at the Site impacted with VOCs.

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

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.

Steve Sobstyl 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 Investigation Work Plan.

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 1995 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 Work Plan 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 Work Plan; the NYSDEC ASP analytical methods (1995) with NYSDEC ASP QA/QC requirements (1995); 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 Work Plan. 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 Work Plan. 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 Work Plan.

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**

Sample Matrix and Parameters	Container Type and Preservative	Method	Holding Time*
Groundwater			
VOCs	Two (2) - 40 Vial - ICE	USEPA 8260	14 Days
Soil			
VOCs	One (1) – 2 oz. glass jar - ICE	USEPA 8260	14 Days
Soil Vapor			
VOCs	One (1)-6-liter SUMMA Canister	TO-15	30 Days

*Holding Time is calculated from collection date

- **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 (1995) 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. Construction diagrams will be prepared for all monitoring wells and soil vapor probes installed by CA RICH.

- **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 Work Plan. 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 (1995) 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 Work Plan 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 (1995).

- **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 Work Plan. 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 Work Plan 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 (1995), 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.

Appendix F

CA RICH Professional Resumes

ERIC ANDREW WEINSTOCK, CPG, CGWP

- **TITLE**

  Vice President

- **EDUCATION**

  Master of Science, Engineering Geology, Georgia Tech, 1980
  Bachelor of Science, Geology, State University of New York at Oneonta, 1978

- **CERTIFICATIONS AND REGISTRATIONS**

  Certified Ground Water Professional, No. 278
  Certified Professional Geologist, No. 7391
  Health & Safety Operations at Hazardous Material Sites; 29 CRF 1910.120
  Registered Professional Geologist in Delaware (No.379), South Carolina (No. 544),
  and Pennsylvania (No. 925-G)

- **PROFESSIONAL AFFILIATIONS**

  National Ground Water Association
  American Institute of Professional Geologists

- **PROFESSIONAL EXPERIENCE**

  Vice President and Senior Hydrogeologist, CA Rich Consultants, Inc., 1988 - Present

  Mr. Weinstock serves as both a Project Manager and a Technical Supervisor. Since 1988, he has served as the Project Manager for numerous ground water, regulatory compliance, and real estate related projects.

  Eric's responsibilities at the Firm include: Management of the following Federal and/or State Superfund investigations and cleanups:

  - Tronic Plating Co., Farmingdale, NY
  - Tishcon Corporation, Westbury, NY
  - Stewart Hall Chemical Corp., Mt. Vernon, NY
  - Spring Creek Gardens, Brooklyn, NY
  - Munsey Cleaners, Port Washington, NY
  - Ranco Wiping Cloth, Freeport, NY
  - Jim Jam Cleaners, Merrick, NY
  - Utility Manufacturing Co., Westbury, NY
  - Coral Graphics Site, Hicksville, NY
  - Bon Ton Cleaners Site, Brooklyn, NY

Mr. Weinstock also serves as the firm's Technical Supervisor at the following NYSDEC oil spill investigations and cleanup projects:

- 875 5th Avenue, New York – Multi-phase extraction of subsurface No. 6 heating oil
- Best Metropolitan Towel & Linen Supply Co., Brooklyn, NY – Total fluids recovery of subsurface No. 6 heating oil.
- 669 Atlantic Avenue, Brooklyn, NY

Senior Hydrogeologist, Camp Dresser & McKee, NY, 1984 - 1988

Mr. Weinstock was the Project Geologist for the Port Washington Landfill RI/FS, a U. S. EPA Superfund site. He was in charge of a drilling program including 400 foot-deep monitoring wells and landfill gas wells. He assisted in the use of CDM's Dynflow/Dyntrack computer model to assess remedial alternatives.

Eric developed a simulation of the regional stratigraphy of Nassau County for NCDPW's regional groundwater model. This information, along with hydrologic data, is being used by the County in Dynflow/Dyntrack to model the effects of pumping.

At the Metaltec/Aerosystems U.S. EPA Superfund site in Franklin, N.J., Mr. Weinstock was in charge of a remedial investigation of a metals plating site. The project included monitoring well installation; soil, surface water and groundwater sampling; and aquifer pump testing. This information was used to assess remedial alternatives in the Feasibility Study.

Hydrogeologist, Leeds Hill & Jewett, San Francisco, CA, 1982 - 1984

Eric served as a field geologist for the drilling and installation of 1,000 gpm production water wells for a power plant in Nevada. His duties included supervision of drillers, interpretation of geophysical logs, inspection of well construction and pump testing.

Mr. Weinstock was in charge of a drilling and well installation program to determine the extent of a 50,000-gallon plume of jet fuel at this U.S. Navy Base in Southern California.

Hydrogeologist, Dames & Moore, San Francisco, CA, 1980 - 1982

Mr. Weinstock supervised the installation, sampling and testing of a RCRA monitoring well network at a Chevron refinery and chemical plant in Richmond, Calif. Duties included drilling supervision, geophysical logging, mapping, pump testing and sampling.

SELECTED PUBLICATIONS

Rao, S.G. and Weinstock, E.A., 1981, *"Numerical Modeling of Solute Transport in Groundwater; An Application to a Landfill Site in Florida."* Paper presented at the 17th Am. Water Resources Assoc., National Conference, October 4-8, 1981, Atlanta, Georgia.

Weinstock, Eric A., 1988, "*A Sensible Alternative for the Installation of Monitoring Wells*," Water Well Journal, December 1988.

Weinstock, Eric A., 1991, *"Phase II Environmental Assessments*, Water Well Journal," April 1991

Weinstock, Eric A., 1992, *"Cost-Effective Options for the Collection of Subsurface Soil, Soil Gas and Groundwater Samples,"* The National Environmental Journal, Nov/Dec 1992.

Weinstock, Eric A., 1996, *"Methods for the Collection of Subsurface Samples during Environmental Site Assessments"*, in Sampling Environmental Media, ASTM STP 1282.

Weinstock, Eric A., 2001, *"Dry Cleaners, Perchloroethene and Glacial Aquifers – Lessons Learned on Long Island, New York"*, The Professional Geologist, September/October, 2001

Weinstock, Eric A. and Sobstyl, Steven, 2003, "Comparison of Site Remediation Costs for Cleanups Performed Under Federal, State and County Oversight", NGWA Conference on Remediation: Site Closure and the Total Cost of Cleanup, November 13-14, 2003, New Orleans, LA.

Weinstock, Eric A., 2004, *"Dual-Treatment Approach to Perc Cleanup"*, Drycleaner News

Weinstock, Eric A. and Shapiro, Deborah, 2006, *Redeveloping "E-Sites" in New York City*, in The Real Estate Journal, January 3-9, 2006.

Weinstock, Eric A., Osmundsen, Steven, and Shapiro, Deborah, 2008, "Subsurface Evaluation Through Sub-Slab Depressurization, The Investigation and Remediation of a Dry Cleaning Facility in Brooklyn, NY", NGWA Conference on Eastern Regional Ground Water Issues, June 23-24, 2008, Ronkonkoma, NYH.

Weinstock, Eric A. *"Sub-Slab Depressurization – A Necessary Part of the Final Remedy"*, The Professional Geologist, November/December, 2008

- **SELECTED LECTURES**

Guest Hydrogeology lecturer, Manhattan College & Cooper Union, 1988.

Guest Hydrogeology lecturer, Adelphi University, 1991.

- **EXPERT TESTIMONY**

Commerce Holding Co. Inc. v. the Board of Assessors of the Town of Babylon
Suffolk County Supreme Court, 1991

State of New York v. AMN Oil Corp and Alvin Petroleum, et. al
New York State Court, 2006

STEVEN T. SOBSTYL

- **TITLE**

  Senior Project Manager / Environmental Scientist

- **EDUCATION**

  Bachelor of Arts, Environmental Science: Natural Resource Planning and Management, SUNY at Plattsburgh, 1988

- **CERTIFICATIONS AND REGISTRATIONS**

  Hazardous Waste Operations and Emergency Response-Supervisor OSHA Part 1910.120
  Health & Safety Operations at Hazardous Materials Sites 29 CFR 1910.120 New York

- **PROFESSIONAL EXPERIENCE**

  Senior Project Manager, CA Rich Consultants, Inc., 1988 - Present

  Mr. Sobstyl serves as a Sr. Project Manager for the Firm and has successfully performed Site Remedial Investigations at USEPA Superfund and NYS Class II Superfund sites. He has managed numerous Phase II Site Investigations and Phase III Site Remediations at both the State and County government levels of enforcement. Steve has successfully managed project activities at RCRA Groundwater Assessment Monitoring Programs in New Jersey and Connecticut, and at NJPDES-DGW Groundwater Detection Monitoring Compliance Programs in New Jersey.

  Mr. Sobstyl's expertise in managing and conducting all aspects of environmental investigation includes: monitoring well design/installation and sampling, hydro-punch®, groundwater recovery pump testing, soil vapor testing, UST removals, contaminated soil delineation, excavation and petroleum and hazardous waste disposal.

  Mr. Sobstyl has managed and conducted field activities for groundwater Remedial Investigations at several dry cleaners on Long Island. Steve has prepared Remedial Investigation Work Plans subject to Nassau County Health Department (NCDH) approvals. Remedial Investigations have included PCE plume delineation through groundwater monitoring well installation/design and subsequent sampling. Steve has assisted in the design and construction of groundwater remediation systems that include pump and treat, air sparging, ozone injection and vapor extraction systems associated with chlorinated solvent spills.

  In addition, Steve continues to conduct Phase I Environmental Site Assessments of commercial and industrial properties, as well as other non-industrial properties to facilitate real property transfers, loan workouts and refinances. The Phase I Environmental Site Assessment Reports are prepared for lending institutions and are used in assessing the environmental integrity and liability associated with the property.

Steve has managed and supervised the removal and closure activities of numerous underground storage tanks in connection with gasoline service stations, heating oil tanks, and industrial process tanks. He has a working knowledge of NYSDEC protocols for Spill notification, corrective action procedures, sampling methodology and preparation of Spill Closure reports for State approval.

Mr. Sobstyl manages the sampling program for seven (7) regulated units at the Bayway Refining Company, Linden, NJ in accordance with NJPDES-DGW Groundwater Detection Monitoring System RCRA permits and is responsible for Quarterly and Annual Summary Report submittals to NJDEP.

Mr. Sobstyl participated in the field activities for the Tronic Plating Co. Superfund RI/FS Site in Farmingdale, NY. The study included monitoring well installation, soil and groundwater sampling. Specific responsibilities included his EPA-approved services as: Site Health & Safety Officer and Quality Assurance Officer for all on-site activities.

Mr. Sobstyl supervised and conducted field investigation activities at Cavenham Forest Industries, Inc., Gulfport, MS. The Remedial Facilities Investigation (RFI) for corrective action included subsurface creosote resin plume delineation through off-shore drilling and sampling operations. The RFI was conducted in accordance with the facility's RCRA Pre-Closure Work Plan and Quality Assurance Project Plan.

Steve assisted in the Navy Clean Soil and Groundwater Sampling Plan at the Naval Auxiliary Landing Field (NALF), Fentress, Virginia. Site investigation and sampling was conducted at NALF Landfill Site and NALF Firefighting Training Area Site. This site investigation was conducted in accordance with all United States Navy Clean Project QA/QC Protocols.

- **PUBLICATIONS**

Sobstyl, Steven T., *"An Overview of Managing Asbestos In-Place,"* New York and New England Real Estate Journals, January 1992.

Weinstock, Eric A. and Sobstyl, Steven, 2003, "Comparison of Site Remediation Costs for Cleanups Performed Under Federal, State and County Oversight", NGWA Conference on Remediation: Site Closure and the Total Cost of Cleanup, November 13-14, 2003, New Orleans, LA.

MICHAEL T. YAGER

- **TITLE**

  Project Manager/Environmental Scientist

- **EDUCATION**

  Biology and Environmental Science SUNY Cortland, 1988

- **CERTIFICATIONS AND REGISTRATIONS**

  Hazardous Waste Operations and Emergency Response-Supervisor OSHA Part 1910.120
  Health & Safety Operations at Hazardous Materials Sites 29 CFR1910.120 (E) (2) - 40 hours
  NYS Department of Labor (NYSDOL) Asbestos Air Sampling Technician
  USEPA AHERA, NYSDOL Approved Asbestos Inspector

- **PROFESSIONAL EXPERIENCE**

  Project Manager/Environmental Scientist, CA Rich Consultants Inc., 1988 – Present

  As a Project Manager/Environmental Scientist for CA RICH, Mr. Yager conducts all aspects of the asbestos abatement industry including asbestos inspections for residential, commercial, and industrial properties; Large and small scale asbestos abatement supervision including third party air monitoring for asbestos fiber control. In addition, Mr. Yager conducts Phase I ESAs and all aspects of hazardous waste site investigations and remediation including hazardous waste characterization, consolidation and disposal; regulatory compliance - RCRA, CERCLA (Superfund), ECRA, AHERA, large and small quantity generator reporting; SARA Title III Community Right-to-Know Reporting, discharge permits for air and groundwater.

  Mr. Yager has also designed, implemented and supervised investigatory and/or remedial activities conducted on-site. Investigatory activities include: sub-surface soil sampling, soil vapor/gas sampling; installation, development and sampling of groundwater monitoring wells, Hydropunch groundwater sampling; air sampling and/or monitoring; etc., to determine and/or delineate the extent and degree of existing contamination at the site. Corrective actions include: asbestos abatement activities; underground storage tank removal or abandonment; excavation of contaminated soils and/or materials; consolidation and proper disposal of hazardous waste; etc., to remediate hazardous materials and/or on-site conditions.

JASON T. COOPER, B.S.

- **TITLE**

  Project Environmental Scientist

- **EDUCATION**

  Bachelor of Science, Geology, State University of New York at Buffalo, 1999

- **CERTIFICATIONS**

  40-hour OSHA Hazardous Waste Operations and Emergency Response Training (OSHA 29 CFR 1910.120)
  8-hour OSHA Hazardous Waste Operations and Emergency Response Refresher Training
  Standard First Aid Training - American Red Cross
  CPR Training – American Red Cross

- **PROFESSIONAL AFFILIATIONS**

  Long Island Association of Professional Geologists (LIAPG)

- **PROFESSIONAL EXPERIENCE**

  <u>Project Environmental Scientist, C A Rich Consultants, Inc., 2005 - Present</u>

  As a Project Environmental Scientist with CA RICH, Mr. Cooper's responsibilities include the conductance of Phase I and Phase II Environmental Site Assessments (ESAs). Jason's Phase I and Phase II ESA experience includes coordinating historical and regulatory database searches, conducting Property inspections, collecting soil, groundwater, and sediment samples and authoring Phase I and Phase II reports.

  Mr. Cooper has also assisted with the construction and start-up tests for an air sparge/soil vapor extraction (AS/SVE) system for the remediation of PCE contamination. In addition, he has conducted quarterly monitoring and troubleshooting for the AS/SVE system.

  Mr. Cooper also conducts annual property inspections for the highly successful Tenant Environmental Compliance Program, which helps to ensure that the tenants are not contaminating a landlord's properties. This Program now covers almost two million square feet of multi-tenanted buildings on Long Island, NY.

  <u>Geologist, Geologic Services Corporation, 2001 - 2005</u>

  As a Geologist with Geologic Services Corporation, Mr. Cooper's responsibilities included the authoring of quarterly monitoring reports, sub-surface investigation reports, and sensitive receptor survey reports. In addition he has conducted monitoring well installation oversight with logging and sampling, remediation system maintenance, well surveying, groundwater sampling, 24-hour pump tests, equipment maintenance and peer mentoring.

  Mr. Cooper developed and implemented a program for the management and oversight for the collection of over 1,000 groundwater samples for a retail gasoline station in Smithtown, New York. His duties included the training of personnel, management and QA/QC of samples, and meeting monthly deadlines. In addition, he conducted monthly mass flux calculations, MTBE vertical cross-section contour maps, vertical cross-section groundwater flow maps (flow nets), and aerial groundwater flow maps.

Jason has also assisted with the construction of a groundwater pump and treat remediation system and determined the most affective locations for the submersible pumps for maximum contamination recovery.

Jason has completed the ExxonMobil Loss Prevention Safety (LPS) program and participated in monthly Health and Safety meetings. Jason conducted health and safety oversight of drilling activities, tank cleanings and removals and soil removal. The LPS and health and safety programs were implemented in the field by Jason as a health and safety officer with zero incidences.

Field Technician, Environmental Assessment and Remediation (EAR) 2000 - 2001

As a field technician with EAR, Mr. Cooper's responsibilities included the construction of remediation systems, operations and maintenance along with troubleshooting of remediation systems, groundwater sampling, air sampling and well abandonment.

VICTORIA D. WHELAN, B.S.

- TITLE

  Project Hydrogeologist

- EDUCATION

  Bachelor of Science, Geology, State University of New York at Oswego, 2005

- CERTIFICATIONS

  40-hour OSHA Hazardous Waste Operations and Emergency Response Training (OSHA 29 CFR 1910.120)
  Standard First Aid Training - American Red Cross- Bohemia Fire Department
  CPR Training – American Red Cross -Bohemia Fire Department

- PROFESSIONAL EXPERIENCE

  Project Hydrogeologist, C A Rich Consultants, Inc., 2006 - Present

  As a Project Hydrogeologist with CA RICH, Ms. Whelan's responsibilities include the conductance of Phase I and Phase II Environmental Site Assessments (ESAs). Ms. Whelan has also conducted all aspects of environmental investigations including monitoring well design/installation, groundwater, indoor air, soil gas, subslab vapor, and soil sampling, UST removals, soil delineation, excavation, petroleum and hazardous waste disposal, analytical interpretation, groundwater contouring, and report preparation.

  Ms. Whelan conducts annual property inspections for the highly successful Tenant Environmental Compliance Program, which helps to ensure that the tenants are not contaminating a landlord's properties. This Program now covers almost two million square feet of multi-tenanted buildings on Long Island, NY.

  Project Hydrogeologist, Walden Associates, P.L.L.C. 2005 - 2006

  As a Hydrogeologist with Walden Associates, Ms. Whelan's responsibilities included the quarterly monitoring report write ups, sub-surface investigation reports, monitoring well installation oversight with logging and sampling, remediation system maintenance, well surveying, groundwater sampling, and free product recovery.

  Ms. Whelan assisted with the start-up tests and monitoring for an air sparge/soil vapor extraction (AS/SVE) system for the remediation of PCE contamination on a Federal Superfund site.

- PROFESSIONAL AFFILIATIONS

  Long Island Association of Professional Geologists (LIAPG)
  National Ground Water Association, member
  Sigma Xi, member

- **PUBLICATIONS**

  Andrews, J., and **Whelan, V.,** Department of Earth Sciences, State University Of New York at Oswego NY 13126, Ordovician Carbonates in Northwest Lewis and parts of Southeastern Jefferson counties, New York Northeastern Section and Southeastern Section joint Meeting

- **FIELD RESEARCH FOR PAPER CONTRIBUTIONS**

  Bauer, M., Valentino, D., Chiarenzelli, J., Solar, G., Department of Earth Sciences, State University of New York at Oswego, NY 13126, Metamorphic Petrology and Unit Distribution in The Oliver hill Dome, Eastern Adirondack Mountains, New York, Northeastern Section and Southeastern Section joint Meeting

  Smith, N., Valentino, D., Chiarenzelli, J., Solar, G., Department of Earth Sciences, State University of New York at Oswego, NY 13126, Distribution of L- and L-S Tectonite in the Oliver Hill Dome, Eastern Adirondack Mountains, New York, Northeastern Section and Southeastern Section joint Meeting

  Stilwell, S., Garwron, J., Andrews, J., Bauer, M., Crocetti, A., Meneilly, N., Piaschyk, D., Smith, N., and **Whelan, V.,** Earth Sciences, SUNY Oswego, Oswego, NY 13126, Fracture analysis along the southern shore of Lake Ontario in the Oswego Formation, Oswego County, New York, Northeastern Section and Southeastern Section joint Meeting

JESSICA E. PROSCIA, B.S.

- TITLE

  Project Environmental Scientist

- EDUCATION

  Bachelor of Science, Health Science, Environmental Health and Safety, State University of New York at Stony Brook, 2007

- CERTIFICATIONS

  40-hour OSHA Hazardous Waste Operations and Emergency Response Training (OSHA 29 CFR 1910.120)
  8-hour OSHA Hazardous Waste Operations and Emergency Response Refresher Training
  Standard First Aid Training - American Red Cross
  CPR Training – American Red Cross

- PROFESSIONAL EXPERIENCE

  Project Environmental Scientist, C A Rich Consultants, Inc., Oct. 2008 – Present

  As a Project Environmental Scientist with CA RICH, Ms. Proscia's responsibilities include the conductance of Phase I and Phase II Environmental Site Assessments (ESAs). Ms. Proscia has also conducted all aspects of environmental investigations including UST removals, supervision of drilling and well installation, sanitary system or dry well clean-outs, groundwater, and soil sampling, soil delineation, excavation, petroleum and hazardous waste disposal, analytical interpretation, groundwater contouring, and report preparation.

  Environmental Scientist/Health and Safety Officer, Hydro Tech Environmental, Corp., 2007 - 2008

  As an Environmental Scientist with Hydro Tech Environmental, Ms. Proscia's responsibilities included Phase I ESA's through Subsurface Investigations. Ms. Proscia was also involved in site supervision on several properties in New York State.

  Ms. Proscia performed on site safety inspections for the company's field crew as well as trained staff for the OSHA 40-hour and 8-hour refresher course.

- PROFESSIONAL AFFILIATIONS

  Long Island Association of Professional Geologists (LIAPG)

Appendix G

Health and Safety Plan
&
Community Air Monitoring Plan

HEALTH AND SAFETY PLAN
&
COMMUNITY AIR MONITORING PLAN
FOR THE
REMEDIAL INVESTIGATION WORK PLAN
AT

Elks Plaza, LLC.
157-189 West Merrick Road, Freeport, N.Y.
NYSDEC Site No.: 1-30-193

1.0 INTRODUCTION

This Health and Safety Plan ("HASP") and Community Air Monitoring plan ("CAMP") has been developed for utilization during implementation of the Remedial Investigation at the above referenced site located in Freeport, New York (the Site). The HASP and CAMP is to be enforced by CA RICH's Project Health and Safety Manager and the on-site Health & Safety Coordinator (HSC) or his/her designee. The on-site HSC will interface with the Project Manager and is vested with the authority to make field decisions including the termination of on-site activities if an imminent health and safety hazard, condition or related concern arises. Information and protocol in the HASP is applicable to all on-site personnel who will be entering the designated work zone.

2.0 POTENTIAL HAZARDS

2.1 Chemical Hazards

CA RICH will operate as if there is a potential hazard from the volatile organic compound (VOC) associated with the dry cleaning chemical perchloroethylene (PCE).

PCE can be described as "sweet" or "aromatic" smelling and are narcotic in high concentrations. Acute exposure to significant concentrations of these chemicals can cause irritation of the skin, eyes and mucus membrane, headache, dizziness, nausea, and in high enough concentrations, loss of consciousness and death *(Sax, 1984)*. These compounds are suspected to be carcinogenic with chronic exposure.

Physical properties and additional toxicological information is included in Appendix A.

2.2 Other Health and Safety Risks

The HASP addresses the environmentally-related chemical hazards identified on the Site. Normal physical hazards associated with using excavation and injection equipment and hand tools as well as hazards associated with adverse climatic conditions (heat & cold) also exist and represent a certain degree of risk to be assumed by on-Site personnel.

Certain provisions in this Plan, specifically the use of personnel protective equipment, may tend to increase the risk of physical injury, as well as susceptibility to cold or heat stress. This is primarily due to restrictions in dexterity, hearing, sight, and normal body heat transfer inherent in the use of protective gear.

3.0 RISK MANAGEMENT

3.1 Work / Exclusion Zones

For each proposed investigation activity (eg. monitoring well and soil vapor probe point installations, and soil sampling), a work / exclusion zone will be established. Access to this area will be limited to properly trained, properly protected personnel directly involved with investigation. Enforcement of the work / exclusion zone boundaries is the responsibility of the on-site Health & Safety Coordinator.

3.2 Personnel Protection

Health & Safety regulatory personnel have developed different levels of personnel protection to deal with differing degrees of potential risks of exposure to chemical constituents. The levels are designated as **A, B, C,** and **D** and are ranked according to the amount of personnel protection afforded by each level. Level **A** is the highest level of protection and Level **D** is the lowest level of protection as described below.

> **A** – Fully encapsulating suit, SCBA, hard hat, chemical-resistant steel-toed boots, boot covers, inner and outer gloves.
>
> **B** – One-piece, hooded chemical-resistant splash suit, SCBA, hard hat, chemical-resistant steel-toed boots, boot covers, inner and outer gloves.
>
> **C** – One-piece, hooded chemical-resistant splash suit, hard hat, canister equipped face mask, chemical-resistant steel-toed boots, boot covers, inner and outer gloves.
>
> **D** – Work clothes, hard hat (optional), work boots/shoes, gloves (as needed).

The different levels are primarily dependent upon the degree of respiratory protection necessary, in conjunction with appropriate protective clothing. Levels of protection mandate a degree of respiratory protection. However, flexibility exists within the lower levels (B, C, and D) concerning proper protective clothing.

The four levels of protection were developed for utilization in situations which involve suspected or known atmospheric and/or environmental hazards including airborne contamination and skin-affecting substances.

It is anticipated that all of the remedial work will be performed using Level D protection (no respiratory protection with protective clothing requirements limited to shirts, long pants or coveralls, work gloves and work boots).

Level D may be modified by the HSC to include protective clothing or equipment (Saran-coated disposable coveralls or PVC splash suits, safety glasses, hard hat with face shield, and chemically resistant boots) based upon physical hazards, skin contact concerns, and real-time monitoring.

Real-time air monitoring for total airborne organics using either a PID or an HNU will determine if and when an upgrade from Level D to a higher level of respiratory protection is warranted. Decisions for an upgrade from Level D to higher levels of protection, mitigative actions, and/or suspension of work are the responsibility of the Project Manager and/or the designated on-Site HSC.

3.3 Air Monitoring

The HSC or his properly trained assignee will conduct "Real Time" air monitoring for total organic vapor and total particulates. 'Real-time' monitoring refers to the utilization of instrumentation, which yields immediate measurements. The utilization of real time monitoring helps determine immediate or long-term risks to on-site personnel and the general public, the appropriate level of personnel respiratory protection necessary, and actions to mitigate the recognized hazard. Air monitoring will be conducted in accordance with NYSDOH's Community Air Monitoring Program.

3.3.1. Particulate Monitoring

a. Instrumentation

Dust particulates in air will be monitored using a light scattering technique MINIRAM Model PDM-3 Miniature Real-time Aerosol Monitor (MINIRAM) or equivalent. The MINIRAM is capable of measuring airborne dust particles within the range of 10 to 100,000 micrograms per cubic meter ($\mu g/m^3$).

b. Application

Dust monitoring will occur at regular intervals during excavation work activities. Monitoring will be conducted in upgradient and downgradient locations, relative to prevailing wind direction) along the perimeter of the work zone. The HSC or his designee will perform monitoring. As outlined in the NYSDOH Community Air Monitoring Plan, if particluate levels in the downwind location are 150 mg/m^3 greater than those measured in the upwind location, dust suppression techniques shall be employed.

3.3.2 Organic Vapor

a. Instrumentation

Real-time monitoring for total organic vapor (TOV) utilizes either a photo-ionization detector (PID) or flame ionization detector (FID). The appropriate PID is an intrinsically safe HNU Systems Model PI-101 (HNU) or MiniRae™ or equivalent, which is factory calibrated to benzene. The appropriate FID is a Foxboro model 128 Organic vapor Analyzer (OVA) or equivalent, which is factory calibrated to methane.

b. Application

Organic vapor monitoring is performed as outlined in the NYSDOH Community Air Monitoring Plan. Specifically, monitoring shall be conducted at the downwind perimeter of the work zone periodically during work activities. If TOV levels exceed 5 parts per million (ppm) above established pre-work background levels, work activities will be halted and monitoring will be continued under the provision of a Vapor Emission Response Plan (as outlined in the Community Air Monitoring Plan).

3.4 Worker Training

Personnel overseeing the excavation of the contaminated soil and/or other activities will be trained, fit-tested, and medically certified (OSHA 29 CFR 1910. 134). This includes the HSC or his/her properly trained assignee.

Prior to any work, all workers involved with the project should be aware of the potential chemical, physical and biological hazards discussed in this document, as well as the general safety practices outlined below. A safety briefing by the on-Site HSC and/or designee shall take place at the outset of work activities.

The HSC will be available to address project-related health & safety issues a site worker (such as an equipment operator or laborer) may have regarding the Site conditions. Once an issue is brought to the HSC's attention, he or she will evaluate the issue and apply the procedures outlined in this HASP.

3.5 General Safety Practices

All project personnel shall adhere to the following safety practices:

1. Avoid unnecessary skin exposure to subsurface materials. Shirts tucked into long pants (or coveralls), work gloves, and work boots are required unless modified gear is approved by the HSC. Remove any excess residual soil from clothes prior to leaving the site.

2. No eating, drinking, gum or tobacco chewing, or smoking allowed in designated work areas. Thoroughly wash hands prior to these activities outside the work area. Avoid sitting on the ground during breaks or while eating and drinking. Thoroughly wash all exposed body areas at the end of the workday.

3. Some symptoms of acute exposure include: nausea, dizziness, light-headedness, impaired coordination, headache, blurred vision, and nose/throat/eye irritation. If these symptoms are experienced or strong odor is detected, leave the work area and immediately report the incident to the on-site HSC.

3.6 Enforcement

Enforcement of the Site Safety Plan will be the responsibility of the HSC or his/her designee. The Coordinator should be on-site on a full-time basis and perform or directly oversee all aspects of Project Health & Safety operations including: air monitoring; environmental mitigation; personnel respiratory and skin protection; general safety practices; documentation; emergency procedures and protocol; and reporting and recordkeeping as described below.

3.7 Reporting and Recordkeeping

Incidents involving injury, symptoms of exposure, discovery of contained (potentially hazardous) materials, or unsafe work practices and/or conditions should be immediately reported to the HSC.

A log book must be maintained on-Site to document all aspects of HASP enforcement. The log is paginated and dated with entries made on a daily basis in waterproof ink, initialed by the HSC or designee. Log entries should include date and time of instrument monitoring, instrument type, measurement method, test results, calibration and maintenance information, as well as appropriate mitigative actions responding to detections. Miscellaneous information to be logged may include weather conditions, reported complaints or symptoms, regulatory inspections, and reasons to upgrade personnel protection above the normal specification (Level D).

4.0 EMERGENCIES

4.1 EMERGENCY RESPONSE SERVICES

(1)	**HOSPITAL** South Nassau Community Hospital 2277 Grand Avenue, Baldwin, NY 11510 (See Figure 1 for Map Route)	**(516) 377-5000**
(2)	**AMBULANCE**	**911**
(3)	**FIRE DEPARTMENT** **HAZARDOUS MATERIAL**	**911**
(4)	**POLICE DEPARTMENT**	**911**
(5)	**POISON CONTROL CENTER**	**(800) 222-1222**

The preceding list and associated attached map (Figure 1) illustrating the fastest route to the nearest hospital must be conspicuously posted in areas of worker congregation and adjacent to all on-site telephones (if any).

4.2 EMERGENCY PROCEDURES

4.2.1 Contact or Exposure to Suspected Hazardous Materials

In the event of a fire, chemical discharge, medical emergency, workers are instructed to immediately notify the HSC and proper emergency services (posted). Should physical contact with unknown or questionable materials occur, immediately wash the affected body areas with clean water and notify the HSC. Anyone experiencing symptoms of exposure should exit the work area, notify the HSC, and seek medical attention.

4.2.2 Personnel Decontamination, First Aid, and Fire Protection

The first step in the treatment of skin exposure to most chemicals is to rinse the affected area with water. For this reason, adequate amounts of potable water and soap are maintained on-Site in a clearly designated and readily-accessible location. Portable emergency eyewash stations and a first aid kit must be made available and maintained in the same locations as the potable water. Fire extinguishers are also to be maintained on-Site in designated locations. All on-Site personnel are to be made aware of the locations of the above-mentioned on-Site Health & Safety accommodations during the initial Health and Safety briefing.

4.2.3 Ingress/egress

Clear paths of ingress/egress to work zones and Site entrances/exits must be maintained at all times. Unauthorized personnel are restricted from accessing the site.

5.0 COMMUNITY AIR MONITORING PLAN

Real-time air monitoring for volatile compounds and particulate levels at the perimeter of the work area is necessary. This plan includes the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the work area on a continuous basis. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

- Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations during excavation activities. If the downwind particulate level is 150 $\mu g/m^3$ greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

5.1 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

5.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if organic vapor levels are approaching 5 ppm above background for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

5.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the HASP will go into effect.
2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.
3. Frequent air monitoring will be conducted at 30 minutes intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

6.0 HEALTH AND SAFETY PLAN REFERENCES

1. American Conference Governmental Industrial Hygienists, 1989; Threshold Limit Values And Biological Exposure Indices.
2. Geoenvironmental Consultants, Inc., 1987; Safety & Operations At Hazardous Materials Sites.
3. US Department Of Health And Human Services, Centers For Disease Control, 1985; NIOSH Guide To Chemical Hazards.
4. US Department Of Labor Occupational Safety & Health Administration, 1989; Hazardous Waste Operations And Emergency Response Interim Final Rule, 29 CFR Part 1910.
5. Sax, N. I., 1984; Dangerous Properties Of Industrial Materials.

7.0 KEY PERSONNEL

Responsibility	Name and Phone Number	Task Description
Project Manager	Eric Weinstock (516) 576-8844	Oversee and coordinate all technical aspects for the project
Site Safety Officer	Jason Cooper (516) 576-8844	Coordinate and inspect all health and safety operations from the project site

Client Representative Lois Reisman, Galaxy Management, Inc (631) 462-8621

Project Manager Alternate Steve Sobstyl (516) 576-8844

Site Safety Officer Alternate Mike Yager (516) 576-8844

Figure 1

Hospital Route Map

Google

Directions to South Nassau Commmunity Hospital
2277 Grand Avenue, Baldwin, NY 11510 - (516) 377-5000
1.6 mi – about **4 mins**

W Merrick Rd

1.	Head **west** on **W Merrick Rd** toward **S Long Beach Ave** About 3 mins	go 1.3 mi total 1.3 mi
2.	Turn right toward **Grand Ave**	go 105 ft total 1.3 mi
3.	Turn right onto **Grand Ave** Destination will be on the right About 1 min	go 0.3 mi total 1.6 mi

South Nassau Commmunity Hospital
2277 Grand Avenue, Baldwin, NY 11510 - (516) 377-5000

These directions are for planning purposes only. You may find that construction projects, traffic, w eather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Directions w eren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

September 2005

NIOSH Pocket Guide to Chemical Hazards

NPG Home | Introduction | Synonyms & Trade Names | Chemical Names | CAS Numbers | RTECS Numbers | Appendices | Search

Tetrachloroethylene

CAS 127-18-4

$Cl_2C=CCl_2$

RTECS KX3850000

Synonyms & Trade Names
Perchlorethylene, Perchloroethylene, Perk, Tetrachlorethylene

DOT ID & Guide
1897 160

Exposure Limits	NIOSH REL: Ca Minimize workplace exposure concentrations. See Appendix A
	OSHA PEL†: †: TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm
IDLH Ca [150 ppm] See: 127184	**Conversion** 1 ppm = 6.78 mg/m^3

Physical Description
Colorless liquid with a mild, chloroform-like odor.

MW: 165.8	BP: 250°F	FRZ: -2°F	Sol: 0.02%
VP: 14 mmHg	IP: 9.32 eV		Sp.Gr: 1.62
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene.

Incompatibilities & Reactivities
Strong oxidizers; chemically-active metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash

Measurement Methods
NIOSH 1003; OSHA 1001
See: NMAM or OSHA Methods

Personal Protection & Sanitation (See protection codes)
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation
Provide: Eyewash, Quick drench

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus
Important additional information about respirator selection

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, liver, kidneys, central nervous system

Cancer Site [in animals: liver tumors]

See also: INTRODUCTION See ICSC CARD: 0076 See MEDICAL TESTS: 0179