Pilot Test Report
and
Interim Remedial Measures Work Plan
Elks Plaza, LLC
157-189 West Merrick Road
Freeport, NY
NYSDEC Site No.: 130193

January 2012

Prepared for:

Elks Plaza, LLC
c/o Galaxy Management, Inc.
28 Campbell Drive
Dix Hills, NY 11746-7902

Prepared by:

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January 10, 2012

NYSDEC
Division of Hazardous Waste Remediation
625 Broadway
Albany, New York 12207-2942

Attention: Melissa Sweet, Project Manager

Re: **Pilot Test Report and Interim Remedial Measures Work Plan**
Elks Plaza, LLC
157-189 West Merrick Road
Freeport, NY
NYSDEC Site No.: 130193

Dear Ms. Sweet:

CA RICH Consultants, Inc. (CA RICH) is pleased to present this Pilot Test Report and Interim Remedial Measures Work Plan for Elks Plaza, LLC at 157-189 West Merrick Road Freeport, NY.

Introduction

The property has been the subject of a series of investigations that have included testing and analysis of the groundwater, soil, soil vapor and indoor air at the property. The results of these investigations are summarized in the following documents (Refs. 1 and 2).

- Site Characterization Report, Elks Plaza LLC March 2010
- Supplemental Soil Vapor Investigation, Elks Plaza LLC June 2010

Based on the results of those investigations elevated levels of perchloroethene (PCE) were identified below the units 179A and 181. Unit 181 was the former location of a dry cleaning tenant. The focus of this work was to perform a pilot test within units 179A, 181 and 181A, the space currently occupied by a Laundromat. This work was performed in accordance with our Revised Pilot Test Work Plan and Work Plan Addendum #1 (Refs. 3 and 4). An initial test boring was performed to delineate the vertical extent of PCE below a former dry cleaning machine that existed in unit 181. The results of the test boring and the pilot test were, in turn, used to design a venting system to address the sub-slab soil vapor issues identified in the earlier investigations.

Summary of Field Activities

1) Test Boring

One soil boring, identified as EP-01, was installed on June 15, 2011 in the area of the former dry cleaning machine using a Geoprobe sampling device. The purpose of this boring was to characterize the soil quality from the ground surface to the water table in the area of the former

dry cleaning machine. A shallow boring, identified as boring SB-4, was installed in this same area as part of the March 2010 Site Characterization Report. One soil sample was collected from boring SB-4 at 3 to 4 feet below grade. Sample SB-4 (3-4 FT BG) contained Perchloroethene (PCE) at a concentration of 26 ug/kg. The locations of these borings are illustrated on Figure 1.

Soil samples were collected continuously in boring EP-01 from the ground surface to the water table, which was encountered at a depth of 13 feet. A boring log is attached to this report. Cores from 1 to 5 feet, 5 to 9 feet, 9 to 13 feet and 13 to 17 feet were examined and screened with a Photo-Ionization Detector (PID). None of the soil cores displayed elevated detections on the PID meter. Soil samples were collected from the following depths: 1 to 2 feet; 7 to 8 feet; 12 to 13 feet; and 13 to 15 feet. The 13 to 15 foot sample was collected from below the water table.

Summary of Results - The results of the soil sample analyses are presented on Table 1. PCE was detected in the 1 to 2 foot deep sample at a concentration of 21.6 ug/kg. No other Volatile Organic Compounds (VOCs) were detected in this sample. This concentration is similar to the level of detection found in the 3 to 4 foot deep sample from boring SB-04. The PCE concentration in that sample was 26 ug/kg. There were no detections of PCE or any other VOCs in the samples collected from 7 to 8 feet; 12 to 13 feet; and 13 to 15 feet.

The PCE detection of 21.6 ug/kg in the shallow soil sample from boring EP-01 is significantly lower than the 6NYCRR Part 375 soil cleanup objective (Ref. 5) of 1,300 ug/kg for “unrestricted use” or “protection of groundwater”. The 6NYCRR Part 375 soil cleanup objective for “commercial use” is 150,000 ug/kg.

The results indicate that there was a low level release of PCE to the shallow soils below the former dry cleaning machine. As demonstrated by the results from the 7 to 8 foot, 12 to 13 foot, and 13 to 15 foot samples, the PCE has not migrated to the deeper soils below the Laundromat.

2) Installation of the Sub-Slab Venting System

Based on the test boring results, the sub-slab venting system design was focused to address the shallow soils below the Laundromat floor. As shown on Figure 2, the vents extend approximately one foot below the bottom of the concrete slab floor. The locations of the four vents are displayed on Figure 3.

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

3) Performance of the Pilot Test

On August 18, 2011, a pilot test of two of the four newly installed vents was performed. The test was conducted using two different Fantech™ vapor abatement fans (a model HP2109 and model HP220) and a portable, 3-horsepower, Rotron™ regenerative blower with a variable frequency drive to control the discharge rate. Each flow rate tested was performed for at least 20 minutes. The weather conditions during the test were cloudy and humid. Vacuum monitoring points were installed at five locations as shown on Figure 3 by drilling a 5/16th-inch diameter hole in the floor and inserting a rubber stopper equipped with a barbed fitting in the hole and sealing it with bee’s wax. A set of static vacuum readings were recorded using an Infiltec model DM1 Digital Micro-Manometer and are included on Table 2.

South West Vent

The south west vent was tested first. The vent was tested at three different rates. The first test was run using a four-inch diameter Fantec model HP2109 fan. This was followed by a second

test conducted using six-inch diameter Fantec model HP220 fan. The final test was run using the regenerative blower. The vacuum created at the test vent was recorded for each test. The regenerative blower, which was equipped with a Pitot tube, was used to calculate the flow rates for each test.

Test #	Vacuum at Vent in Inches of H_20	Flow Rate in CFM
Test 1	1.8	12.4
Test 2	2.2	15.9
Test 3	4.1	30

A summary of the vacuum created below the sub slab during the test is included on Table 3 and is illustrated on Figures 4A to 4C. The field measurements indicated that a radius of vacuum of at least 55 feet was created during all three of the tests run on the south west vent. One of the vacuum monitoring points (point #4) was non-responsive during the test and probably did not tap porous material below the slab. Photo-Ionization Detector (PID) readings were measured at the beginning and end of each step of the test and are recorded on the Figures 4A, B & C and 5A, B & C. In addition, a sample was collected using a SUMMA canister 13 minutes after the beginning of the first test and at a flow rate of 12.4 Cubic Feet per Minute (CFM). Identified as sample number EP-SW-Grab, this sample had a PCE concentration of 94,990 ug/m^3. The laboratory data is summarized on Table 5 of this report.

North East Vent

The north east vent was tested on the same day. The vent was tested at three different rates using the regenerative blower. The vacuum created at the test vent was recorded for each test. A Pitot tube, was used to calculate the flow rates for each test.

Test #	Vacuum at Vent in Inches of H_20	Flow Rate in CFM
Test 1	1.798	9.6
Test 2	2.298	11
Test 3	3.998	12.4

A summary of the vacuum created below the sub slab during the test is included on Table 4 and is illustrated on Figures 5A to 5C. The field measurements indicated that a radius of vacuum of at least 48 feet was created during all three of the tests run on the north east vent. Photo-Ionization Detector (PID) readings were measured at the beginning and end of each step of the test. In addition, a sample was collected using a SUMMA canister and the end of the third test. The sample was collected at a flow rate of 12.4 CFM. Identified as sample number EP-NE-Grab, this sample had a PCE concentration of 210,335 ug/m^3. The sample results are summarized on Table 5.

4) Venting System Design

Based on the results of the pilot test and the evaluation of the emissions data, we recommend that the four vents installed for the pilot test be converted into permanent sub-slab depressurization vents. Four-inch diameter sheet metal ducts will be extended and connected above the existing Laundromat. These will, in turn, be connected to a six-inch diameter riser. Initially, the six-inch diameter riser will transition to two-inch diameter PVC pipe which will extend along the roof to the stair well at unit 175 as shown on Figure 6. The two-inch pipe will extend down through the roof and into the stair well. It will be connected to a moisture knock drum and then to a Fuji Model VFC40 1 HP regenerative blower. The extracted soil vapor will then pass

through two 55-gallon vapor phase carbon units. The treated vapor will then be connected to a two-inch pipe that will extend through the roof of the stair well for a height of six feet above the roof. The blower will be connected to the electric panel of the shopping center.

The system will draw equal vacuum from each vent. Based on the pilot test, we estimate that the Fuji Model VFC40 will create a vacuum of approximately 10 inches of water and would discharge approximately 70 to 80 CFM from the four vents. This is only an approximation, the actual vacuum and flow rate will be measured during system startup. The blower will create a radius of vacuum of at least 50 feet from each vent and will ensure that negative pressure is maintain across the space formerly occupied by the dry cleaner. A magnehelic-type vacuum gauge equipped with a red LED low-vacuum indicator light will be installed on the vertical riser closest to the office of the Laundromat. The LED light will be connected to the power supply of the shopping center. The tenant will be instructed to call CA Rich for service if the red indicator light is illuminated. A drawing illustrating the proposed design is included as Figure 6. Literature for the blower and the vacuum gauge is included in Appendix C.

5) Evaluation of Emissions

The pilot test measurements, laboratory data and proposed venting design were evaluated using the NYSDEC's DAR-1 (Air Guide 1): Guidelines for the Control of Toxic Ambient Air Contaminants. Calculations were performed using the proposed design flow of 50 CFM and the maximum concentration of 210,335 ug/m^3 from the SUMMA Canister results. The calculated exposures exceeded the NYSDEC and NYSDOH guidelines and, as such, carbon treatment is proposed for this project.

This data was evaluated using the worst case "short stack" dispersion from a Sub-Slab Depressurization (SSD) vent located on the roof of the Laundromat. The Annual Cavity Impact (C_C) and Short-Term Cavity Impact (C_{CST}) were calculated. The results for PCE are:

C_C = 2.3 ug/m^3 vs Annual Guideline Concentration (AGC) of 1 ug/m^3

C_{CST} = 15 ug/m^3 vs Short-term Guideline Concentration (SGC) of 1.0 X10^3 ug/m^3

The calculated C_C exceeds the standard, therefore treatment of the exhaust will be required when the system is initially turned on. A calculation sheet is included as Appendix D of this Plan.

6) Venting System Start Up

Once the system is installed, a start up test will be performed. Holes will be drilled into the floors of units 177, 177A, 179A and 183A. Using a barbed fitting sealed into the floor, the vacuum at each of these units will be measured using a digital monometer. The results of the start up test will be included in an IRM Report.

7) Operations, Maintenance and Monitoring for the Venting System

The site will be visited monthly for the first three months and then quarterly thereafter. During each visit, the moisture knockout drum will be drained and a PID will be used to check the VOCs before the carbon units, between the two carbon units and after the carbon units. SUMMA canisters will be used to collect samples of the untreated and treated soil vapor for laboratory analysis on a quarterly basis. These results will be submitted to the NYSDEC in quarterly letter reports. The blower does not require any periodic maintenance. Literature for the Fuji blower is included as Appendix C.

The Annual Cavity Impact (Cc) will be recalculated after each round of quarterly monitoring round and compared to the AGC standard. Once the untreated soil vapor is less than the AGC standard, we will petition the NYSDEC to turn off the Fuji Blower and replace it with a Fantech model HP220. The two-inch diameter PVC pipe will be removed and the Fantech fan will be connected directly to the six-inch riser set above the roof. Assuming an average flow rate of 12.5 CFM per vent, this would create approximately 50 CFM from the four vents. At a vacuum of approximately 1.8 inches of water, this will create a radius of vacuum of at least 50 feet from each vent and will ensure that negative pressure is maintained across the space formerly occupied by the dry cleaner. The Fantech literature is also included as Appendix C.

There are no periodic maintenance procedures required for the Fantech SSD fan based on the manufacturer's literature. The motor is sealed and does not require lubrication. There are no filters that have to be changed. The fan should be inspected on an annual basis to confirm that it is working properly. The vacuum gauge on the exhaust stack should be checked to confirm that the vacuum within the vent lines has not changed. If the fan malfunctions, it should be replaced.

If you have any questions regarding this plan, please do not hesitate to call our office.

Respectfully,

CA RICH CONSULTANTS, INC.

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References

1. Preferred Environmental Services March 2010, Site Characterization Report, Elks Plaza LLC - Site # 130193, 157 -189 West Merrick Road, Freeport, NY.

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

3. CA RICH, April 2011, Revised Pilot Test Work Plan, Elks Plaza, LLC, 157-189 West Merrick Road, Freeport, NY.

4. CA RICH, May 2011, Revised Pilot Test Work Plan Addendum Number 1, Elks Plaza, LLC, 157-189 West Merrick Road, Freeport, NY.

5. NYSDEC, 6NYCRR Part 375, Environmental Remediation Programs.

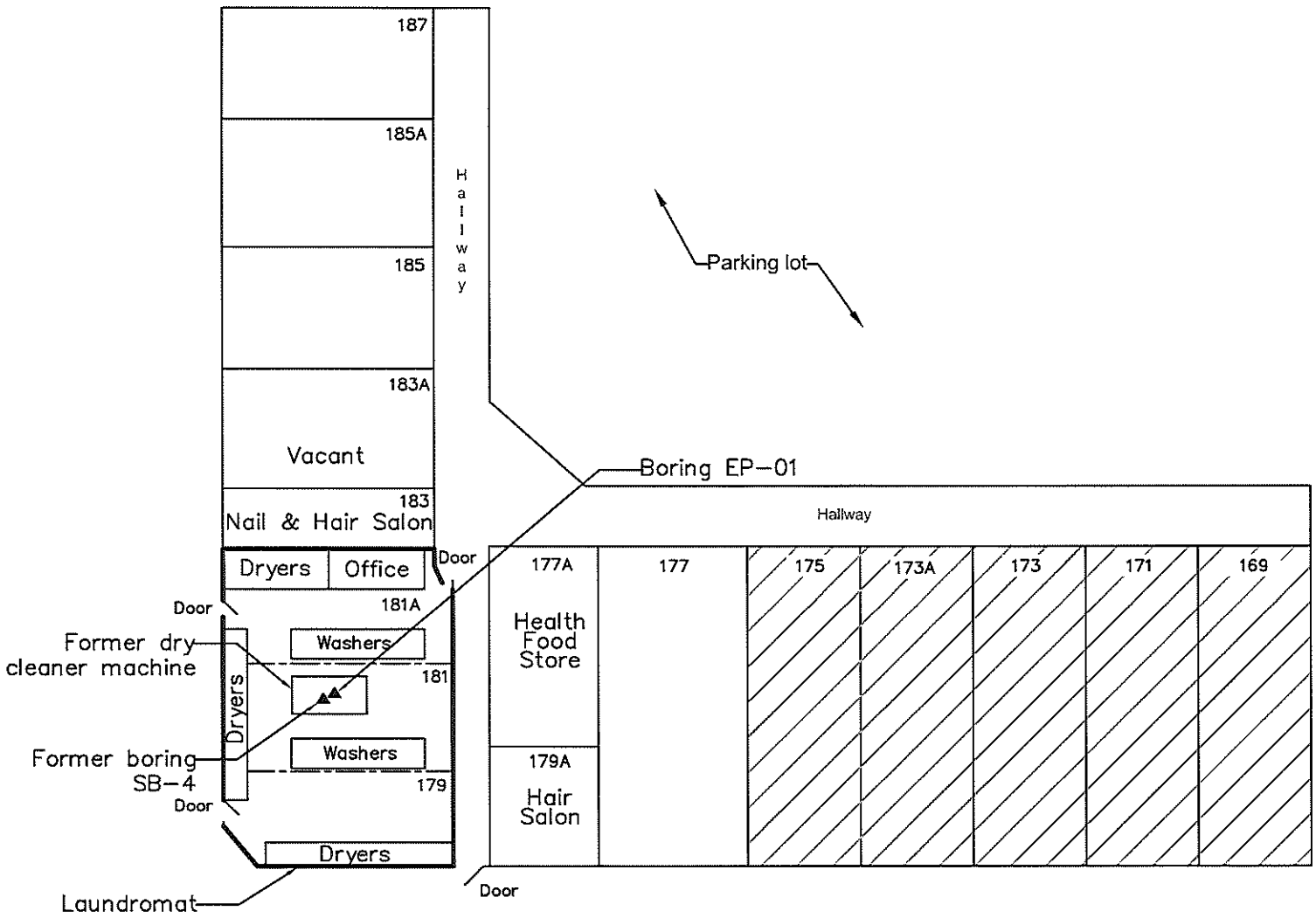
6. NYSDEC, DAR-1: Guidelines for the Control of Toxic Ambient Air Contaminants.

Figures

Tables

Appendices

FIGURES



LEGEND

▲ Boring location

Units have basement, basement unit is # 165

0 20 40 60

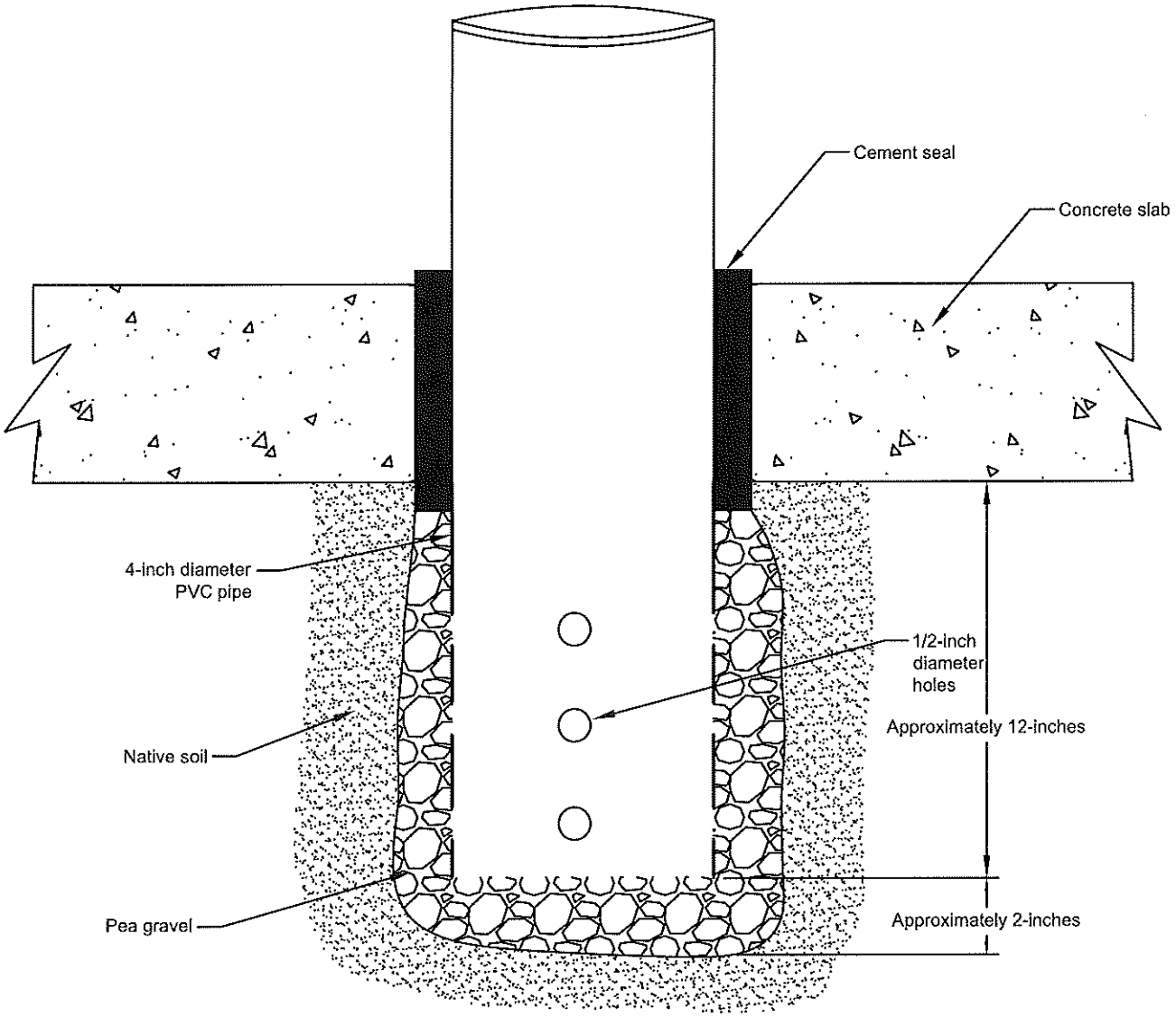
Graphic Scale in Feet

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	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York
DRAWING NO: 2011-M3C	DRAWN BY: J.T.C.
	APPR. BY: E.A.W.



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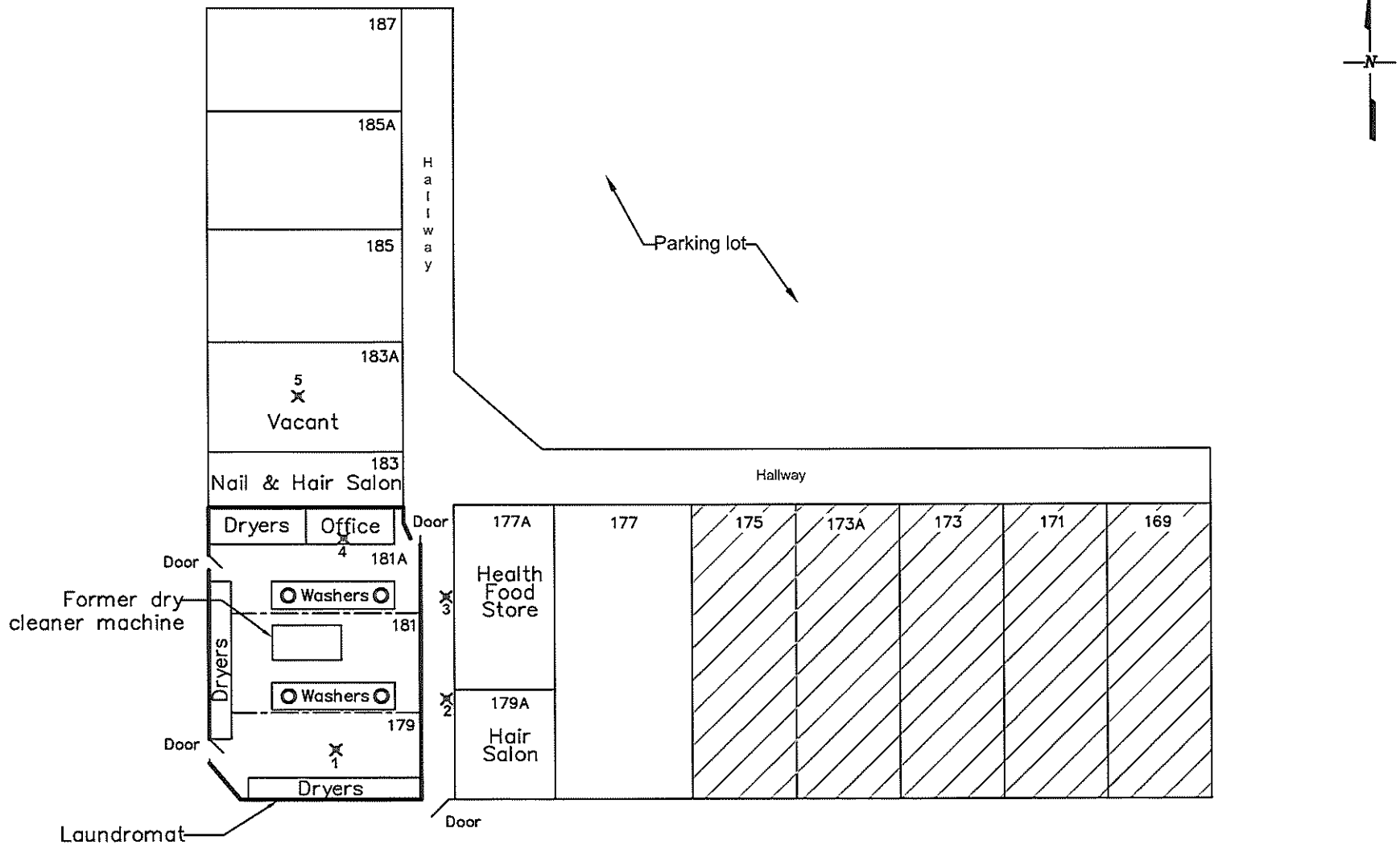
17 Dupont Street, Plainview, New York 11803

TITLE: Typical Soil Vapor Vent		DATE: 9/22/2011
		SCALE: N.T.S.
FIGURE: 2	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York	DRAWN BY: J.T.C.
DRAWING NO: 2011-M4		APPR. BY: E.A.W.



LEGEND

- Sub slab vent
- Temporary vacuum point

Units have basement, basement unit is # 165

0 20 40 60

Graphic Scale in Feet

CA RICH CONSULTANTS, INC.

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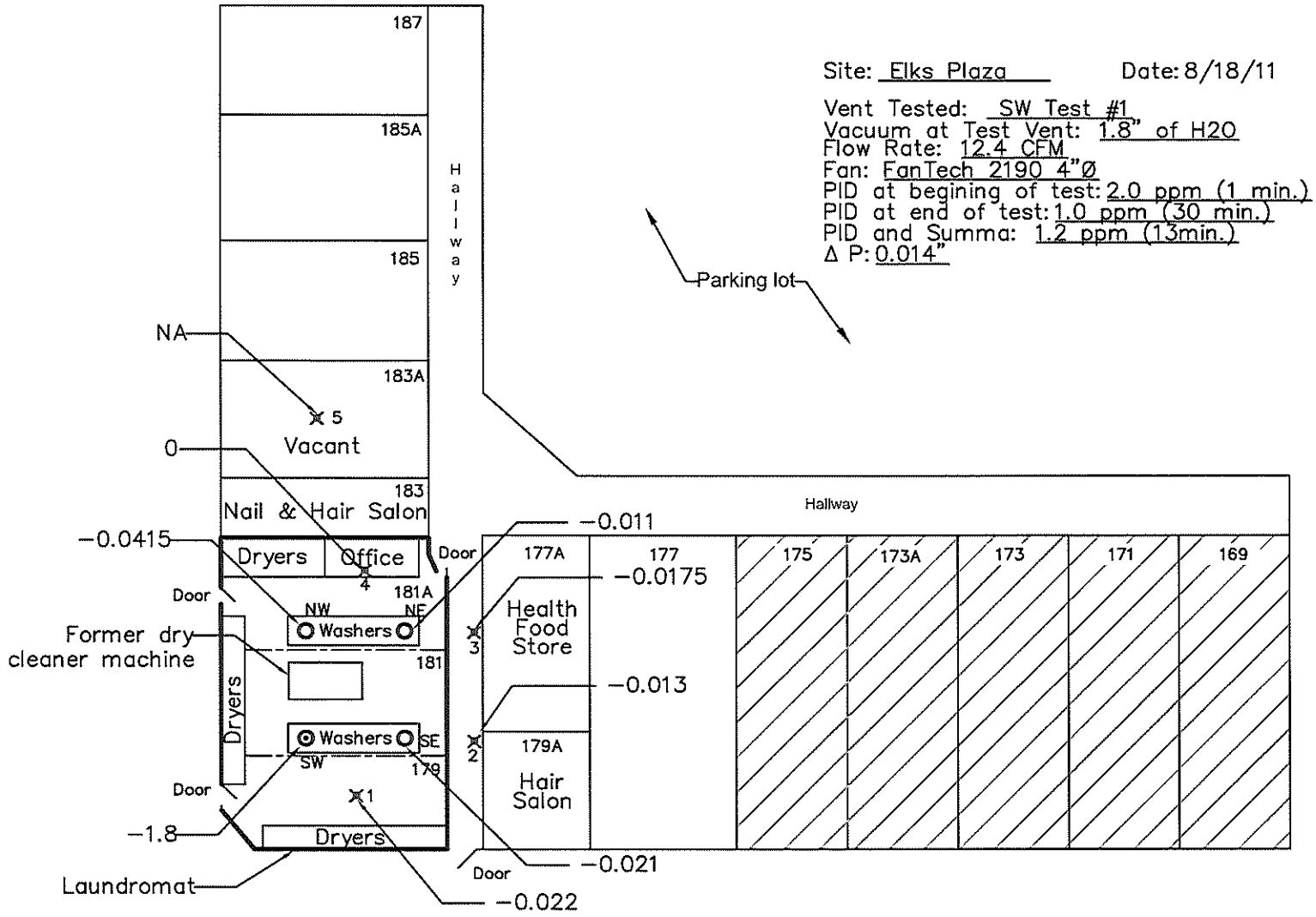
17 Dupont Street, Plainview, New York 11803

TITLE: Layout of Sub Slab Vents and Temporary Vacuum Points	DATE: 9/22/2011
	SCALE: 1"=40'
FIGURE: 3	DRAWN BY: J.T.C.
DRAWING NO: 2011-M3	APPR. BY: E.A.W.

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



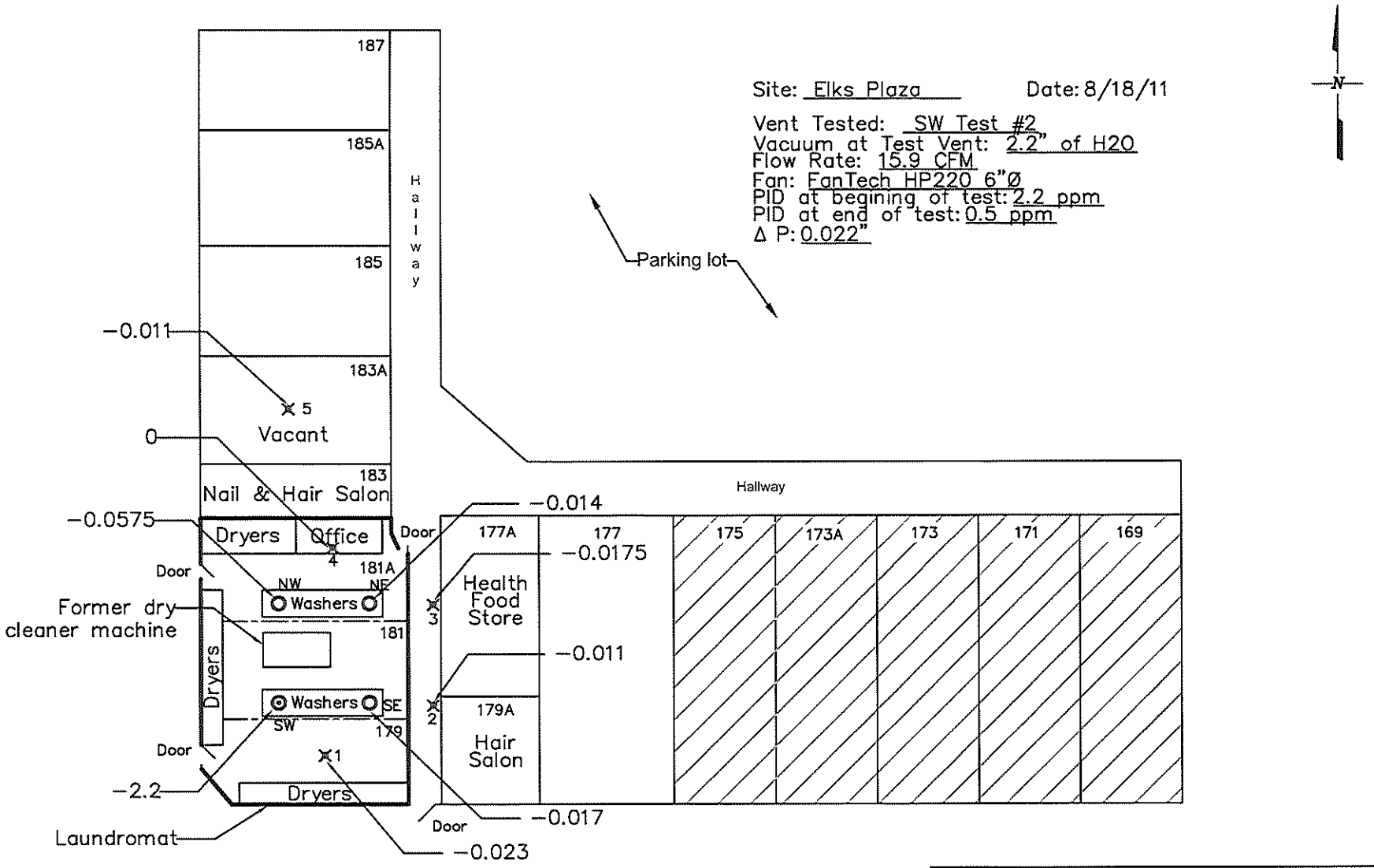
LEGEND

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

0 20 40 60
Graphic Scale in Feet

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

TITLE: Results of Pilot Test, SW Vent		DATE: 9/22/2011
		SCALE: 1"=40'
FIGURE: 4A	Elks Plaza, LLC 157–189 W. Merrick Road Freeport, New York	DRAWN BY: T.R.B.
DRAWING NO: SW–1		APPR. BY: E.A.W.



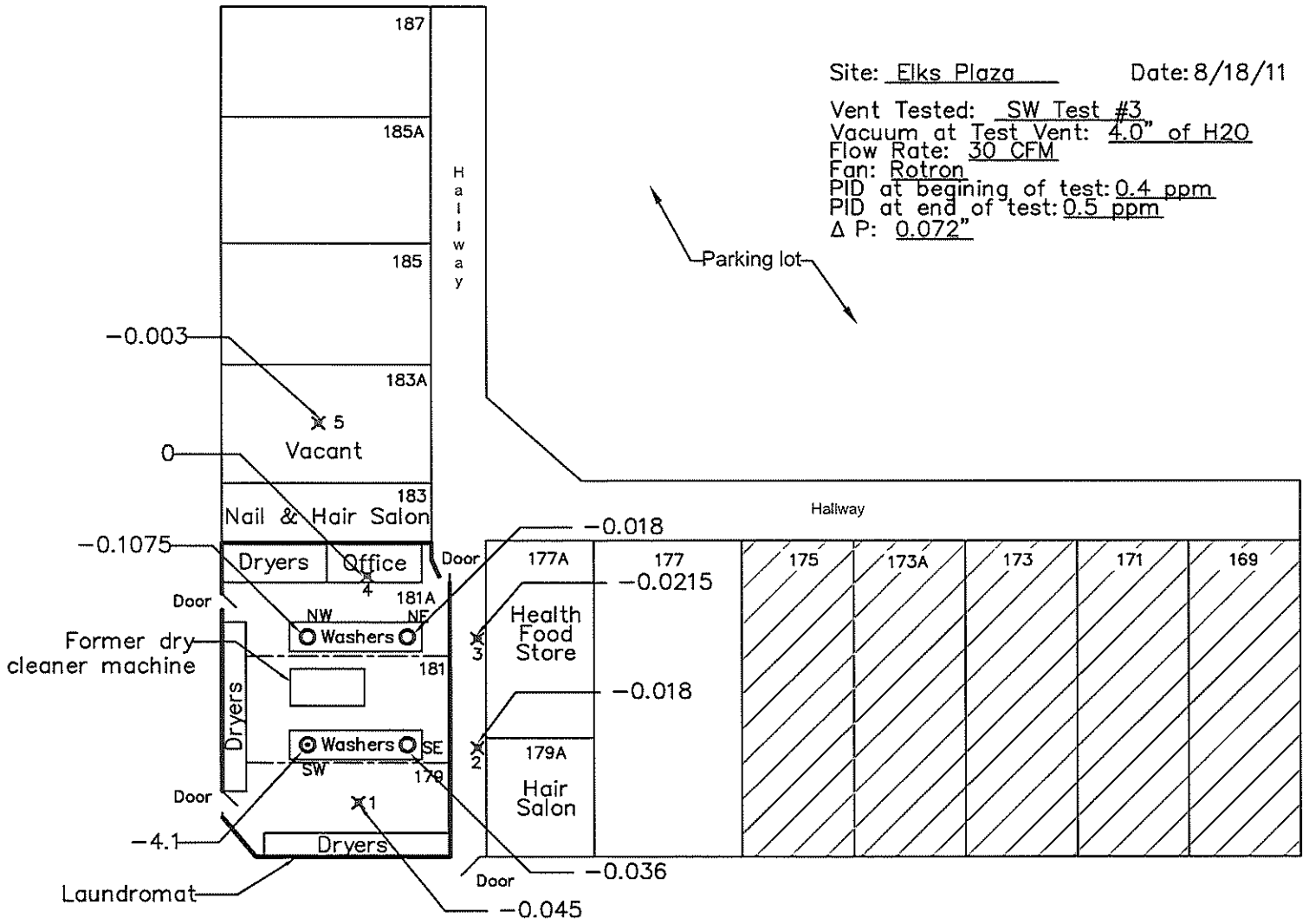
LEGEND

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

0 20 40 60
Graphic Scale in Feet

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

TITLE: Results of Pilot Test, SW Vent		DATE: 9/22/2011
		SCALE: 1"=40'
FIGURE: 4B	Elks Plaza, LLC 157–189 W. Merrick Road Freeport, New York	DRAWN BY: T.R.B.
DRAWING NO: SW–2		APPR. BY: E.A.W.



LEGEND

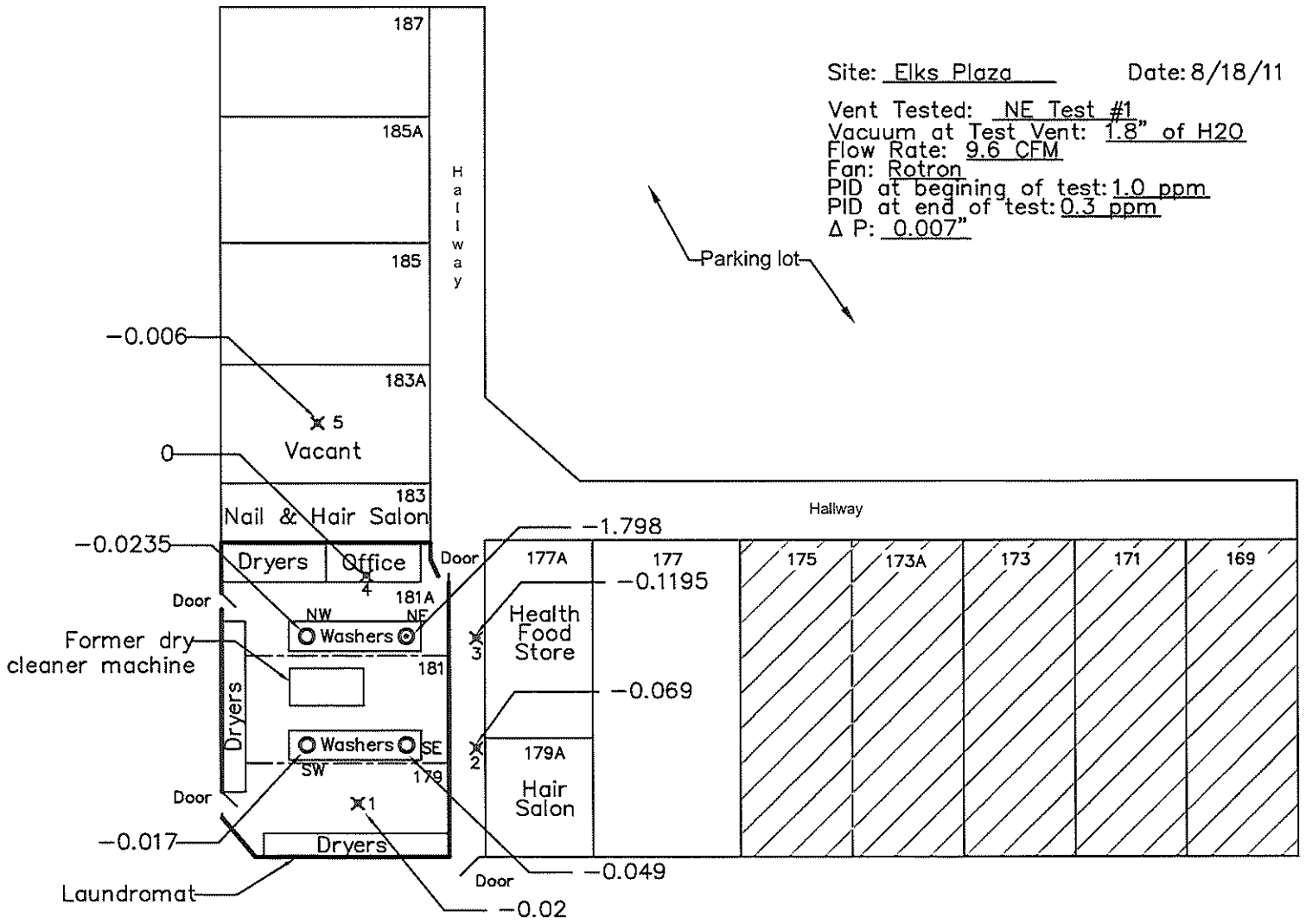
- Vent
- Vent pilot tested
- Temporary vacuum point
- −0.045 Vacuum in inches of water
- Units have basement, basement unit is # 165

0 20 40 60
Graphic Scale in Feet

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

TITLE: Results of Pilot Test, SW Vent	DATE: 9/22/2011
	SCALE: 1"=40'
FIGURE: 4C	DRAWN BY: T.R.B.
DRAWING NO: SW-3	APPR. BY: E.A.W.

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



LEGEND

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

0 20 40 60
Graphic Scale in Feet

CA RICH CONSULTANTS, INC.
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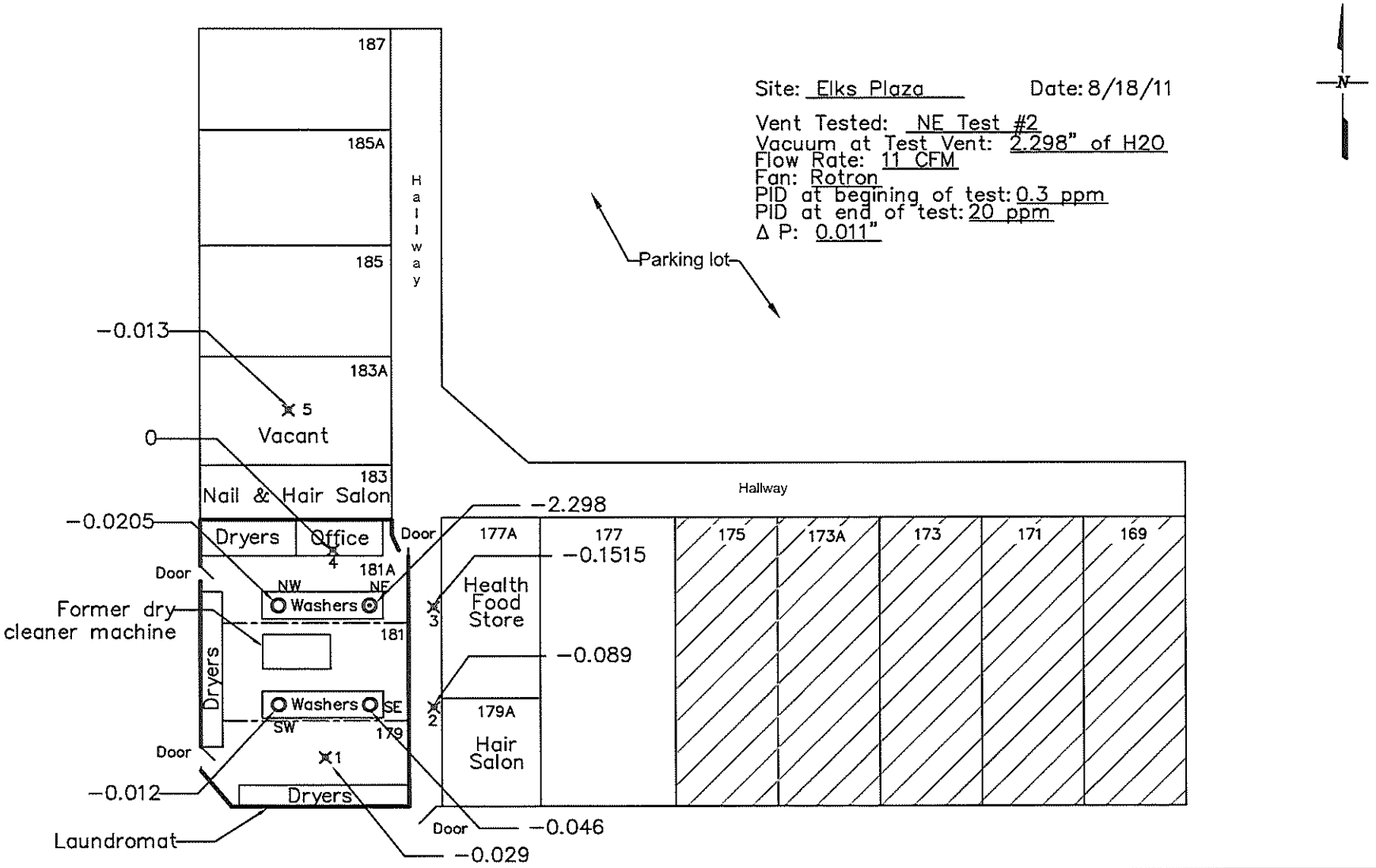
17 Dupont Street, Plainview, New York 11803

TITLE: Results of Pilot Test, NE Vent	DATE: 9/22/2011
	SCALE: 1"=40'
FIGURE: 5A	DRAWN BY: T.R.B.
DRAWING NO: NE-1	APPR. BY: E.A.W.

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



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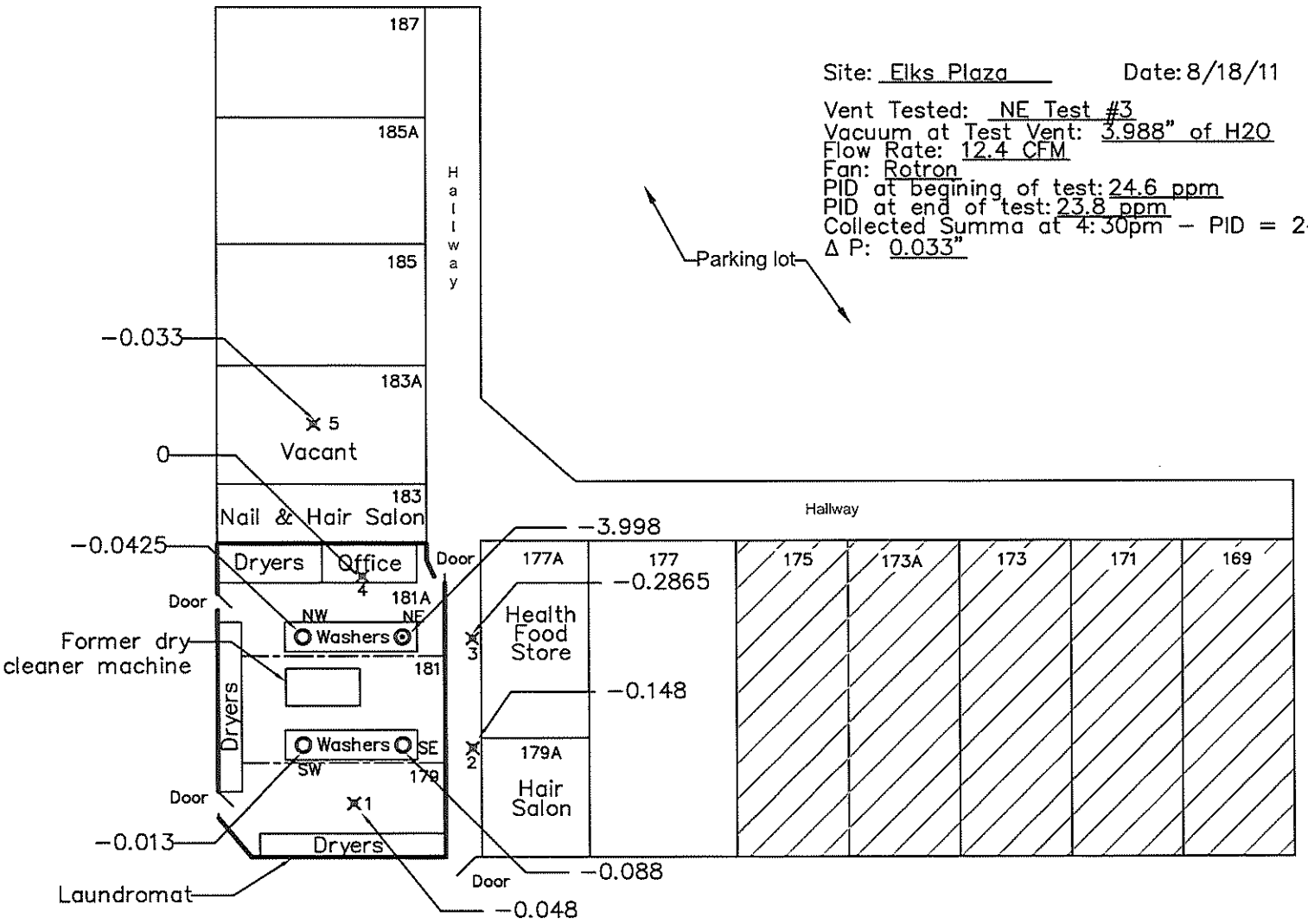
17 Dupont Street, Plainview, New York 11803

TITLE: Results of Pilot Test, NE Vent	DATE: 9/22/2011
	SCALE: 1"=40'
FIGURE: 5B	DRAWN BY: T.R.B.
DRAWING NO: NE-2	Elks Plaza, LLC 157-189 W. Merrick Road Freeport, New York
	APPR. BY: E.A.W.



LEGEND

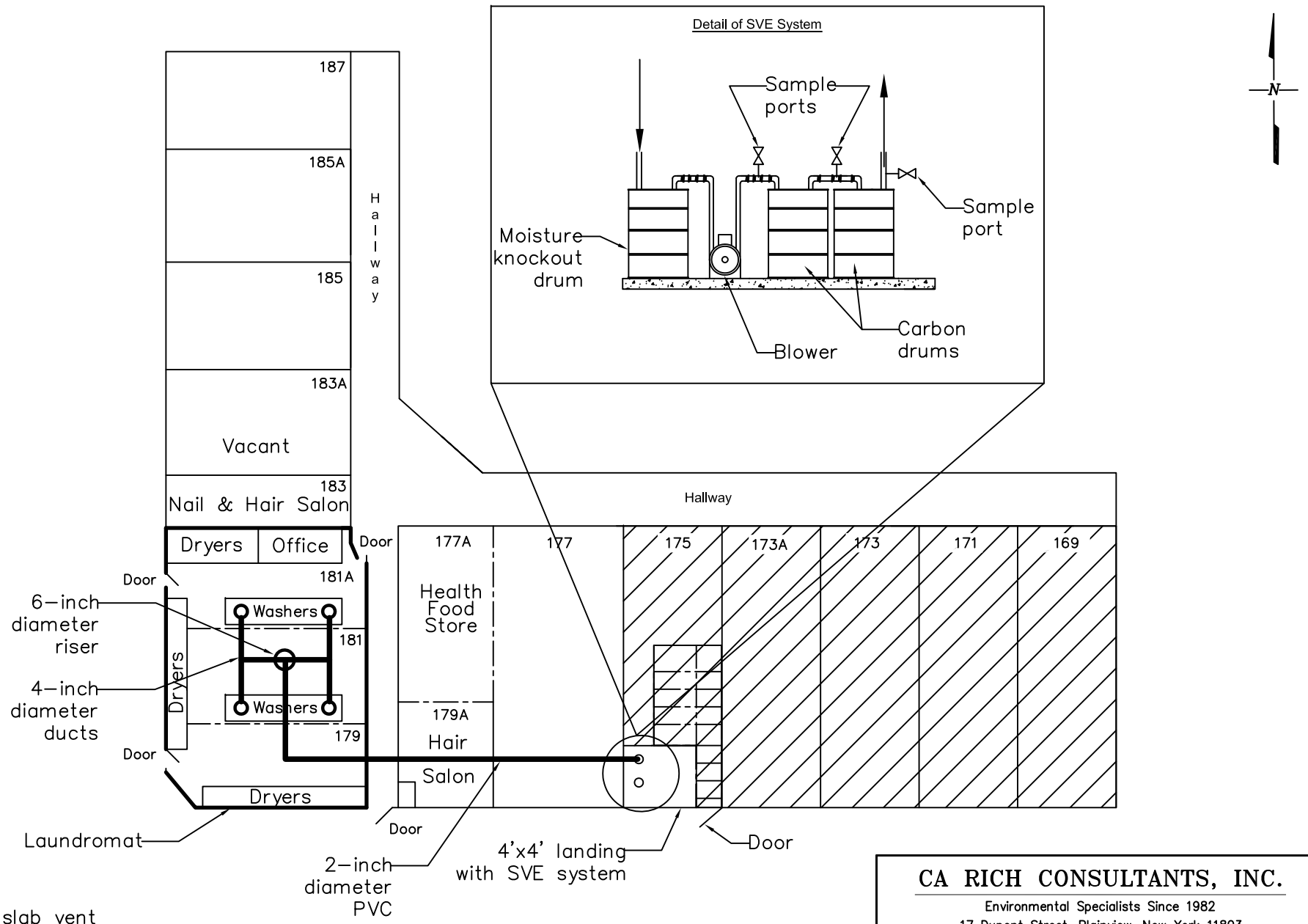
- Vent
- Vent to be pilot tested
- Temporary vacuum point
- −0.048 Vacuum in inches of water
- Units have basement, basement unit is # 165

0 20 40 60
Graphic Scale in Feet

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

TITLE: Results of Pilot Test, NE Vent	DATE: 9/22/2011
	SCALE: 1"=40'
FIGURE: 5C	DRAWN BY: T.R.B.
DRAWING NO: NE-3	APPR. BY: E.A.W.

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



LEGEND

O Sub slab vent

Units have basement, basement unit is # 165

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 Venting System Layout	DATE: 1/12/2012
	SCALE: 1"=40'
FIGURE: 6	Elks Plaza, LLC 157–189 W. Merrick Road Freeport, New York
DRAWING NO: 2012–1	DRAWN BY: J.T.C.
	APPR. BY: S.J.O.

TABLES

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	**Part 375	**Part 375
Sample Depth	1-2 ft	7-8 ft	12-13 ft	12-13 ft	13-15 ft	Soil Cleanup	Soil Cleanup	Soil Cleanup
Matrix	Soil	Soil	Soil	Soil	Soil	Commercial	for Protection	Unrestricted
Date Sampled	6/15/2011	6/15/2011	6/15/2011	6/15/2011	6/15/2011	Use	of Groundwater	Use
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics								
Acetone	ND	ND	ND	ND	ND	500,000	50	50
Benzene	ND	ND	ND	ND	ND	44,000	60	60
Bromochloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	500,000	300	120
Carbon disulfide	ND	ND	ND	ND	ND	NVG	2,700	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	22,000	760	760
Chlorobenzene	ND	ND	ND	ND	ND	500,000	1,100	1,100
Chloroethane	ND	ND	ND	ND	ND	NVG	1,900	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 2
Pre Test Data
Elks Plaza, LLC
157-189 West Merrick Road
Freeport, NY

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

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

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

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

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

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

APPENDIX A

CA RICH Consultants, Inc.

Environmental Specialists
17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **EP-01**
TOTAL DEPTH: **15**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Elks Plaza	DRILLING CO.:	Aarco Environmental
SITE LOCATION:	157-189 Merrick Road	DRILLER:	Kevin and John
JOB NO.:	Elks Plaza/Freeport SSD	RIG TYPE:	Geoprobe 7822DT - Remote
LOGGED BY:	Michael Yager	METHOD OF DRILLING:	Direct Push
PROJECT MANAGER:	Eric Weinstock	SAMPLING METHODS:	5' & 2' Cores
DATES DRILLED:	6/15/11	HAMMER WT./DROP	Push

▽ Water level in boring

DEPTH	SOIL TYPE	SOIL DESCRIPTION	COMMENTS	SAMPLE	Blows per ft.	PID ppm
0		Concrete				
		Brown/tan fine/coarse sand with some small rounded pebbles		EP-01 (1-2)	Push	0
5		Orange/tan fine/medium sand with some small rounded pebbles		EP-01 (7-8)	Push	0
10		Orange/tan fine/medium sand with some small rounded pebbles; tip (12.75' to 13') wet		EP-01 (12-13)	Push	0
▽		Orange/tan/brown medium/coarse sand ; saturated		EP-01 (13-15)	Push	0
15						

NOTES: Sunny/Clear

APPENDIX B

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

LAB NO.113797.01 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1631
MATRIX:Air SAMPLE: EP-NE-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
Propylene	ppbv	< 5		082211	5	EPATO-15
Dichlorodifluoromethane	ppbv	< 2		082211	2	EPATO-15
1,2-Dichlorotetrafluoroethan	ppbv	< 2		082211	2	EPATO-15
Chloromethane	ppbv	< 10		082211	10	EPATO-15
1,3 Butadiene	ppbv	< 10		082211	10	EPATO-15
Vinyl Chloride	ppbv	< 2		082211	2	EPATO-15
Bromomethane	ppbv	< 2		082211	2	EPATO-15
Chloroethane	ppbv	< 10		082211	10	EPATO-15
Vinyl Bromide	ppbv	< 2		082211	2	EPATO-15
Trichlorofluoromethane	ppbv	< 2		082211	2	EPATO-15
Ethyl alcohol	ppbv	< 20		082211	20	EPATO-15
Freon 113	ppbv	< 1		082211	1	EPATO-15
1,1 Dichloroethene	ppbv	< 1		082211	1	EPATO-15
Acetone	ppbv	< 10		082211	10	EPATO-15
Carbon disulfide	ppbv	< 5		082211	5	EPATO-15
Isopropyl Alcohol	ppbv	< 50		082211	50	EPATO-15
3-Chloropropene	ppbv	< 5		082211	5	EPATO-15
Methylene Chloride	ppbv	< 2		082211	2	EPATO-15
tert. Butyl Alcohol	ppbv	< 20		082211	20	EPATO-15
ter.ButylMethylEther	ppbv	< 2		082211	2	EPATO-15
t-1,2-Dichloroethene	ppbv	< 2		082211	2	EPATO-15
Acrylonitrile	ppbv	< 10		082211	10	EPATO-15
Hexane	ppbv	< 5		082211	5	EPATO-15
Vinyl Acetate	ppbv	< 5		082211	5	EPATO-15
1,1 Dichloroethane	ppbv	< 2		082211	2	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR

rn = 23038 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

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

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

LAB NO.113797.01 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1631
MATRIX:Air SAMPLE: EP-NE-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
c-1,2-Dichloroethene	ppbv	< 2		082211	2	EPATO-15
Methyl Ethyl Ketone	ppbv	< 10		082211	10	EPATO-15
Ethyl Acetate	ppbv	< 50		082211	50	EPATO-15
Tetrahydrofuran	ppbv	< 5		082211	5	EPATO-15
Chloroform	ppbv	< 2		082211	2	EPATO-15
Cyclohexane	ppbv	< 2		082211	2	EPATO-15
111 Trichloroethane	ppbv	< 2		082211	2	EPATO-15
Carbon Tetrachloride	ppbv	< 4		082211	4	EPATO-15
Benzene	ppbv	< 2		082211	2	EPATO-15
2,2,4-Trimethylpentane	ppbv	< 5		082211	5	EPATO-15
1,2 Dichloroethane	ppbv	< 5		082211	5	EPATO-15
Heptane	ppbv	< 5		082211	5	EPATO-15
Trichloroethene	ppbv	71		082211	2	EPATO-15
1,2 Dichloropropane	ppbv	< 5		082211	5	EPATO-15
1,4-Dioxane	ppbv	< 10		082211	10	EPATO-15
Bromodichloromethane	ppbv	< 2		082211	2	EPATO-15
c-1,3Dichloropropene	ppbv	< 5		082211	5	EPATO-15
Methylisobutylketone	ppbv	< 10		082211	10	EPATO-15
Toluene	ppbv	< 2		082211	2	EPATO-15
t-1,3Dichloropropene	ppbv	< 2		082211	2	EPATO-15
112 Trichloroethane	ppbv	< 2		082211	2	EPATO-15
Tetrachloroethene	ppbv	31000		082611	90	EPATO-15
2-Hexanone	ppbv	< 5		082211	5	EPATO-15
Chlorodibromomethane	ppbv	< 2		082211	2	EPATO-15
1,2 Dibromoethane	ppbv	< 2		082211	2	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR_____

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

LAB NO.113797.01 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1631
MATRIX:Air SAMPLE: EP-NE-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ppbv	< 2		082211	2	EPATO-15
Ethyl Benzene	ppbv	< 2		082211	2	EPATO-15
m + p Xylene	ppbv	< 5		082211	5	EPATO-15
o Xylene	ppbv	< 2		082211	2	EPATO-15
Styrene	ppbv	< 2		082211	2	EPATO-15
Bromoform	ppbv	< 2		082211	2	EPATO-15
1122Tetrachloroethane	ppbv	< 2		082211	2	EPATO-15
p-Ethyltoluene	ppbv	< 5		082211	5	EPATO-15
135-Trimethylbenzene	ppbv	< 5		082211	5	EPATO-15
124-Trimethylbenzene	ppbv	< 5		082211	5	EPATO-15
1,3 Dichlorobenzene (v)	ppbv	< 2		082211	2	EPATO-15
1,4 Dichlorobenzene (v)	ppbv	< 5		082211	5	EPATO-15
Benzyl Chloride	ppbv	< 2		082211	2	EPATO-15
1,2 Dichlorobenzene (v)	ppbv	< 5		082211	5	EPATO-15
Hexachlorobutadiene	ppbv	< 5		082211	5	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR

rn = 23040 NYSDOH ID # 10320

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

LAB NO.113797.02 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1036
MATRIX:Air SAMPLE: EP-SW-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
Propylene	ppbv	< 5		082211	5	EPATO-15
Dichlorodifluoromethane	ppbv	< 2		082211	2	EPATO-15
1,2-Dichlorotetrafluoroethan	ppbv	< 2		082211	2	EPATO-15
Chloromethane	ppbv	< 10		082211	10	EPATO-15
1,3 Butadiene	ppbv	< 10		082211	10	EPATO-15
Vinyl Chloride	ppbv	< 2		082211	2	EPATO-15
Bromomethane	ppbv	< 2		082211	2	EPATO-15
Chloroethane	ppbv	< 10		082211	10	EPATO-15
Vinyl Bromide	ppbv	< 2		082211	2	EPATO-15
Trichlorofluoromethane	ppbv	< 2		082211	2	EPATO-15
Ethyl alcohol	ppbv	< 20		082211	20	EPATO-15
Freon 113	ppbv	< 1		082211	1	EPATO-15
1,1 Dichloroethene	ppbv	< 1		082211	1	EPATO-15
Acetone	ppbv	< 10		082211	10	EPATO-15
Carbon disulfide	ppbv	< 5		082211	5	EPATO-15
Isopropyl Alcohol	ppbv	< 50		082211	50	EPATO-15
3-Chloropropene	ppbv	< 5		082211	5	EPATO-15
Methylene Chloride	ppbv	< 2		082211	2	EPATO-15
tert. Butyl Alcohol	ppbv	< 20		082211	20	EPATO-15
ter.ButylMethylEther	ppbv	< 2		082211	2	EPATO-15
t-1,2-Dichloroethene	ppbv	< 2		082211	2	EPATO-15
Acrylonitrile	ppbv	< 10		082211	10	EPATO-15
Hexane	ppbv	< 5		082211	5	EPATO-15
Vinyl Acetate	ppbv	< 5		082211	5	EPATO-15
1,1 Dichloroethane	ppbv	< 2		082211	2	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR

rn = 23041 NYSDOH ID # 10320

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

LAB NO.113797.02 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1036
MATRIX:Air SAMPLE: EP-SW-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
c-1,2-Dichloroethene	ppbv	< 2		082211	2	EPATO-15
Methyl Ethyl Ketone	ppbv	< 10		082211	10	EPATO-15
Ethyl Acetate	ppbv	< 50		082211	50	EPATO-15
Tetrahydrofuran	ppbv	< 5		082211	5	EPATO-15
Chloroform	ppbv	< 2		082211	2	EPATO-15
Cyclohexane	ppbv	< 2		082211	2	EPATO-15
111 Trichloroethane	ppbv	< 2		082211	2	EPATO-15
Carbon Tetrachloride	ppbv	< 4		082211	4	EPATO-15
Benzene	ppbv	< 2		082211	2	EPATO-15
2,2,4-Trimethylpentane	ppbv	< 5		082211	5	EPATO-15
1,2 Dichloroethane	ppbv	< 5		082211	5	EPATO-15
Heptane	ppbv	< 5		082211	5	EPATO-15
Trichloroethene	ppbv	34		082211	2	EPATO-15
1,2 Dichloropropane	ppbv	< 5		082211	5	EPATO-15
1,4-Dioxane	ppbv	< 10		082211	10	EPATO-15
Bromodichloromethane	ppbv	< 2		082211	2	EPATO-15
c-1,3Dichloropropene	ppbv	< 5		082211	5	EPATO-15
Methylisobutylketone	ppbv	< 10		082211	10	EPATO-15
Toluene	ppbv	< 2		082211	2	EPATO-15
t-1,3Dichloropropene	ppbv	< 2		082211	2	EPATO-15
112 Trichloroethane	ppbv	< 2		082211	2	EPATO-15
Tetrachloroethene	ppbv	14000		082411	30	EPATO-15
2-Hexanone	ppbv	< 5		082211	5	EPATO-15
Chlorodibromomethane	ppbv	< 2		082211	2	EPATO-15
1,2 Dibromoethane	ppbv	< 2		082211	2	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR

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

LAB NO.113797.02 08/30/11

C.A. Rich Consultants, Incorporated
17 Dupont Street
Plainview, NY 11803
ATTN: Eric Weinstock PO#:

SOURCE OF SAMPLE: Elks Plaza
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:08/18/11 RECEIVED:08/19/11
TIME COL'D:1036
MATRIX:Air SAMPLE: EP-SW-Grab

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE TIME OF ANALYSIS	LRL	ANALYTICAL METHOD
Chlorobenzene	ppbv	< 2		082211	2	EPATO-15
Ethyl Benzene	ppbv	< 2		082211	2	EPATO-15
m + p Xylene	ppbv	< 5		082211	5	EPATO-15
o Xylene	ppbv	< 2		082211	2	EPATO-15
Styrene	ppbv	< 2		082211	2	EPATO-15
Bromoform	ppbv	< 2		082211	2	EPATO-15
1122Tetrachloroethane	ppbv	< 2		082211	2	EPATO-15
p-Ethyltoluene	ppbv	< 5		082211	5	EPATO-15
135-Trimethylbenzene	ppbv	< 5		082211	5	EPATO-15
124-Trimethylbenzene	ppbv	< 5		082211	5	EPATO-15
1,3 Dichlorobenzene (v)	ppbv	< 2		082211	2	EPATO-15
1,4 Dichlorobenzene (v)	ppbv	< 5		082211	5	EPATO-15
Benzyl Chloride	ppbv	< 2		082211	2	EPATO-15
1,2 Dichlorobenzene (v)	ppbv	< 5		082211	5	EPATO-15
Hexachlorobutadiene	ppbv	< 5		082211	5	EPATO-15

cc:

LRL=Laboratory Reporting Limit

REMARKS:
The LOQ for all analytes was confirmed with a daily LOQ std.

DIRECTOR_____

rn = 23043 NYSDOH ID # 10320

18

113797.01

ECOTEST LABORATORIES INC.

377 Sheffield Ave.
North Babylon, NY 11703
tel. 631-422-5777, fax 631-422-5770, Email ECOTESTLAB@aol.com

CANISTER SAMPLING DATA SHEET

CANISTER SERIAL NO.	SAMPLE TRAIN SERIAL NO.	FLOW
EcoTest 27	NA	GRAB

This above referenced Summa can and sample train was received in good condition

DATE: 8/18/2011
CLIENT: CA Rich
CLIENTS AGENT (print):
SIGNED: [signature]

Client agrees to pay all replacement costs associated with loss or damage of canist train. Client acknowledges that this canister is valid for a maximum of 30 days from the date of evacuation. Client is responsibe for any vacuum loss or contamination while in clients custody.

VAC leaving EcoTest:	29" Hg	PERSON RECEIVING REPORT:
Date Evacuated:	8/18/2011	ANALYSIS:
VAC/PRES returned EcoTest:	0" Hg	TAT:

CANISTER SERIAL NO. 1319 EcoTest #27
SAMPLE TRAIN SERIAL NO. NA
RETURNED IN GOOD CONDITION TO ECOTEST LABORATORIES INC.
DATE: 8/19/11
SIGNED: [signature] **for ECOTEST LABS.**

ALL INFORMATION BELOW MUST BE PROVIDED BY CLIENT:

CLIENT	CA Rich	**SAMPLE TYPE CHECK ONE**	
SOURCE	Elks Plaza	AMBIENT AIR	
SAMPLE	EP-NE-Grab	SUB SLAB VAPOR	
DATE SAMPLED	8/18/11	VAPOR WELL	
TIME SAMPLING STARTED:	4:30 PM	SVE SYSTEM	X
TIME SAMPLING FINISHED:	4:31 PM	**EXPECTED CONC CHECK ONE**	
TEMPERATURE SAMPLING STARTED:	40°	LOW	
TEMPERATURE SAMPLING FINISHED:	90°	MEDIUM	
DATE:	8/18/11	HIGH	
CLIENT:	CA Rich		
CLIENTS AGENT:	Eric Weinstock		

PID = 24 ppm

RELINQUISHED BY:		DATE/TIME:
RECEIVED BY:	[signature]	DATE/TIME: 8/18/11 17:05
RELINQUISHED BY:		DATE/TIME:
RECEIVED BY:		DATE/TIME:

suspect PCE in sample

113797.02

ECOTEST LABORATORIES INC.

377 Sheffield Ave.
North Babylon, NY 11703
tel. 631-422-5777, fax 631-422-5770, Email ECOTESTLAB@aol.com

CANISTER SAMPLING DATA SHEET

CANISTER SERIAL NO. EcoTest 35

SAMPLE TRAIN SERIAL NO. NA

FLOW GRAB

This above referenced Summa can and sample train was received in good condition

DATE: 8/12/2011
CLIENT: CA Rich
CLIENTS AGENT (print): Michael Yager
SIGNED: Michael Yager

Client agrees to pay all replacement costs associated with loss or damage of canist train. Client acknowledges that this canister is valid for a maximum of 30 days from the date of evacuation. Client is responsibe for any vacuum loss or contamination while in clients custody.

VAC leaving EcoTest: 29" Hg
Date Evacuated: 8/12/2011
VAC/PRES returned EcoTest: 0" Hg

PERSON RECEIVING REPORT: Eric Weinstock
ANALYSIS:
TAT: Standard

CANISTER SERIAL NO. EcoTest# 35 1311
SAMPLE TRAIN SERIAL NO. N/A
RETURNED IN GOOD CONDITION TO ECOTEST LABORATORIES INC.
DATE: 8/19/11

SIGNED: [signature] **for ECOTEST LABS.**

ALL INFORMATION BELOW MUST BE PROVIDED BY CLIENT:

CLIENT CA RICH
SOURCE EIKS PLAZA
SAMPLE EPSW - Grab
DATE SAMPLED 8/18/11
TIME SAMPLING STARTED: 1035
TIME SAMPLING FINISHED: 1036
TEMPERATURE SAMPLING STARTED: ± 75-80°F
TEMPERATURE SAMPLING FINISHED: ± 75-80°F
DATE:
CLIENT: CA Rich Consultants, Inc.
CLIENTS AGENT:

SAMPLE TYPE CHECK ONE	
AMBIENT AIR	
SUB SLAB VAPOR	
VAPOR WELL	
SVE SYSTEM	X

EXPECTED CONC CHECK ONE	
LOW	
MEDIUM	
HIGH	

RELINQUISHED BY:
RECEIVED BY: [signature] DATE/TIME:
RELINQUISHED BY: DATE/TIME: 8/19/11 17:05
RECEIVED BY: DATE/TIME:

PID = 2.0 ppm

suspect PCE in sample

ECOTEST ID	113797.01				
SOURCE OF SAMPLE	Elks Plaza				
SAMPLE ID	EP-NE-Grab				
DATE SAMPLED	8/18/2011				
MATRIX	Air				
ANALYTICAL METHOD	EPA TO-15				
ANALYTE	CAS NO	DATE OF ANALYSIS		CONC UG/M3	LRL UG/M3
1,1 Dichloroethane	75-34-3	8/22/2011	<	8.10	0.81
1,1 Dichloroethene	75-35-4	8/22/2011	<	3.97	0.40
1,2 Dibromoethane	106-93-4	8/22/2011	<	15.38	1.54
1,2 Dichlorobenzene (v)	95-50-1	8/22/2011	<	30.08	3.01
1,2 Dichloroethane	107-06-2	8/22/2011	<	20.26	2.03
1,2 Dichloropropane	78-87-5	8/22/2011	<	23.12	2.31
1,2-Dichlorotetrafluoroethane	76-14-2	8/22/2011	<	13.99	1.40
1,3 Butadiene	106-99-0	8/22/2011	<	22.10	2.21
1,3 Dichlorobenzene (v)	541-73-1	8/22/2011	<	12.03	1.20
1,4 Dichlorobenzene (v)	106-46-7	8/22/2011	<	30.08	3.01
1,4-Dioxane	123-91-1	8/22/2011	<	36.01	3.60
111 Trichloroethane	71-55-6	8/22/2011	<	10.92	1.09
112 Trichloroethane	79-00-5	8/22/2011	<	10.92	1.09
1122Tetrachloroethane	79-34-5	8/22/2011	<	13.74	1.37
124-Trimethylbenzene	95-63-6	8/22/2011	<	24.60	2.46
135-Trimethylbenzene	108-67-8	8/22/2011	<	24.60	2.46
2,2,4-Trimethylpentane	540-84-1	8/22/2011	<	23.33	2.33
2-Hexanone	591-78-6	8/22/2011	<	20.46	2.05
3-Chloropropene	107-05-1	8/22/2011	<	15.66	1.57
Acetone	67-64-1	8/22/2011	<	23.78	2.38
Acrylonitrile	107-13-1	8/22/2011	<	21.69	2.17
Benzene	71-43-2	8/22/2011	<	6.38	0.64
Benzyl Chloride	100-44-7	8/22/2011	<	10.36	1.04
Bromodichloromethane	75-27-4	8/22/2011	<	13.26	1.33
Bromoform	75-25-2	8/22/2011	<	20.70	2.07
Bromomethane	74-83-9	8/22/2011	<	7.77	0.78
c-1,2-Dichloroethene	156-59-2	8/22/2011	<	7.93	0.79
c-1,3Dichloropropene	10061-01-5	8/22/2011	<	22.71	2.27
Carbon disulfide	75-15-0	8/22/2011	<	15.55	1.56
Carbon Tetrachloride	56-23-5	8/22/2011	<	25.18	2.52
Chlorobenzene	108-90-7	8/22/2011	<	9.22	0.92
Chlorodibromomethane	124-48-1	8/22/2011	<	16.86	1.69
Chloroethane	75-00-3	8/22/2011	<	26.40	2.64
Chloroform	67-66-3	8/22/2011	<	9.74	0.97
Chloromethane	74-87-3	8/22/2011	<	20.67	2.07
Cyclohexane	110-82-7	8/22/2011	<	6.89	0.69
Dichlorodifluoromethane	75-71-8	8/22/2011	<	9.90	0.99
Ethyl Acetate	141-78-6	8/22/2011	<	180.05	18.01
Ethyl alcohol	64-17-5	8/22/2011	<	37.66	3.77
Ethyl Benzene	100-41-4	8/22/2011	<	8.68	0.87
Freon 113	76-13-1	8/22/2011	<	7.67	0.77

ECOTEST ID	113797.01				
SOURCE OF SAMPLE	Elks Plaza				
SAMPLE ID	EP-NE-Grab				
DATE SAMPLED	8/18/2011				
MATRIX	Air				
ANALYTICAL METHOD	EPA TO-15				
ANALYTE	CAS NO	DATE OF ANALYSIS		CONC UG/M3	LRL UG/M3
Heptane	142-82-5	8/22/2011	<	20.46	2.05
Hexachlorobutadiene	87-68-3	8/22/2011	<	53.35	5.34
Hexane	110-54-3	8/22/2011	<	17.64	1.76
Isopropyl Alcohol	67-63-0	8/22/2011	<	122.75	12.28
m + p Xylene	XYL-MP	8/22/2011	<	21.73	2.17
Methyl Ethyl Ketone	78-93-3	8/22/2011	<	29.46	2.95
Methylene Chloride	75-09-2	8/22/2011	<	6.95	0.69
Methylisobutylketone	108-10-1	8/22/2011	<	41.01	4.10
o Xylene	95-47-6	8/22/2011	<	8.69	0.87
p-Ethyltoluene	622-96-8	8/22/2011	<	24.56	2.46
Propylene	115-07-1	8/22/2011	<	8.60	0.86
Styrene	100-42-5	8/22/2011	<	8.51	0.85
t-1,2-Dichloroethene	156-60-5	8/22/2011	<	7.93	0.79
t-1,3Dichloropropene	10061-02-6	8/22/2011	<	9.08	0.91
ter.ButylMethylEther	1634-04-4	8/22/2011	<	7.04	0.70
tert. Butyl Alcohol	75-65-0	8/22/2011	<	60.56	6.06
Tetrachloroethene	127-18-4	8/26/2011		210335.00	1.36
Tetrahydrofuran	109-99-9	8/22/2011	<	14.74	1.47
Toluene	108-88-3	8/22/2011	<	7.53	0.75
Trichloroethene	79-01-6	8/22/2011		381.48	1.07
Trichlorofluoromethane	75-69-4	8/22/2011	<	11.24	1.12
Vinyl Acetate	108-05-4	8/22/2011	<	17.60	1.76
Vinyl Bromide	593-60-2	8/22/2011	<	8.76	0.88
Vinyl Chloride	75-01-4	8/22/2011	<	5.12	0.51

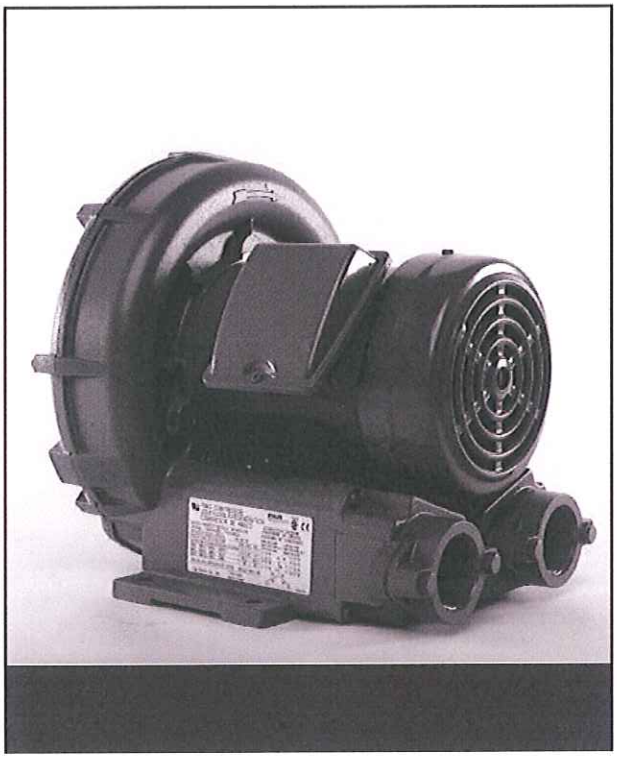
ECOTEST ID	113797.02				
SOURCE OF SAMPLE	Elks Plaza				
SAMPLE ID	EP-SW-Grab				
DATE SAMPLED	8/18/2011				
MATRIX	Air				
ANALYTICAL METHOD	EPA TO-15				
		DATE OF		CONC	LRL
ANALYTE	CAS NO	ANALYSIS		UG/M3	UG/M3
1,1 Dichloroethane	75-34-3	8/22/2011	<	8.10	0.81
1,1 Dichloroethene	75-35-4	8/22/2011	<	3.97	0.40
1,2 Dibromoethane	106-93-4	8/22/2011	<	15.38	1.54
1,2 Dichlorobenzene (v)	95-50-1	8/22/2011	<	30.08	3.01
1,2 Dichloroethane	107-06-2	8/22/2011	<	20.26	2.03
1,2 Dichloropropane	78-87-5	8/22/2011	<	23.12	2.31
1,2-Dichlorotetrafluoroethane	76-14-2	8/22/2011	<	13.99	1.40
1,3 Butadiene	106-99-0	8/22/2011	<	22.10	2.21
1,3 Dichlorobenzene (v)	541-73-1	8/22/2011	<	12.03	1.20
1,4 Dichlorobenzene (v)	106-46-7	8/22/2011	<	30.08	3.01
1,4-Dioxane	123-91-1	8/22/2011	<	36.01	3.60
111 Trichloroethane	71-55-6	8/22/2011	<	10.92	1.09
112 Trichloroethane	79-00-5	8/22/2011	<	10.92	1.09
1122Tetrachloroethane	79-34-5	8/22/2011	<	13.74	1.37
124-Trimethylbenzene	95-63-6	8/22/2011	<	24.60	2.46
135-Trimethylbenzene	108-67-8	8/22/2011	<	24.60	2.46
2,2,4-Trimethylpentane	540-84-1	8/22/2011	<	23.33	2.33
2-Hexanone	591-78-6	8/22/2011	<	20.46	2.05
3-Chloropropene	107-05-1	8/22/2011	<	15.66	1.57
Acetone	67-64-1	8/22/2011	<	23.78	2.38
Acrylonitrile	107-13-1	8/22/2011	<	21.69	2.17
Benzene	71-43-2	8/22/2011	<	6.38	0.64
Benzyl Chloride	100-44-7	8/22/2011	<	10.36	1.04
Bromodichloromethane	75-27-4	8/22/2011	<	13.26	1.33
Bromoform	75-25-2	8/22/2011	<	20.70	2.07
Bromomethane	74-83-9	8/22/2011	<	7.77	0.78
c-1,2-Dichloroethene	156-59-2	8/22/2011	<	7.93	0.79
c-1,3Dichloropropene	10061-01-5	8/22/2011	<	22.71	2.27
Carbon disulfide	75-15-0	8/22/2011	<	15.55	1.56
Carbon Tetrachloride	56-23-5	8/22/2011	<	25.18	2.52
Chlorobenzene	108-90-7	8/22/2011	<	9.22	0.92
Chlorodibromomethane	124-48-1	8/22/2011	<	16.86	1.69
Chloroethane	75-00-3	8/22/2011	<	26.40	2.64
Chloroform	67-66-3	8/22/2011	<	9.74	0.97
Chloromethane	74-87-3	8/22/2011	<	20.67	2.07
Cyclohexane	110-82-7	8/22/2011	<	6.89	0.69
Dichlorodifluoromethane	75-71-8	8/22/2011	<	9.90	0.99
Ethyl Acetate	141-78-6	8/22/2011	<	180.05	18.01
Ethyl alcohol	64-17-5	8/22/2011	<	37.66	3.77
Ethyl Benzene	100-41-4	8/22/2011	<	8.68	0.87
Freon 113	76-13-1	8/22/2011	<	7.67	0.77

ECOTEST ID	113797.02				
SOURCE OF SAMPLE	Elks Plaza				
SAMPLE ID	EP-SW-Grab				
DATE SAMPLED	8/18/2011				
MATRIX	Air				
ANALYTICAL METHOD	EPA TO-15				
ANALYTE	CAS NO	DATE OF ANALYSIS		CONC UG/M3	LRL UG/M3
Heptane	142-82-5	8/22/2011	<	20.46	2.05
Hexachlorobutadiene	87-68-3	8/22/2011	<	53.35	5.34
Hexane	110-54-3	8/22/2011	<	17.64	1.76
Isopropyl Alcohol	67-63-0	8/22/2011	<	122.75	12.28
m + p Xylene	XYL-MP	8/22/2011	<	21.73	2.17
Methyl Ethyl Ketone	78-93-3	8/22/2011	<	29.46	2.95
Methylene Chloride	75-09-2	8/22/2011	<	6.95	0.69
Methylisobutylketone	108-10-1	8/22/2011	<	41.01	4.10
o Xylene	95-47-6	8/22/2011	<	8.69	0.87
p-Ethyltoluene	622-96-8	8/22/2011	<	24.56	2.46
Propylene	115-07-1	8/22/2011	<	8.60	0.86
Styrene	100-42-5	8/22/2011	<	8.51	0.85
t-1,2-Dichloroethene	156-60-5	8/22/2011	<	7.93	0.79
t-1,3Dichloropropene	10061-02-6	8/22/2011	<	9.08	0.91
ter.ButylMethylEther	1634-04-4	8/22/2011	<	7.04	0.70
tert. Butyl Alcohol	75-65-0	8/22/2011	<	60.56	6.06
Tetrachloroethene	127-18-4	8/24/2011		94990.00	1.36
Tetrahydrofuran	109-99-9	8/22/2011	<	14.74	1.47
Toluene	108-88-3	8/22/2011	<	7.53	0.75
Trichloroethene	79-01-6	8/22/2011		182.68	1.07
Trichlorofluoromethane	75-69-4	8/22/2011	<	11.24	1.12
Vinyl Acetate	108-05-4	8/22/2011	<	17.60	1.76
Vinyl Bromide	593-60-2	8/22/2011	<	8.76	0.88
Vinyl Chloride	75-01-4	8/22/2011	<	5.12	0.51

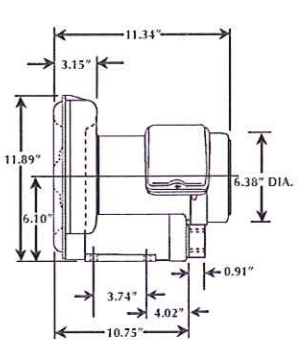
APPENDIX C

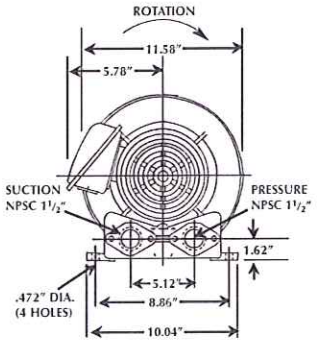
VFC40

RING COMPRESSOR



The VFC40 is a single-stage ring compressor with a maximum pressure of 54.5 in. H_2O, a maximum vacuum of 50 in. H_2O, and a maximum capacity of 98 SCFM. It comes complete with a direct-drive, 1 horsepower, TEFC motor capable of operating on a wide range of voltages, and on 50 or 60 Hz. A pilot-duty thermal protector is standard equipment on all 3-phase and 1-phase models. All versions have NEMA class B insulation, are UL recognized, CSA certified, and CE. 575V units are CSA certified only.





SPECIFICATIONS

	Model No.	Hz	Voltage	Amps (Max. Rated)	Amps (Locked Rotor)	Max. Pressure	Max. Vacuum	Max. Airflow	Min. Airflow	Max. Temp Rise (ΔT)	Weight
			Low Voltage/High Voltage			in. H_2O	in. H_2O	SCFM	SCFM	°F(°C)	lbs.(kg)
1 Phase	VFC400P-5T	60	115/230	8.6/4.3	24/12	54.5	50	98	3.5	119(65)	51(23)
		50	110/220	6.0/3.0	22/11	40	37	84	3.5	101(55)	
3 Phase	VFC400A-7W	60	200-240/400-480	3.3-2.8/1.7-1.4	15-16.5/7.4-8.2	54.5	50	98	3.5	119(65)	47.5(21.5)
		50	190-230/380-460	2.2-2.4/1.1-1.2	16.5-18.5/8.3-9.2	40	37	84	3.5	101(55)	
	VFC400A-5W	60	575	1.3	7.2	54.5	50	98	3.5	119(65)	47.5(21.5)

ACCESSORIES

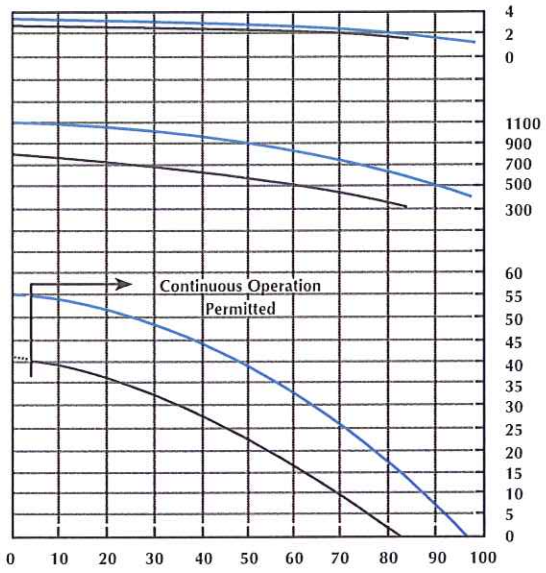
Description	Vacuum Relief Valve	Pressure Relief Valve	Inlet Filter	Inlet Filter Cover	Inlet Filter/Receiver	Exhaust Silencer/Muffler
Model No.	VV4	PV4	F-45	C-45	R30P1.5	VFY-024A

NOTE: Maximum allowable time at deadhead is 120 seconds.

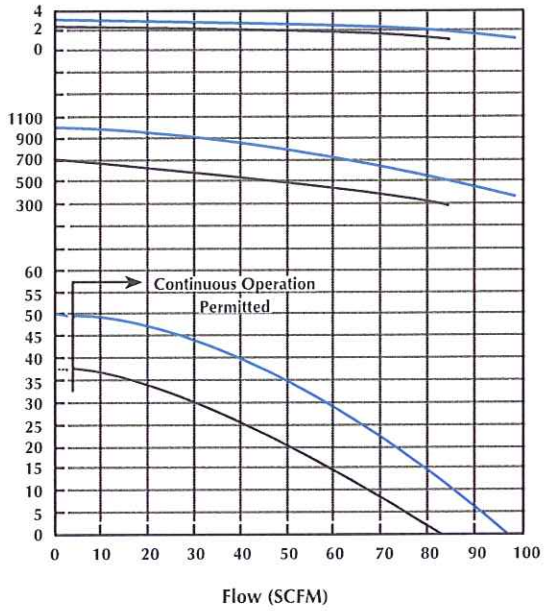
VFC40 PERFORMANCE DATA

KEY
60 Hz
50 Hz

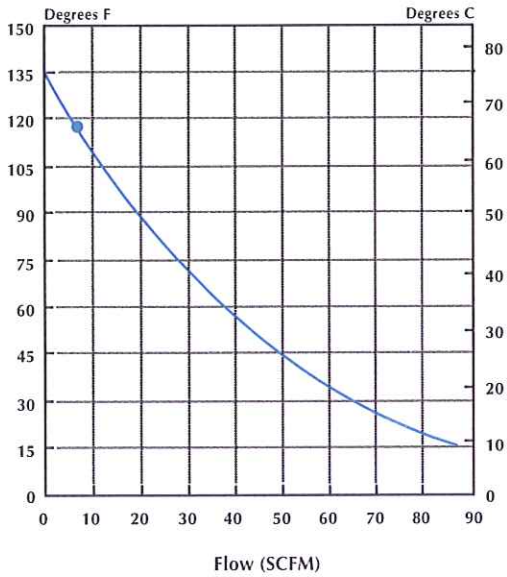
PRESSURE



VACUUM

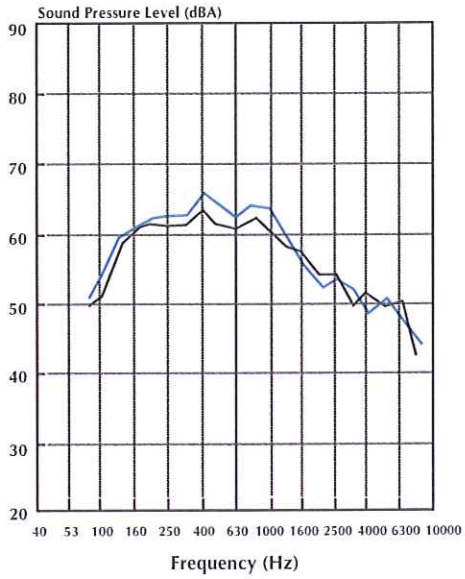


TEMPERATURE RISE



Max. Air Temperature is Value Marked • plus 40 Degrees C Ambient Temperature

SOUND LEVEL

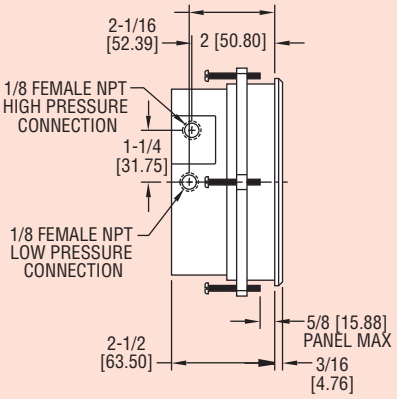


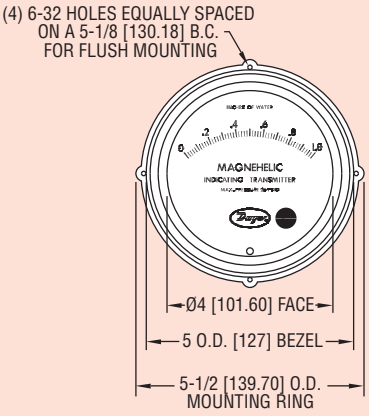
*Measured at distance of 1.0 meter

Series 2000-SP

Magnehelic® Differential Pressure Gages

Indicate Positive, Negative or Differential, Accurate within 2%





Bright red LED on right of scale shows when setpoint is reached. Field adjustable from gage face, unit operates on 12-24 VDC. Requires MP or HP style cover and bezel.

For Set Point Indicator Option, Add suffix **-SP** to end of gage model number
Ex: 2001-SP

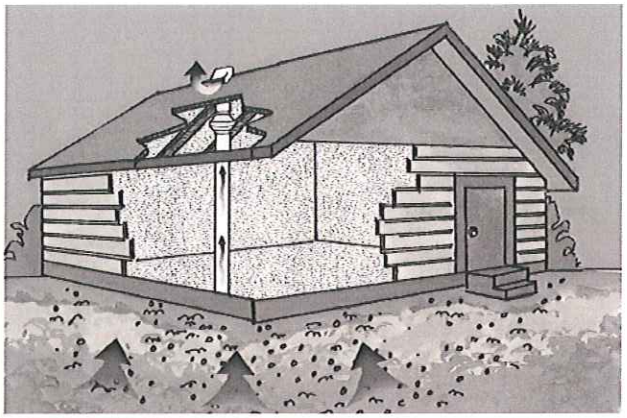
SPECIFICATIONS

Service: Air and non-combustible, compatible gases. (Natural gas option available.)
Wetted Materials: Consult factory.
Housing: Die cast aluminum case and bezel, with acrylic cover. Exterior finish is coated gray to withstand 168 hour salt spray corrosion test.
Accuracy: ±2% of full scale (±3% on - 0, -100 Pa, -125 Pa, 10MM and ±4% on - 00, -60 Pa, -6MM ranges), throughout range at 70°F (21.1°C).
Pressure Limits: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).
Overpressure: Relief plug opens at approximately 25 psig (1.72 bar), standard gages only.
Temperature Limits: 20 to 140°F (-6.67 to 60°C).
Size: 4″ (101.6 mm) diameter dial face.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Process Connections: 1/8″ female NPT duplicate high and low pressure taps - one pair side and one pair back.
Weight: 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).
Standard Accessories: Two 1/8″ NPT plugs for duplicate pressure taps, two 1/8″ pipe thread to rubber tubing adapter and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for 3 adapters in MP & HP gage accessories.)

Fantech

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

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



PERFORMANCE DATA

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

HVI MEMBER™

PERFORMANCE CURVES

Fantech provides you with independently tested performance specifications.

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

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

HP FEATURES INCLUDE

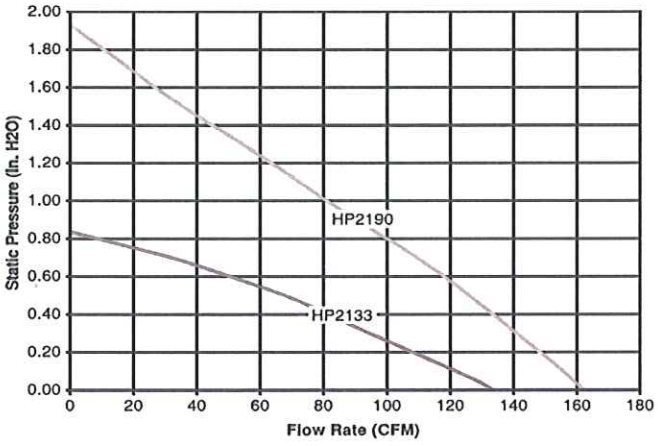
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty

c UL us

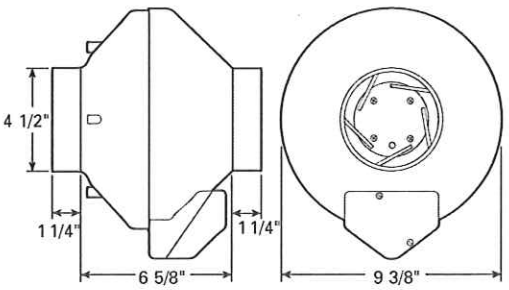
NOTE:

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

HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.

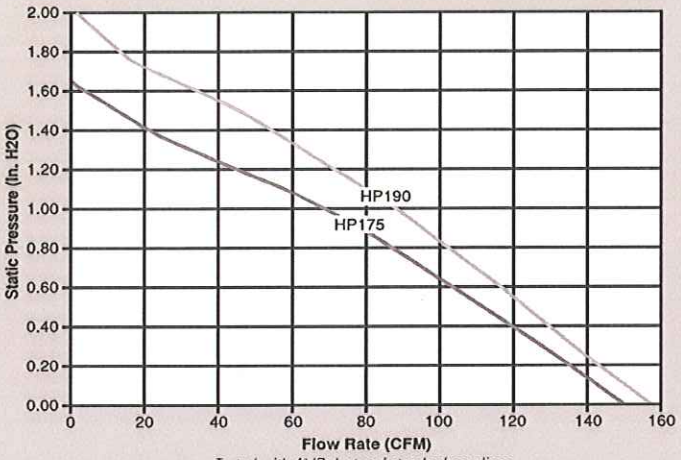


HP2133 – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

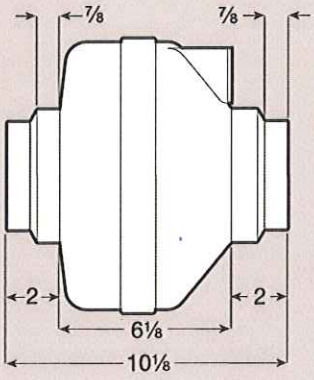
HP2190 – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

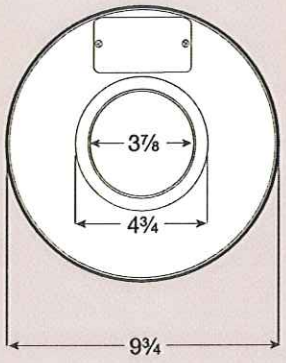
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-44, Pipeconx PCX 56-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

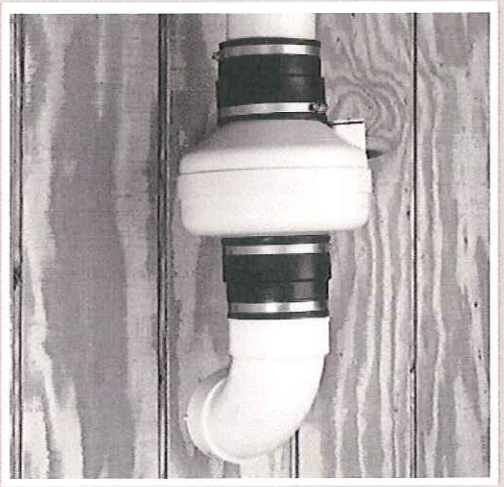
HP175 & HP190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.





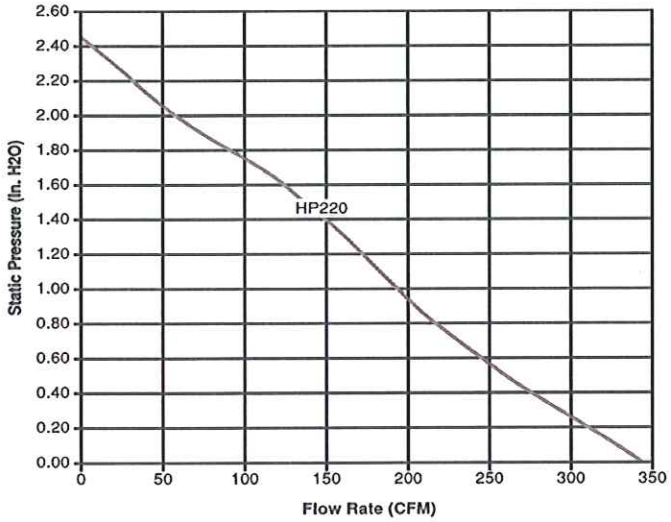


HP175 – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

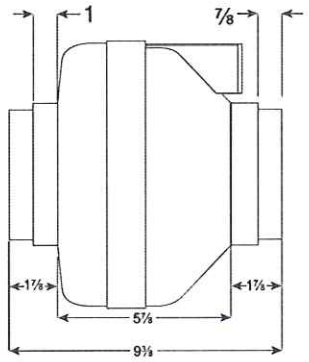
HP190 – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

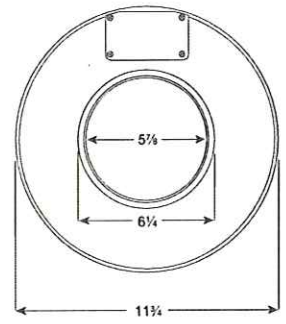
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP220 RADON MITIGATION FAN



Tested with 6" ID duct and standard couplings.





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

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

APPENDIX D

Emission Calculations

Conditions:

Concentration	= 210,334 ug/m^3 of tetrachloroethene = 2.1 x 10^5 ug/m^3 of tetrachloroethene
Rate	= 50 CFM at a building height of 16 feet
h_b	= Height of building in feet
Q	= Hourly emission rate
Qa	= Annual emission rate

Formula:

$$C_C = \frac{1.72 \times Qa}{(h_b)^2}$$

$$C_{CST} = \frac{90400 \times Q}{(h_b)^2}$$

$Q = 2.1 \times 10^5$ ug/m^3 x 50 ft^3/min. x 1gram/1.0 x 10^6 ug x 1 lb./436 grams X 60 min./hr. x 1 m^3/35 ft^3 = 4.1 x 10^{-5} lb./hr.

Qa = 4.1 x 10^{-2} lb./hr. x 24 hr./day x 360 days/yr. = 350 lb./yr.

$$C_C = \frac{1.72 \times 350 \text{ lb./yr}}{(16)^2} = 2.3 \text{ ug/m}^3$$ more than 1.0 ug/m^3

$$C_{CST} = \frac{90400 \times 4.1 \times 10^{-5} \text{ lb./hr.}}{(16)^2} = 15 \text{ ug/m}^3$$ less than 1.0 x 10^3 ug/m^3